

THE CRANE CORNER

Dec 2018 100th Edition

Navy Crane Center Technical Bulletin

http://www.navfac.navy.mil/ncc

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A WORD FROM TOPSIDE

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A Word From Topside

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Share Your Success

The Honorable Richard Spencer, SECNAV, in a recent safety message stated, "I urge every Sailor, Marine, and Civilian to keep safety on the forefront of their thoughts and actions."

- I want to focus SECNAV's message on the Navy's Weight Handling Program
- 3 (WHP).

Navy WHP personnel - and to me, that means everyone associated with the

- 7 Navy's program, from deck plate personnel through weight handling program managers and certifying
- officials let's discuss some additional safety themes from the SECNAV's message:

Our Navy's WHP has matured over the years, and as such, has an improving safety posture. I applaud the efforts, and most importantly, the results of each individual associated with the Navy's WHP. As you know, there is always a 'But', BUT it only takes one miscalculation, one instance of being distracted. one instance disengagement that can result in equipment/ component damage, or even worse, an injury or fatality. SECNAV noted, "Safety awareness is more than a poster, video, or written message. It goes to the core of our readiness as a force." In defending our country, our way of life, we have to be able to accomplish our task safely

and efficiently. To me, safety is always first in that statement. I hope that safety is, and remains, first with you. SECNAV also noted four core themes to "invigorate our level of safety awareness" and "improve readiness". Not long ago I was asked where my dedication lied. response was with our deck plate worker, whether that worker be military or civilian. Face it, what we as Navy WHP professionals do, supports getting ships to sea, planes in the air, and personnel well trained such that they can fight the fight and be prepared to win. Each member of the Navy's WHP, through the job and task that they perform, supports this country's ability to be prepared. Accomplishing the support tasks becomes hard to do if we don't keep safety first. As SECNAV has stated, each of us has a role in creating a culture of safety. We should challenge ourselves on a daily basis to identify and resolve any issues that preclude us from continuously maturing that posture of safety, both in our professional life as well as our private

Please share this with all your Navy WHP personnel.

TIP OF THE SPEAR FIRST QUARTER FY19 EVALUATION SUMMARY

Forty-two of the 43 Navy activity weight handling programs evaluated in the first quarter were fully satisfactory; 1 program was marginally satisfactory. Monitor (observation) program issues continued to dominate evaluation items, as this was an item in 34 of the activities evaluated. The monitor program has not matured at many activities. At some activities, the program stagnated or regressed. Data derived from the monitor program can prove valuable in reducing significant accidents through the early identification of unsafe practices and near misses, and improving self-assessments with the identification of systemic program issues for correction. Also, there was a significant uptick in deficient metrics and/or metrics not being properly analyzed and acted upon. Metrics development is related to the monitor program as they can show how serious an issue is, whether in operations safety, maintenance and inspection effectiveness, equipment reliability, and other program areas, and they identify areas needing additional effort and provide justification for additional resources.

SUMMARY OF PROGRAMS EVALUATED

43 Navy WHE programs were evaluated, 42 were fully satisfactory and 1 was marginally satisfactory.

SATISFACTORY CRANES

45 of 52 cranes were satisfactory (87%).

Reasons for Unsatisfactory Cranes (four cranes had brake issues).

Trolley brake air gap out of specification.

Gouged brake solenoid armature, release mechanism, and housing.

Hoist holding brake out of specification.

Portal crane travel brake out of specification.

Overload limit switch setting exceeds OEM specification.

Trolley wheel spacing not in accordance with OEM specification.

Portal crane rotate function inoperative.

EVALUATION ITEMS

Common Evaluation Items (five or more items):

- Lack of monitor program or established program that needs improvement or does not cover all program elements 34 items.
- Various unsafe crane and rigging operations observed by the evaluation team (side loading, unattended load, standing/walking beneath load,

operating without signals, poor signaling, pinch points, slings bunched in hooks, load not balanced, no synthetic sling protection, brakes not checked at start of lift, side loading of shackles, trackwalker out of position, swivel hoist rings not torqued, trolley racked to one side, etc.) -25 items.

- Lack of leading metrics/metrics not being properly analyzed 17 items.
- Operator's Daily Check Lists/Operator's Monthly Check Lists (ODCLs/OMCLs) and simulated lifts performed incorrectly or not performed 16 items.
- Operators/riggers/inspectors/test directors lacked essential knowledge (recognizing crane accidents, complex lifts, knowing the weight of the load, how to connect special equipment, etc.) 15 items.
- Inspection and certification documentation errors
 15 items.
- Weakness in (or non-existent) activity self-assessments, self-assessments not acted upon, not internally focused, not developed utilizing documented monitor or metrics data 15 items.
- Training issues, including contractor personnel training not taken, training weak or not effective, refresher training not taken or not taken within three months of license renewal, lack of inspector training, instructor not authorized by NCC, locally required training not taken, training course score less than 80 percent, non-Navy eLearning (NEL) certificates) 12 items.
- Operator license/file discrepancies (no objective quality evidence (OQE) of performance exam, examiner not licensed, no OQE of safety course, no OQE of operation to waive performance test, course not signed by examiner, course improperly graded, corrective lenses not noted, course not graded, licensed for more than 2 years, license not in possession of operator, operating with expired license/training, operating with no license) 11 items.
- Lack of, ineffective, or insufficient crane replacement/modernization plan 11 items.
- ODCL/OMCL documentation deficiencies (including incorrect form used and pre-completed forms) 9 items.

- Poor inspections/inspection processes (incl. inspector removing load bearing fasteners voiding certification, inspections not performed, work documents not available for in-process inspections, unsafe practices, wire rope not inspected completely, fall protection PPE not utilized, deficiencies not identified, lack of a fall protection plan, bearing clearance checks not performed) 9 items.
- Lack of (or low number of) lower order crane accident/or rigging accident and near-miss reports
 9 items.
- No procedure for tagging equipment with known deficiencies and/or tagging equipment that is out of certification 8 items.
- Local WH instruction/SOPs non-existent or inadequate 7 items.
- Unrecognized/unreported accident, near miss, or unplanned occurrence (including damaged gear not investigated for cause) – 7 items.

- Crane marking issues, including hand signals not posted, monorail tracks not marked with rated capacities, directional signs not marked on crane, crane capacity incorrectly marked, hook not prominently identified, electrical equipment not marked per NEC, certification tag not visible to operator, multiple certification dates posted, no indicator that lower limit testing is not required) $-\ 6$ items.
- Cranes/rigging gear/crane structures/other section 14 equipment not in the program or lack documentation – 5 items.
- Crane improperly stowed/secured (hook block in, or too close to, upper limit switch or stowed in path of traffic, machines, etc., power not secured, stowed with gear left on hook and the hook latching mechanism not secured) 5 items.
- Bound load issues (not identified as complex lifts, load indicating device not used, chainfall not used)
 5 items.

SUMMARY OF WEIGHT HANDLING EQUIPMENT ACCIDENTS FOURTH QUARTER FY18

The purpose of this article is to disseminate and share lessons learned from select shore activity weight handling accidents, near misses, and other unplanned occurrences so that similar events can be avoided and overall safety can be improved.

For the fourth quarter, 67 Navy weight handling accidents (53 crane and 14 rigging) were reported, as compared to 79 for the third quarter. significant accident rates for crane and rigging accidents were 23 and 21 percent, respectively. There were 17 crane collisions (4 occurred with no load on the hook), which was the number one accident type for the quarter. Contractor accidents increased by over 50 percent as 9 accidents (6 crane and 3 rigging) were reported; however, only 2 contractor related near misses (1 each crane and rigging) were reported. The low number of reported near misses, when compared to accidents, suggests contractors need to encouraged to identify and report near misses, which will aid in preventing accidents. Two of the contractor accidents involved dropped loads. On a positive note, there were no OPNAV reportable accidents this quarter.

Five injuries were reported (three crane and two rigging). A worker's hand was injured (stitches) when it was caught between a pallet and the load. A mechanic/crane operator sustained an injured finger (stitches) while trying to steady a load and operate the crane at the same time. A worker suffered an injury (bruise/abrasion) when a sling parted prior to a component being lifted. A rigger was injured when a load shifted in the rigging causing the rigger to lose his footing and fall. An employee received burns to his hands when he tried to arrest a free falling load that jumped off a winch that was being used to control the load.

Lessons Learned: Three of these injuries occurred as a result of personnel placing their hands in pinch points. The use of taglines or utilizing other personnel while handling the load could have prevented some of these injuries. The load that shifted in the rigging causing the rigger to fall could have been avoided if the load was secured within the configuration more securely. In the last instance, body positioning was identified as a contributing factor of the line jumping off the winch. Body positioning should be discussed at all briefings to prevent injuries in the event unforeseen circumstances affect your job.

INJURIES

OVER-LOADS

Five overload accidents were reported (four crane and one rigging). All five accidents resulted from rigging gear being overloaded. During removal of an access patch, the rigging gear was overloaded when the weight of the patch was higher than listed in the procedure. During the lift of a water-borne anchor, rigging gear was overloaded and slings were damaged when the anchor was paid out faster than anticipated which shock loaded the rigging gear on a floating crane. A shackle was overloaded by lifting a ship's component that weighed more than the capacity of the shackle. Slings were overloaded when the weight of an aircraft component was heavier than estimated. An in-line dynamometer was overloaded during shipboard testing of a component when the component retracted faster than anticipated.

Lessons Learned: Three of the overloads were the result of either the load not lifting when expected (patch) or the lift was a joint operation where non-weight handling personnel (ships force) incorrectly operated components, which added weight to the evolutions (dynamometer and anchor overloads). In two of these overloads, personnel did not anticipate the potential of the load to increase. The other two rigging gear overloads were a result of not identifying correct weights prior These overloads could have been prevented had the riggers taken the time to verify the weight of the item being lifted versus the capacity of the rigging gear utilized to lift the None of the accident reports components. indicated that interactive briefs were conducted to verify expected weights and identify roles and responsibilities of all personnel performing the lifts.

TWO-BLOCK

Three two-block crane accidents were reported. A category 4 pedestal crane was two-blocked after the upper hoist limit switch was bypassed for troubleshooting and the operator was inattentive. A mobile crane was two-blocked while extending the boom in "rigging mode" to grease the extended boom sections; however, this mode disabled the anti-two block switch. A monorail hoist was two-blocked when the hoist raised instead of lowering due to incorrect electric power polarity. A maintenance crew installing the wrong hoist on the wrong side of the building reversed the polarity causing the hoist to operate backward.

Lessons Learned: In all three cases, no one was paying attention to the hook blocks to ensure two-blocking did not occur. Assignment of safety observers or spotters could have helped eliminate these accidents. All three two-blocking events occurred during maintenance or troubleshooting evolutions where normal processes and procedures were rendered ineffective. Increased oversight and development of robust maintenance procedures identifying all known hazards and techniques needed to accomplish work safely could have eliminated all of these accidents.

DROPPED LOADS

Two dropped load crane accidents were reported. While positioning a stator on blocking utilizing three of the chain hoists attached to a crane, one end of the stator dropped to the shop floor causing damage when a rigger adjusted one chain hoist. In the other accident, palletized and banded refrigeration bottles fell to the deck when one of the planks on the pallet separated, causing the bottles to become loose.

Lessons Learned: In the case of the stator, the load shifted and fell before others could act. Prior to performing any operations that involve multiple personnel and hoists, all actions should be evaluated to determine the effect they will have on the lift. The palletized dropped load lift could have been averted if the bottles were lifted using a proper bottle lifting container or a better inspection of the pallet was performed to identify deficiencies prior to lifting.

NEAR MISSES AND UNPLANNED OCCURRENCES

Activities reported 52 near misses (40 crane and 12 rigging) in the fourth quarter, as compared to 83 in the third quarter. Half of the near misses occurred when there was a load on the hook. Unplanned occurrences also declined slightly as 30 were reported, as compared to 37 in the third quarter. Two of the top 3 types of deficiencies identified in near misses this quarter were repeat items from the last quarter. First, improper selection and utilization of rigging gear, and second, improper crane operation (majority of which resulted in misspooled cranes).

Multiple near miss reports identified housekeeping issues with items adrift on loads or obstructions identified in crane travel paths. Two examples of "good" near misses were: (1) a crane was set to lift a transporter (no rigging sketch) when the crane team was informed by engineering that the lift would overload shackles based on two legs seeing the load (the team incorrectly assumed three legs were carrying the load) and (2) a rigging manager stopped a lift when it was observed that the synthetic slings were incorrectly routed through the ladder rungs of a sand hopper.

Weight handling program managers, operations supervisors, and safety officials should review the above lessons learned with personnel performing weight handling operations and share lessons learned at other activities with personnel at your

activity. As identified earlier, reporting of accidents and near misses is down this quarter; however, the significant accident numbers remain unchanged resulting in a slightly higher significant accident rate. Based on the time of year and increased workload, I'm concerned many observations to identify poor weight handling practices through activity monitor programs are not taking place. Participation in the monitor program by weight handling program managers and supervision is required by NAVFAC P-307; however, all activities should encourage all weight handling program personnel (maintenance, inspection, and test personnel, operators, and riggers) to participate in this process. The ultimate goal is for all personnel to have a part in maturing their activity's weight handling program.

EQUIPMENT DEFICIENCY MEMORANDUM

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. A complete list of CSAs and EDMs can be found on the Navy Crane Center's web site.

<u>EDM 110 - POTENTIAL FOR UPPER LIMIT</u> SWITCH WEIGHT TO BECOME LODGED IN LOAD BLOCK

1. BACKGROUND:

A. The purpose of this EDM is to inform activities of the potential for the secondary upper limit switch weight to become lodged in the main hoist block of Crane Technologies' bridge cranes.

2. DIRECTION:

A. An activity reported the secondary upper limit switch weight had become lodged in the main hoist block when backing out of the limit. The design featuring two U-bolts and a flat steel plate has the ability to be caught in the sheave opening of the block and is standard on most Crane Technologies' bridge cranes. The activity corrected this deficiency by replacing the weight with a cylindrical clamshell style weight.

B. Navy Crane Center recommends that during the next scheduled maintenance inspection activities with bridge cranes manufactured by Crane Technologies inspect the load block for the potential of the upper limit switch weight to become wedged in the load block. If necessary, the activity should make the appropriate crane alterations to modify the weights to prevent them from entering the block or change to a different style weight. Modifications to the existing block or upper limit switch require the activity to submit a crane alteration request to Navy Crane Center for approval per NAVFAC P-307.



EQUIPMENT DEFICIENCY MEMORANDUM

<u>EDM 111 – PREMATURE FAILURE OF O-RINGS DUE TO ENGINE OIL HEATER INCORRECT SETTING</u>

1. BACKGROUND:

A. the purpose of this EDM is to inform activities that incorrect temperature settings of engine oil heaters can result in high oil temperatures accelerating the aging of gaskets and rubber Orings.

2. DIRECTION:

- A. An activity reported leaks at the fuel rail due to ineffective O-rings. During the leak repairs it was discovered that the four-year-old O-rings had prematurely hardened which was attributed to the crane engine's oil heater being set at 185 degrees Fahrenheit vs 95 degrees Fahrenheit as recommended by the engine's manufacturer.
- B. NAVCRANECEN recommends that during the next scheduled maintenance inspection activities verify that the engine's block water and oil heaters are set at the correct settings for their environment based on the engine manufacturer's recommendations.

EQUIPMENT DEFICIENCY MEMORANDUM

EDM 112 - RECALL OF DAYTON ANCHOR SHACKLES AND D SHACKLES MANUFACTURED AFTER OCTOBER 2016

1. BACKGROUND:

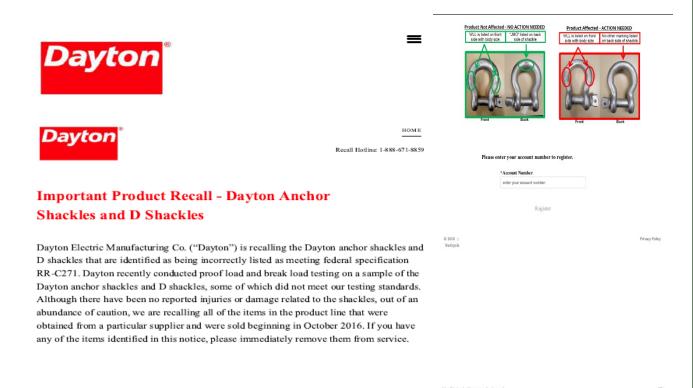
A. The purpose of this EDM is to inform activities of a known deficiency in some Dayton Electric Manufacturing Co. (Dayton) anchor shackles and D shackles. Dayton issued a product Recall Notice identifying non-conformance with testing standards. The shackles are incorrectly listed as meeting federal specification RR-C271 and some have failed Dayton's testing standards.

2. DIRECTION:

A. Anchor shackles and D shackles sold beginning in October 2016 which do not have a marking on

the back side of the shackle have been identified for recall. Shackles purchased from Dayton with JMO listed on the shackle are satisfactory and are not included in this recall. Both the affected and non-affected shackles will have a working load limit and body size listed on the front of the shackle. Product recall information and pictures can be found at https://daytonshackles.expertinguiry.com.

- B. Activities are reminded that shackles and other equipment covered in section 14.8 of NAVFAC P-307 lacking the original equipment manufacturers identification shall not be used in weight handling operations as addressed in section 14.8.1.1.
- C. Questions regarding this product recall should be directed to Dayton's Recall Hotline, 1-888-671-8859.



WEIGHT HANDLING TRAINING AND SAFETY BRIEFS

Weight Handling Training and Safety Briefs (WHTBs and WHSBs) are provided for communication to weight handling personnel. The following briefs were issued during the past quarter.

The briefs are not command-specific and can be used by your activity to increase awareness of potential issues or weaknesses that could result in problems for your weight handling program. They can be provided directly to personnel, posted in appropriate areas at your command as a reminder to those performing weight handling tasks, or used as supplemental information for supervisory use

during routine discussions with their employees. When Navy Shore Weight Handling Safety or Training Briefs are issued, they are also posted in the Accident Prevention Info tab on the Navy Crane Center's web site at http://www.navfac.navy.mil/ncc.

Navy Crane Center point of contact for requests to be added to future WHTB distribution is <u>nfsh ncc</u> crane corner@navy.mil.

Weight Handling Training

Title: Mobile Crane Slewing Ring Inspections

Target Audience: Mobile Crane Operations, Maintenance, and Inspection Personnel

Recent evaluations have identified deficiencies associated with the inspection and documentation of slewing ring bearing clearance and fastener torque verifications. The following features and components shall be checked:



15 November 2018

Slewing Ring Bearing MISR Inspections Attributes - NAVFAC P-307, Appendix C, Item 49, 49a, 49b

- Lubricate at every inspection and inspect expelled lubricant for metal flakes or plastic particles.
 The crane should be rotated a minimum of 720° (two full rotations) during lubrication.
- Verify fastener tightness at every "B" type maintenance inspection. This may be performed at
 every "C" maintenance inspection with a minimum of three consecutive satisfactory tightness
 inspections on record. All loose fasteners detected using this option shall be reported to the
 Navy Crane Center, Code 03 (In-Service Engineering). Loose fasteners shall be identified by
 permanent fastener number/location on inner or outer ring.
- For mobile cranes, a satisfactory tightness inspection is defined as no more than one loose fastener in any ring of fasteners.
- Also conduct bearing wear inspections at every "B" inspection. Follow the original equipment
 manufacturer (OEM) recommendations on method and acceptance/rejection criteria for the axial
 movement of the bearing. Request for clarification, deviation, or revision (RCDR) on periodicity,
 method and acceptance/rejection criteria will be considered and evaluated if the requesting
 activity obtains input and concurrence from the crane and bearing OEM.

Slewing Bearing Record Retention - NAVFAC P-307, Table 5-1

- Bearing clearance checks are maintained for life of bearing
- Satisfactory tightness checks are documented on the "B" and "C" MISR's but a record should be maintained to verify three consecutive satisfactory checks if that option is being utilized

Training Navy Crane Center 18-T-08

Weight Handling Training

Title: Evaluation Items Common to Mobile Crane Activities
Target Audience: Mobile Crane Operations and Maintenance Personnel



Recent evaluations have identified an increasing trend of unfamiliarity with operational safety devices on mobile cranes. The following features and components shall be checked:



Operational Safety Devices – In addition to the typical Load Moment Indicator or Rated Capacity Limiter mobile cranes are often equipped with other functional interlock devices such as operators seat or push button "deadman" switches or moveable armrest console that disable all functions when tilted back.

<u>ODCL Checks</u> - During the operational portion of the ODCL, operator's shall verify proper operation of all these operational safety devices verifying lockout of all functions. NAVFAC P-307, paragraph 9.1.2.1.4.j

MISR and CCIR Inspection Attributes – These additional interlock switches shall be inspected as appropriate during the MISR (NAVFAC P-307, Appendix C, Note 9) and proper operation verified during the no-load test/CCIR.(NAVFAC P-307, Appendix E, paragraph 1.1)

20 December 2018

Training

Navy Crane Center 18-T-09

DID YOU KNOW?

REVISION TO NAVCRANECENINST 11450.2A

DESIGN OF NAVY SHORE WEIGHT HANDLING EQUIPMENT

The Navy Crane Center recently announced the issuance of NAVCRANECENINST 11450.2A, Design of Navy Shore Weight Handling Equipment. This revision supersedes and cancels 11450.2. The instruction can be downloaded from the Navy Crane Center web site at https://www.navfac.navy.mil/ncc, and is also available on the NAVFAC enterprise document library (EDL) https://hub.navfac.navy.mil/webcenter/portal/document library.

SECNAVINST 11260.2A. Navv Weight Handling for Shore Activities, responsibility for the direction and oversight of all matters pertaining to the Navy's weight handling program at Navy shore activities to the Naval Facilities Engineering Commander, Command, and further states that these responsibilities shall be accomplished through the Navy Crane Center. Included among these responsibilities is development and maintenance of criteria regarding weight handling equipment Navy Crane Center's WHE (WHE) design. design criteria have been revised with input and participation from the Navy's major weight handling activities.

The major changes to the instruction compared to the previous revision are as follows:

- 1. Clarification of applicability to package hoists by specific paragraph number.
- 2. Alignment of NAVCRANECENINST 11450.2,

Unified Facilities Guide Specifications, Standing Crane Alteration Requests, and NAVFAC P-307.

- 3. Update of seismic and wind requirements for GPS and SPS cranes.
- 4. Update of technical specifications in all areas to match latest crane designs.
- 5. Revision of electrical specifications to incorporate latest variable frequency and radio control design requirements.
- 6. Clarified requirements for hoist brakes.
- 7. Relaxation of certain requirements not affecting safety or reliability including brake material, shimming, hook elongation, bumpers, electrical connections, and weldment prohibitions.
- 8. Large number of general clarifications and documentation of existing undocumented expectations throughout.

NAVCRANECENINST 11450.2A is applicable to WHE at Navy shore activities and detachments and shore-based fleet activities and detachments. These design criteria shall be used as the basis for technical specifications for the procurement of new and overhauled shore based WHE. These criteria shall also be utilized as the technical basis for crane alterations. See NAVCRANECENINST 11450.1B for policy on acquisition of Navy shore based WHE. The processes for crane alterations are provided in NAVFAC P-307.

WEIGHT HANDLING PROGRAM SAFETY VIDEOS

Accident Prevention provides seven crane accident prevention lessons learned videos to assist activities in raising the level of safety awareness among their personnel involved in weight handling operations. The target audiences for these videos are 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.

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 ensure 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, preuse 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 standalone, topic driven, DVD format upon request.

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

http://www.navfac.navy.mil/navfac_worldwide/specialty_centers/ncc/about_us/resources/safety_videos.html.

SHARE YOUR SUCCESS

We are always in need of articles from the field. Please share your weight handling/rigging stories with our editor nfsh ncc crane corner@navy.mil.

HOW ARE WE DOING?

We want your feedback on the Crane Corner.

Is it Informative?

Is it readily accessible?

Which types of articles do you prefer seeing?

What can we do to better meet your expectations?