



THE CRANE CORNER

Navy Crane Center Technical Bulletin

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A WORD FROM TOPSIDE

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Fiscal year 2010 is an unprecedented year for contracted work on Navy property. For construction contracts alone, FY 2010 workload is at an all-time high. Right in step with this is a high tempo of weight handling operations taking place on Navy property. Host activities and contracting officials face a significant challenge to ensure contractor weight-handling operations are conducted safely. Serious contractor weight-handling accidents in the past few years, new types of equipment, and lifts being made with equipment that is primarily used for other purposes have necessitated new rules to address these challenges.

The host activity commanding officer enforces policy for on-base safety. For contracted work, the policy includes the requirements for contractor weight handling set forth in NAVFAC P-307. Contracting officials must ensure the requirements of NAVFAC P-307 are incorporated into contracts, and, equally important, they must ensure, through communication and appropriate oversight, the requirements are understood and enforced.

Safe weight handling starts with safe well-maintained equipment. In addition to traditional cranes, NAVFAC P-307 now covers multi-purpose machines (MPMs), as well as forklifts and construction equipment when this equipment makes “suspended load” lifts with the load suspended by rigging gear from forklifts tines, equipment buckets, etc. MPMs are, as their name implies, equipment designed for multiple functions, one of which is a crane, usually including a winch for hoisting loads. Also covered is rigging gear, whether this gear is used with cranes, forklifts, etc., or whether it is used by itself in rigging operations such as in-hull operations in support of ship repair contracts. A responsible contractor official must provide a Certificate of Compliance attesting to the compliance of the equipment with applicable OSHA and ASME standards, as well as to the training and qualification of equipment operators and riggers.

Selective surveillance of contractor weight handling operations by knowledgeable government personnel is essential. This includes a review of critical lift plans, crane set up, area safety and control, effective communication, team manning, personnel protective equipment, and the lift itself. A checklist of areas to review is included in NAVFAC P-307. Take the checklist as a starting point and customize it based on past experience, local customs, type of contracted work, etc.

See the related article inside this issue for additional detail on contractor cranes on Navy property.

Global events and national recovery efforts have combined to result in multiple contractor cranes being commonplace at Navy shore activities. However, there is no such thing as a routine or commonplace crane lift. Contracting officials are faced with a daunting challenge to ensure weight-handling safety. With a safety mindset, safety partnerships with contractors, effective surveillance, and a focus on the small events to prevent the serious events from happening, we can accomplish the mission with a strong sense of urgency SAFELY! ■

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CRANE SAFETY AWARENESS FOR THE SUMMER MONTHS

As we approach the summer months, I again ask weight handling managers and supervisors to place a special focus on safe crane and rigging operations. Overall, the Navy shore based crane accident statistics thus far this fiscal year are comparable to the totals for the same period last year. Almost all of the reported Navy shore activity crane accidents have been attributed to human error. Historically, the summer months have brought us some real challenges in preventing crane accidents. With the distractions associated with the warmer weather, maintaining a sharp focus on the critical job at hand during weight handling operations will be challenging but we cannot expect anything less. We must strive to maintain focus and ensure that weight-handling operations are adequately planned and staffed to perform the task at hand. By intensifying safety awareness in all weight handling operations, we can make this fiscal year another record year for safety in the Navy shore weight-handling program.

Good planning, teamwork, communication, situational awareness and operational risk management (ORM) are all good tools for use in reducing the risk of an accident. Management should consider and address the impact of the summer vacation season on your crane teams. The team make up is often changing to support vacation schedules. A consequence may be degradation in communications or process unfamiliarity among the team.

Surveillance of crane and rigging operations by experienced personnel has proven to be an effective tool in accident prevention. During surveillances, look for warning signs of complacency or taking shortcuts, and include operations where there is no load on the hook. Historically, equipment damage and crane collisions have been the most common types of crane accidents and the percentages of these accidents that occurred with no load on the hook are 55 percent and 74 percent respectively.

Consider a preemptive safety awareness briefing to reinforce management's expectations for adherence to safe lifting and handling requirements and practices. Recognize safe practices and achievements where warranted. Seven crane accident prevention videos are available to assist activities in raising the level of safety awareness among their personnel involved in weight handling operations. These videos provide a very useful mechanism for emphasizing the impact that the human element can have on safe weight handling operations. In addition to these lessons learned safety videos, other videos are available (mobile crane safety, weight handling program for commanding officers, and mobile crane load test) to assist commands in crane safety awareness. All can be ordered from or viewed on the Navy Crane Center website: <https://portal.navfac.navy.mil/ncc>.

While the summer heat may be a contributing factor in some of the accidents, our data show that inside shop cranes have been involved in approximately one-third of all summer month accidents. Make sure to include inside shop operations and personnel in your surveillance activities, preemptive safety stand-downs, etc. Shop supervisors should consider utilizing the Navy Crane Center video "Safe Rigging and Operation of Category 3 Cranes." Copies of the video can be ordered from or viewed on the Navy Crane Center website.

Ensure all personnel involved in the weight-handling program understand our comprehensive crane and rigging gear accident definitions and report all events that meet those definitions. Our philosophy of reporting, and learning lessons from, the small events to help prevent more serious events has shown itself to be effective. Increased safety awareness by all personnel involved in weight handling operations and consistent application of ORM principles will help prevent crane accidents.

Each weight handling accident diminishes support to the fleet. A safe and reliable Navy weight-handling program is an essential enabler for fleet readiness. Commanding officers of Navy shore activities are strongly encouraged to intensify their efforts to raise the level of safety awareness in their weight handling operations and continue to strive for the goal of zero weight handling accidents. ■

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 ADVISORIES (CSA)

CSA 191A – Crosby O-319 Chain Nest Hook Connecting Pin Failure

The purpose of this CSA is to update activities of a change to CSA 191.

Background:

A. CSA 191 required activities to remove all Crosby O-319 and O-318 chain nest hooks from service and visually inspect the chain connecting pins for cracks or fractures due to a reported failure. No cracks or fractures were reported by responding activities.

B. The original equipment manufacturer (OEM) has investigated the failure of the chain-connecting pin and has isolated the problem to a special order of 26 chain nest hooks (Crosby O-319). Standard catalog chain nest hook components are supplied zinc plated. Due to a local operational requirement, the chain nest hooks were special ordered without zinc plating. The OEM's investigation found that as part of this special order the chain connecting pins were improperly heat treated by an outside vendor. The OEM also performed hardness checks on their inventory of standard catalog chain connecting pins and found no problems with the pin hardness or problems with any other components of the chain nest hook assemblies. All of the deficient pins have been accounted for and returned for replacement. The OEM has instituted additional quality assurance steps to prevent future problems with the heat treat process.

Direction:

A. This CSA supersedes and cancels CSA 191.

B. All Crosby chain nest hooks (O-318 and O-319) removed from service as part of the direction specified in accordance with CSA 191 may be returned to service.

CSA 178A – Slings Using ESCO 1/2-Inch Stainless Steel One-Piece Duplex Sleeves Not Meeting Required Design Factor

The purpose of this CSA is to update activities of a change to CSA 178.

Background:

A. CSA 178 alerted activities to the potential for slings using ESCO 1/2-inch one-piece duplex sleeves not developing the required design factor. ESCO previously stated a design change was implemented in production for the 1/2-inch one piece duplex sleeves that resulted in the sleeves having a thinner wall thickness and lighter weight (approximately 115 grams vs. 135 grams) than the previous design. CSA 178 required activities with wire rope slings fabricated using the subject sleeves manufactured after October 2006 to down rate the capacity to 4000 pounds or less.

B. ESCO has stated the tooling for the 1/2-inch stainless steel one-piece duplex sleeves was adjusted since issuance of CSA 178 in February 2008. The re-designed sleeves have a greater wall thickness and weight (134 grams) similar to the original design. ESCO reports individual pull testing of the re-designed sleeves yielded efficiency results at or above the required 95 percent of the wire rope minimum breaking strength while maintaining the minimum 5:1 design factor.

Direction:

A. This CSA supersedes and cancels CSA 178.

B. Activities that fabricate slings using the re-designed (minimum 134 gram weight) ESCO 1/2-inch stainless steel one-piece duplex sleeves are not subject to a 4000 pound down rating provided the weight of each individual sleeve is verified to weigh not less than 134 grams prior to fabrication of the sling. Documentation of weight verification of the sleeves shall be retained for the life of the sling.

C. Activities with any slings remaining in service fabricated between October 2006 and issuance of this CSA using ESCO 1/2-inch stainless steel one-piece duplex sleeves where the weight of each individual sleeve was not verified shall down rate the sling capacity to 4000 pounds or less. This down rating also applies to slings where the manufacture date of the sleeve cannot be determined.

D. This down rating is based upon slings fabricated using 1/2-inch diameter, 6 x 19 or 6 x 36, right regular lay, bright, EIP, IWRC wire rope. Slings fabricated with the subject sleeve using other constructions, lay, or grade of wire rope shall be removed from service or have documentation proving (by destructive test) the adequacy of the sling assembly to achieve a 5:1 design factor.

EQUIPMENT DEFICIENCY MEMORANDUM (EDM)

No EDMs have been issued since the September 2009 edition of The Crane Corner. 

SUMMARY OF WEIGHT HANDLING EQUIPMENT ACCIDENTS SECOND QUARTER FY10

The purpose of this message is to disseminate shore activity Weight Handling Equipment (WHE) accident and near miss lessons learned to prevent repeat accidents and improve overall safety.

For the second quarter of FY10, 49 Navy WHE accidents (33 crane accidents and 16 rigging gear accidents) and 10 contractor crane accidents were reported. Eleven crane accidents, 9 rigging gear accidents, and 3 contractor crane accidents were significant (overload, dropped load, two block, or injury). Some of the more significant accidents this quarter are discussed herein.

OVERLOAD

Accident: While in the process of weighing a 20' conex box a hook on one of the rigging legs was bent. The crane operator then replaced the rigging gear and utilized shackles to secure the rigging gear to the load and proceeded with the lift. When the lift cleared the ground, the crane operator discovered that the load weight exceeded the capacity of the crane by more than 25 percent.

Lessons Learned: This event consisted of two separate crane accidents, the rigging equipment damage (the hook), and the overload of the crane. The rigging gear was not properly attached to the conex box, thus tip loading the hook and causing it to bend. Personnel attaching the rigging were not properly trained for the use of rigging gear and did not stop and notify supervision/management of the crane accident when the damage

occurred as required by NAVFAC P307, section 12. The operator, who had received training on accident definitions and actions to take in the event an accident occurs, also had the responsibility of stopping the lift after the hook was damaged. When weighing objects of unknown weight using a load-indicating device (LID), an appropriate predetermined stop point shall be established and the LID shall be carefully monitored to ensure the stop point is not exceeded. If monitoring of the LID had been performed, the overload of the crane may have been prevented.

DAMAGED LOAD

Accident: During the uprighting of a cylindrical shape in a tilt fixture, a synthetic strap securing the component was removed. While booming up to center the hook over the load, the component rolled out of the tilt fixture, swung erratically and caused damage to the lifting adapter.

Lessons Learned: Investigation revealed that the crane hook was not aligned over the load and there was not sufficient tension in the hoist to maintain control of the load as the component neared vertical. The crane team was briefed on advance change notices for these lifts but failed to incorporate the process. Specifically, the crane team did not stop when the load reached 65 to 75 degrees and maintain tension on the hook. As discussed in NAVCRANECEN MSG 101516Z FEB 10, personnel assisting in lifting operations should be positioned such that they can ensure appropriate alignment of crane hoist, boom, and swing functions as components are lifted from horizontal to vertical or lowered from vertical to horizontal positions. Additionally, load indication devices should be utilized whenever possible to ensure sufficient tension is on the load to prevent loss of control.

TWO-BLOCK

Accident: A mobile crane operator was raising both hooks and simultaneously checking mirrors for obstructions in preparation for reverse travel. The anti-two blocking limit switch was not working and the hook block was hoisted into the lower boom nose sheave. The primary cause of the accident was operator inattentiveness. A secondary cause was identified to be an inoperative anti-two blocking limit switch due to icing.

Lessons Learned: During operation, the operator must remain alert and monitor each function being performed. Operators must not rely on limit switches to stop movement of the hoist during operation or pre-use operational checks. The operator must be prepared to stop operation if limit switches were to fail. While trying to do too much at once, this operator lost control of the operation.

RIGGING INJURY

Accident: Riggers were lowering a circuit breaker down a ladder opening in a ship's hull when a knot in the overhead bridle came loose, dropping the breaker onto the upper step of the ladder and pinning a rigger against the ladder's handrail.

Lessons Learned: Employees failed to properly use nylon lashing and obtain permission to use the lashing per local procedural requirements. Personnel are required to be trained on the procedures and requirements for operations they are assigned. Supervision must oversee weight-handling operations and ensure personnel are properly trained and able to perform tasks in a safe manner.

Accident: During the removal of a gas turbine generator, the generator moved forward and pinched the rigger's finger between the generator and its housing.

Lessons Learned: Shop personnel deviated from the procedure by using improper rigging (knots in synthetic slings) and did not heed a warning note that advised of the generator movement during removal. During rigging and crane operations personnel must maintain a constant awareness of their surroundings at all times. Personnel must not place themselves or allow others to be in positions where they, or parts of their body, may become trapped or pinched between the load and other objects or components. In addition, procedures must be understood and followed by all personnel involved with the job. If the procedure cannot be worked as written, stop the job and have the procedure evaluated and changed prior to continuing work.

Approximately 10 percent of the crane accidents this fiscal year have occurred during crane testing evolutions. Four of these accidents were considered significant (two two-block accidents and two overload accidents). Both two-block accidents occurred during the testing of mobile cranes and were attributed to operator error and inattention. The upper limit switches had been deactivated in both instances.

Lessons Learned: During crane testing, the safe operation of the crane is the responsibility of all personnel involved, including the crane operator, test directors, inspectors, maintenance mechanics, supervision, and riggers. A pre-test briefing must be performed and all personnel must be aware of what operations are being performed and their responsibilities. Some of the corrective actions that were taken by activities following load test related crane accidents are listed below:

- A. Brief personnel to ensure they review and follow procedures verbatim.
- B. Brief personnel on the hazards and risks that can occur during a controlled weight test evolution.
- C. Brief crane test teams to ensure the crane operating envelope remains clear of all obstructions and unauthorized personnel.
- D. Remind personnel to verify the center of gravity (CG) and properly position the crane over the CG prior to lifting.
- E. Brief personnel on the importance of practicing operational risk management (ORM) even with the most repetitive operations.
- F. Brief crane operators on reducing the speed of rotation, stowing unused hooks, and being aware of hook block location in relation to the whip line and limit switches.
- G. Use more experienced crane operators during testing evolutions.
- H. Examine the possibility of utilizing/procuring stackable test weights for testing.
- I. Increase the radius of the maximum load test on mobile cranes to mitigate the risk of the load colliding with the crane.
- J. Provide additional management oversight during load testing.

CONTRACTOR ACCIDENTS

Accident: Significant accidents included two injuries and one dropped load accident. Both injuries were the result of operator error.

Lessons Learned: Contractor crane oversight personnel must remain vigilant to ensure contractors are performing crane operations in a safe manner. They must also report all crane accidents (as defined by section 12 of NAVFAC P-307) to NAVCRANECEN.

Accident: A contractor crew was preparing to rig a pile to a spreader beam. While lowering the spreader beam, the crane operator tried to set the air brake but released the foot brake prior to the air brake fully engaging. The spreader beam dropped approximately four feet, striking and pinning an employee.

Lessons Learned: While loads, including spreader beams, are being raised or lowered, riggers must stand clear of the load and not approach the load until it comes to a complete stop. When rigging to suspended spreader beams, riggers must be careful not to place themselves directly beneath the spreader beam.

While this message normally focuses on crane and rigging accidents, there are many other potential opportunities for injuries and/or accidents within the day-to-day business of weight handling that are not directly related to crane operations or rigging. Several recent injuries highlight this point. During preparation for a crane diesel tank fueling operation, fuel splashed on an employee, resulting in an injury. In another instance, a ground support employee fractured his femur when he lost his grip while pulling on an object, and fell backwards. In yet another instance, a rigger received an electrical shock after an energized wire swung into the work area. While none of these is considered a WHE accident per NAVFAC P307 definition, they are no less important as they affect our ability to safely perform work.

Regardless of the work environment or work evolution, effective planning, teamwork, communication, situational awareness, and ORM are all good tools for reducing the risk of all accidents. Good job planning and communication go hand in hand. Supervisors must assess the workplace for hazards, select and provide the proper protective equipment, communicate selection decisions to the employees, ensure employees follow correct procedures, and ensure employees wear the proper equipment. Employees must understand and follow local safety procedures and work instructions. If local instructions and procedures cannot be worked as written, personnel should contact their supervisor or local safety office for further direction.

Weight handling program managers and safety officials should review the above lessons learned with personnel performing weight-handling functions and consider the potential risk of accidents occurring at your activity. This is also a good time to reinforce the principles of ORM. Our goal remains zero crane accidents. ■

CONTROL OF CONTRACTOR CRANES ON NAVY PROPERTY

As noted in the Word from Topside, contracted work is taking place at Navy activities on an unprecedented scale. NAVFAC P-307 paragraph 1.7.2 provides requirements for contractor cranes and weight handling operations, including some new requirements addressing recent trends.

In addition to traditional cranes, the scope of coverage now includes multi-purpose machines (MPMs) when they are used as cranes. A MPM is a machine that is designed to be configured in various ways, one of which allows it to hoist and move suspended loads by means of a winch or hook. These machines, because of their versatility, are becoming more common at construction sites. Also included are material handling machines, such as the various types of forklifts seen at construction sites, and standard construction machines (backhoes, loaders, etc.) when these machines are used to lift loads suspended by rigging gear. In essence, the same controls now in place for standard cranes (mobile cranes, tower cranes, floating cranes) also apply to these machines when they are being used as substitutes for cranes in lifting suspended loads. For these machines, proof from the equipment manufacturer is required to show that the machine is capable of making suspended load lifts. The contractor must demonstrate that the equipment is properly configured to make such lifts, and the equipment must have a load chart indicating allowable loads.

For each machine, a Certificate of Compliance (COC), NAVFAC P-307, figure P-1, is required to be posted on the machine. The COC is a certification by the supplier of the equipment that the equipment complies with applicable OSHA and ASME standards (host country standards may apply at Navy activities in foreign countries); that the operators, whose names appear on the certificate, are trained and qualified to operate the equipment; that the operators have been instructed not to bypass safety devices during lifting operations; and that the operators, riggers, and company officials are aware of actions required in the event of a weight handling

accident. No contractor crane or alternate machine should be seen on Navy property that does not have a COC posted on it.

Note: The COC also applies to the contractor's rigging gear, including gear used without cranes in weight handling operations, such as in-hull rigging operations.

For construction tower cranes (i.e., those covered by ASME B30.3), the following are also required: foundation design; installation instructions; assembly and disassembly instructions; the operating manual, including specific operation limitations and precautions; and periodic inspection and maintenance requirements.

The requirement for a documented qualification for the equipment operator now applies to machines with a rated capacity greater than 2000 pounds. All hooks on cranes, hoists, alternate machines, and rigging gear should have self-closing latches. With limited exceptions, if a hook does not have a latch, the hook must be secured by alternate means (wire, rope, heavy tape, etc.) during lifts.

The categories of critical lifts have been expanded to include the crane erection process and lifts in the vicinity of overhead power lines. Lifting of personnel suspended from MPMs, material handling equipment, or construction equipment is not permitted.

The same stringent definitions for crane and rigging gear accidents used by Navy shore activities apply to contractor weight-handling operations. Contractors need to be aware of these definitions and stop work, make the appropriate notifications, and thoroughly investigate the accident for corrective action whenever an unplanned event occurs.

Contracting officer representatives play a significant role in contractor weight handling safety at Navy activities. This includes ensuring the applicable requirements of NAVFAC P-307 are included in contracts where weight handling operations (suspended load lifts and rigging operations) might take place; ensuring the contractor is aware of these requirements; ensuring the proper actions are taken in the event of a weight handling accident; and performing surveillance of contractor lifting and rigging operations. NAVFAC P-307 figure P-2 is a checklist for performing oversight during lifting operations. This list, or a locally prepared equivalent checklist, must be used for contractor crane surveillance. Effective Government oversight of contractor weight handling operations is a key factor in ensuring the operations are performed safely. With the recent significant upswing in contracted work at Navy activities, ensuring the safety of contractor weight handling operations has never been more important. ■

APPENDIX P – CONTRACTOR CRANE (OR ALTERNATE MACHINE USED TO LIFT SUSPENDED LOAD) AND RIGGING GEAR REQUIREMENTS

| | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|
| <i>CERTIFICATE OF COMPLIANCE</i> | |
| This certificate shall be signed by an official of the company that provides cranes (or multi-purpose machines, material handling equipment, or construction equipment used to lift loads suspended by rigging gear) or rigging gear for any application under this contract. Post a completed certificate on each crane or alternate machine (or in the contractor's on-site office for rigging operations) brought onto Navy property. | |
| CONTRACTING OFFICER'S POINT OF CONTACT (Government Representative) | PHONE |
| PRIME CONTRACTOR/PHONE | CONTRACT NUMBER |
| CRANE OR ALTERNATE MACHINE SUPPLIER/PHONE (if different from prime contractor) | CRANE OR ALTERNATE MACHINE NUMBER (i.e., ID number) |
| CRANE OR ALTERNATE MACHINE MANUFACTURER/TYPE/CAPACITY | |
| CRANE OR ALTERNATE MACHINE OPERATOR'S NAME(S) | |
| <p>I certify that</p> <ol style="list-style-type: none"> 1. The above noted crane or alternate machine and all rigging gear conform to applicable OSHA regulations (host country regulations for naval activities in foreign countries) and applicable ASME B30 standards. The following OSHA regulations and ASME standards apply: _____ 2. The operators noted above have been trained and are qualified for the operation of the above noted crane(s) or alternate machine(s). 3. The operators noted above have been trained not to bypass safety devices during lifting operations. 4. The operators, riggers and company officials are aware of the actions required in the event of an accident as specified in the contract. | |
| COMPANY OFFICIAL SIGNATURE | DATE |
| COMPANY OFFICIAL NAME/TITLE | |
| POST ON CRANE (OR ALTERNATE MACHINE) (IN CAB OR VEHICLE) (or in the contractor's on-site office for rigging operations) | |

FIGURE P-1

| CONTRACTOR CRANE OR RIGGING OPERATION CHECKLIST | | YES | NO |
|--------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|----|
| 1 | Is the Certificate of Compliance, P-1, in the operator's cab (or in the contractor's on-site office for rigging operations) with the current operator's name listed? | | |
| 2 | Is the crane/machine transited to and from the job site correctly? Are the OEM instructions for travel being followed? | | |
| 3 | Does the operator know the weight of the load to be lifted? | | |
| 3.1 | Is the load to be lifted within the crane/machine manufacturer's rated capacity in its present configuration? | | |
| 4 | Are outriggers or stabilizers required? | | |
| 5 | If outriggers are required, are outriggers fully extended and down, and the crane load off the wheels? | | |
| 6 | Is the crane/machine level and on firm ground, if the ground is not firm is the crane/machine blocked? | | |
| 7 | If blocking is required, is the entire surface of the outrigger pad supported and is the blocking material of sufficient strength to safely support the loaded outrigger pad? | | |
| 8 | If outriggers are not used, is the crane/machine rated for on-rubber lifts by the manufacturer's load chart? If stabilizers are used and not outriggers and the wheels are not off the ground is this the correct setup in accordance with the OEM? | | |
| 9 | Is the swing radius of the crane counterweight clear of people and obstructions and accessible areas within the swing area barricaded to prevent injury or damage? | | |
| 10 | Has the hook been centered over the load in such a manner to minimize swing? | | |
| 11 | Is the load well secured and balanced in the sling or lifting device before it is lifted more than a few inches? | | |
| 12 | Is the lift and swing path clear of obstructions? | | |
| 13 | If rotation of the load being lifted is hazardous, is a tag or restraint line being used? | | |
| 14 | Are personnel prevented from standing or passing under a suspended load? | | |
| 15 | Is the operator's attention diverted? | | |
| 16 | Are proper signals being used at all times? Is the operator responding properly to the signals? Are radios used for blind lifts? | | |
| 17 | Is the load lifted a few inches to ensure it is secure and balanced? | | |
| 18 | Are empty hooks lashed or otherwise secured during travel to prevent swinging? | | |
| 19 | Does the operator remain at the controls while the load is suspended? | | |
| 20 | Do the operations ensure that side loading is prohibited? | | |
| 21 | Are personnel prevented from riding on a load? | | |
| 22 | Are start and stop motions in a smooth fluid motion (no sudden acceleration or deceleration)? | | |
| 23 | If operating near electric power lines, are the rules and guidelines understood and adhered to? | | |
| 24 | Is the lift a critical lift? | | |
| 25 | If so, are all regulations understood and check-off sheets initialed and signed off? | | |
| 25.1 | Are any overhead power lines in the vicinity? | | |
| 25.2 | If so, are complex lift rules and 1926.550(a)(15) being followed? | | |
| 26 | If pick and carry operations are allowed and performed, are OEM directions followed (e.g. rotation lock engaged, boom centered over front or rear, etc.)? | | |
| 27 | When the crane/machine is left unattended, is it in a safe condition? | | |
| 28 | Is rigging gear undamaged and acceptable for the application? | | |

FIGURE P-2 (1 of 2)

| | | | |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------|
| 29 | Does rigging gear meet applicable ASME or host country standards (e.g. ASME B30.9 for slings, B30.10 for hooks, B30.26 for hardware such as shackles, safety hoist rings, eyebolts, etc, B30.20 for below the hook lifting devices, etc.)? | | |
| 30 | Is the rigging gear inspected prior to use? | | |
| 31 | Is chafing gear used to protect slings (especially synthetic slings) and equipment from damage due to sharp corners and edges? | | |
| 32 | Is the rigging gear used in accordance with its working load limit? Is the load limit visible? | | |
| 33 | Are positive latching devices used on crane and rigging hooks, or are the hooks "moused"? | | |
| Contractor: | | Subcontractor: | |
| Location: | | | Date: |
| Notes: | | | |
| Signature of Contracting Officer's Representative: | | | |

FIGURE P-2 (2 of 2)

2011 WEIGHT HANDLING CONFERENCE

The Navy Crane Center (NAVCRANECEN) is planning a Navy Weight Handling Conference for the spring of 2011 in the Virginia, Hampton Roads area. The purpose is to share weight handling equipment (WHE) improvement initiatives and safety practices, as well as discuss related issues with the goal of further improvement in WHE safety, maintenance management, engineering, operations, and training. All Navy shore activities and shore based operational units with WHE are invited to attend and participate. Activities interested in making a presentation should call (757) 967-3832 or email NFSH_NCC_CONFERENCE@navy.mil. Conference information will be posted on the NAVCRANECEN web site, <https://portal.navfac.navy.mil/ncc> as it evolves. ■

SHARE YOUR SUCCESS

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

Operational Risk Management 5-Step Process

- Identify hazards
- Assess Hazards
- Make Risk Decisions
- Implement Controls
- Supervise (Watch for Changes)

Weight Handling Program Safety Videos

Accident Prevention, seven crane accident prevention lessons learned videos are available to assist activities in raising the level of safety awareness among their personnel involved in weight handling operations. The target audience for these videos is crane operations and rigging personnel and their supervisors. These videos provide a very useful mechanism for emphasizing the impact that the human element can have on safe weight handling operations.

Weight Handling Program for Commanding Officers provides an executive summary of the salient program requirements and critical command responsibilities associated with shore activity weight handling programs. The video covers NAVFAC P-307 requirements and activity responsibilities.

Load Testing Mobile Cranes at Naval Shore Activities provides load test personnel guidance on properly testing mobile cranes per NAVFAC P-307.

Mobile Crane Safety covers seven topics: laying a foundation for safety, teamwork, crane setup, understanding crane capacities, rigging considerations, safe operating procedures, and traveling and securing mobile cranes.

“Take Two” Briefing Video provides an overview on how to conduct effective pre-job briefings that ensures interactive involvement of the crane team in addressing responsibilities, procedures, precautions and operational risk management associated with a planned crane operation.

“Safe Rigging and Operation of Category 3 Cranes” provides an overview of safe operating principles and rigging practices associated with category 3 crane operations. New and experienced operators may view this video to augment their training, improve their techniques, and to refresh themselves on the practices and principles for safely lifting equipment and materials with category 3 cranes. Topics include: accident statistics, definitions and reporting procedures, pre-use inspections, load weight, center of gravity, selection and inspection of rigging gear, sling angle stress, chafing, D/d ratio, capacities and configurations, elements of safe operations, hand signals, and operational risk management (ORM). This video is also available in a stand alone, topic driven, DVD format upon request.

All of the videos can be viewed on the Navy Crane Center website:

<https://portal.navy.mil/ncc>