THE CRANE CORNER

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Inside this issue:

A WORD FROM TOPSIDE

Tim Blanton

In this edition of The Crane Corner, I would like to discuss two very different issues affecting our Navy's Weight Handling Program. First, I want to discuss Crane Acquisition and Overhaul, and second, our Weight Handling Program community's awareness of 'Get Real, Get Better', a leadership movement sparked by the CNO's call to action for all Navy leaders.

Let's start with Crane Acquisition and Overhaul. SECNAVINST 11260.2B, Department of the Navy Weight Handling Program for Shore Activities, paragraph 6.a (4) provides acquisition guidance for weight handling equipment. Navy Crane Center (NCC) develops policy and procures cranes for the Navy's weight handling program. In 2016, NCC had a five-year average of 95 projects, encompassing 150 cranes. Since then, our procurement and overhaul workload has dramatically increased. We currently have 108 active projects, encompassing 247 cranes. As we look to the next five years, there are another 64 projects already in the queue encompassing an additional 105 cranes. We expect this number to grow as more projects mature and strategic plans are updated to reflect new program initiatives. It is also important to note that the workload encompasses larger, more complex projects than ever before. Driven by the Columbia-class platform needs (multiple sites across several SYSCOMs), the Shipyard Infrastructure Optimization Program (SIOP), the Naval Aviation Fleet Infrastructure Optimization Plan (FIOP), China Lake earthquake recovery efforts (61 cranes alone), and an aging overall Navy crane inventory, including portal cranes, the majority of these cranes are high priority for multiple SYSCOMs.

Frankly, this dramatic increase in workload has NCC looking at all aspects of the procurement process for streamlining and improvement, in order to support your, the Navy's, demand signal for weight handling equipment within the timeframes required to support your mission needs.

With that said, HELP ME HELP YOU! Numerous projects that come to NCC, come with, let's just say, insufficient information needed to develop the specification required for the solicitation process. When our acquisition personnel request additional information, please respond timely, with detail and accuracy. Timely and complete response will result in obtaining the cranes that will support your mission with minimal changes and accompanying delays.

Let's end with 'Get Real, Get Better', the CNO's January 2022 message to Navy Leaders. Get Real, Get Better is not a program; instead it is a desire to change the Navy's mindset and actions. Looking at the following excerpts from the Get Real, Get Better Leader's Guide, you will see a direct correlation between this initiative and the approach we have been taking with your activity's weight handling program, with regard to overall program management.

Self-Assess – Be your own toughest critic, continually evaluate yourself and your team. Be honest, humble, and transparent about your performance.

Know your actual capabilities and limitations. Challenge your beliefs using data, facts, and diverse input. Embrace the "Red" (negative trends) and identify meaningful corrections to address the problem, not the symptom.

Self-Correct – Continually fix small problems at the lowest level before they become larger issues.

Many of the above Get Real, Get Better principles directly align with many of NAVFAC P-307's program tools (e.g., self-assessment, monitor program, near miss reporting, unplanned occurrence reporting, metrics); however, the message here is to not just have the tools, but to use them effectively. Self-assessments are meaningless if you do not take a self-critical approach. The monitor program is much less effective if you are not self-corrective and transparent and instead are focused on quantity. Metrics, if not used properly, can easily become a hindrance. For example, some activities view their metrics as "the glass is half full", or even worse, establish their metrics to focus on the positives, not "embracing the red". Instead, activities need to view their metrics as what is wrong (i.e., "the glass is half empty") and refine or modify their metrics to identify the next problem area, thereby embracing the red.

I review every weight handling program evaluation report prior to signing the evaluation-forwarding letter. I feel uneasy when I come across a Navy weight handling program that has not reported any accidents, near misses, or unplanned occurrences in the last five years and whose monitor program contains little information.

It is obvious to me that activity is not embracing the Get Real, Get Better concepts. Conversely, an activity that is reporting near misses and lower threshold crane accidents, while having a monitor program that is self-critical, identifying poor practices, deficiencies, and process improvements... that's an activity that I am comfortable understands the value of lower-level issue reporting and subsequently the Command culture is one of self-critical and continuous improvement and learning. That is how I see Get Real, Get Better for our Navy's weight handling program.

Please consider these two topics and how they relate to your specific activity. If you are in the process of procuring cranes or procuring cranes in the near future, you cannot start your planning soon enough due to an already high industry workload and equally important, significant delays due to parts availability and the high cost of raw materials. Get Real, Get Better applies to all of us. It must be part of our culture both individually and within our weight handling programs.

We, our Navy's shore weight handling program professionals, are here for the following reasons: To put ships to sea, planes in the air, support to the best of our ability the systems to do so and support all who defend our country. Let's GRGB!

TIP OF THE SPEAR
SECOND QUARTER FY22 EVALUATION SUMMARY

Twnety-nine activity weight handling programs were given full evaluations in the second quarter.

20 programs were reviewed remotely. Reviews were limited to a review of activity-provided program management information, effectiveness of corrective actions taken since the previous evaluation, and discussions with activity supervision and management. Since the reviews did not cover all areas of an activity's weight handling program, the overall grade of satisfactory could not be provided.

All 29 activities given full evacuations were satisfactory. For the first half of FY22, the satisfactory rate for activities fully evaluated was 98%.

SATISFACTORY CRANES

25 of 27 cranes were satisfactory (95%). For the first half of FY22, 52 of 58 cranes were satisfactory (90%).

Reasons for Unsatisfactory Cranes

Electrical wires were disconnected on load controlling items. The brake torque spring length was below minimum tolerance.

EVALUATION ITEMS

Significant Items: Effective monitor programs result in better recognition of unsafe crane and rigging operations, which in turn result in better recognition of lower threshold accidents (avoidable contact with no damage) and near misses, thus helping to prevent serious accidents. In addition, the monitor program better enables development of a value-added self-assessment. Most of the activities evaluated had established monitor programs, although some activities still lacked a monitor program, which has been a requirement since 2016. However, numerous activities saw a decline in monitor program performance from the previous NAVCRANECEN evaluation to a point where the program had become ineffective. This key program area will continue to be a focus of NAVCRANECEN evaluations.

A lack (or very low number) of reported lower order crane or rigging accidents and near misses was indicative of failure to recognize these events, particularly at activities with higher operational tempos. Identification and reporting of such events has been shown to minimize the potential for significant accidents. Reviews of 23 weight handling programs identified this condition.

Issues with the self-assessment were noted in 21 of the reviews. A self-critical self-assessment, backed up by documented metrics, is a sign of a forward-looking mature weight handling program.

As evaluation teams increased on-site evaluations, observations of unsafe crane and rigging resumed. Such unsafe acts included side loading, unattended load, standing/walking beneath the load, operating without signals, poor signaling, pinch points, load not balanced, no synthetic sling protection, side loading of shackles, trackwalker out of position, and swivel hoist rings not torqued. Unsafe operations were observed at 19 activities.

<u>Other Evaluation Items (five or more items)</u>:

- Inspection and certification documentation errors – 14 items.

- Operators/riggers/inspectors/test directors/supervisors lacked essential knowledge (recognizing crane accidents, complex lifts, knowing the weight of the load, how to connect special equipment, etc.) – 14 items.

- Lack of, ineffective, or insufficient crane replacement/modernization plan – 10 items.

- Operator's Daily Check Lists/Operator's Monthly Check Lists (ODCLs/OMCLs) and simulated lifts performed incorrectly or nor performed – 9 items.

- Poor oversight of contractor responsibilities (maintenance, test, operations) – 9 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) – 8 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) – 7 items.

- Expired or non-program gear in use or not segregated from in-service gear – 7 items.

- Lack of leading metrics/metrics not being properly analyzed – 6 items.

- Operators/riggers/inspectors/test directors/supervisors lacked essential knowledge (recognizing crane accidents, complex lifts, knowing the weight of the load, how to connect special equipment, etc.) – 6 items.

- Lack of leading metrics/metrics not being properly analyzed – 6 items.

- Contractor crane checklists (Fig. P-2) issues (incorrectly completed, completed by contractor vice government, not current form, issues/deficiencies are not documented) – 6 items.

- High ratio of significant crane and/or rigging accidents – 5 items.

SUMMARY OF WEIGHT HANDLING EQUIPMENT ACCIDENTS THIRD QUARTER FY21

The purpose of this message 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 and efficiency of operations can be improved.

For the third quarter FY21, 61 Navy weight handling accidents (52 crane and 9 rigging) were reported, as compared to 56 in the second quarter. Significant rigging accidents decreased from 4 to 2 in the third quarter, with one being an OPNAV class 'C' reportable injury.

Significant crane accidents were unchanged at 7, and none were OPNAV class 'C' reportable accidents. As discussed in paragraph 8, near miss reporting in the third quarter remained consistent with second quarter totals. In addition, 3 significant contractor crane accidents were reported, 1 less than what was reported in the second quarter. These accidents included a pinch point injury (broken leg), a collision resulting in substantial property damage, and a dropped load. Weight handling contractor oversight personnel reported 6 contractor crane near misses, a decrease from the 17 reported in the second quarter.

INJURIES

Two accidents with injuries were reported, one crane accident and one rigging accident. A rigger's hand was injured when an auxiliary saltwater pump component shifted in the rigging and caught the rigger's hand between the pump and the ship's foundation. The individual experienced lost workdays during recovery and returned to work on limited duty. An electrician's hand was injured when caught between the ground and a shore power cable being lowered by the crane.

Lessons Learned: Investigation of both events identified that management and supervision did not ensure that personnel clearly understood their positions and roles within the active operating envelope, and rigging personnel did not establish adequate communications or maintain visibility of the load. In the event involving the saltwater pump, inadequate rigging support was a contributing factor. Multiple rigger turnovers occurred among the crew of riggers until the fourth assigned rigger made the determination to continue without a second rigger on-site. The rigger was unfamiliar with the rigging configuration and made incorrect adjustments to the load resulting in the load shifting.

In the event involving the shore power cable, the ship-to-shore electrician was inexperienced and lacked training on assisting with overhead lifting operations. The crane team did not witness the injury and reporting of the injury occurred five days after the event. Navy Crane Center issued weight handling program brief (WHPB) 21-16, Pinch Points and Hand Injuries, to increase awareness of pinch points and mitigate potential hand injuries.

DROPPED LOADS

Three dropped load accidents were reported (two
crane and one rigging). Paragraph 4 describes the dropped saltwater pump component. During acceptance testing of a new category 3 crane, the wire rope parted at the hook causing the test weights to drop approximately six inches to the floor. While conducting a stability check of a pallet of ship stores, the load (wrapped food) toppled over.

Lessons Learned: With regard to the parted wire rope, an inadequate acceptance inspection of a newly installed hoist and misunderstanding of the original equipment manufacturer (OEM) specifications for testing overloaded and subsequently parted the wire rope. Investigation identified that the hoist was tested at 179 percent of the safe working load. Additionally, the hook capacity was overlooked during planning of the acceptance test and records review, and the wire rope did not meet the design factor required by ASME B30.16 nor was the crane capacity properly down-rated. The activity is working with Navy Crane Center's In-Service Engineering Division on redesign as required. In the accident involving the loaded pallet, the rigger recognized that the pallet bar was not properly seated and rather than lowering and resetting the load, attempted to reseat the pallet bar by manually manipulating (kicking) the pallet bar while the load was suspended.

OVERLOADS

Five overload accidents were reported, four crane and one rigging. Paragraph 5 describes the overload during acceptance testing of a category 3 crane. During crane troubleshooting, a crane's 4,000-pound capacity was overloaded by 32 pounds. The maximum radius was exceeded during mobile crane load testing, resulting in an overload. The whip hoist of a portal crane and the associated rigging gear attached to the hoist were overloaded during a lift of a lifting fixture. During rigging work to install a propulsion motor, a section of wire rope lashing suspending the motor was overloaded.

Lessons Learned: The overload during troubleshooting occurred as a result of not factoring the weight of all the rigging gear used into the weight of the load. In the mobile crane overload, a low spot in the test area and excessive play in the outrigger (due to poor wear pad condition) resulted in the left rear outrigger rising approximately one inch off the ground, and the test weight moving approximately six inches beyond the pre-measured radius mark.

Two conflicting weights were provided for the fixture being lifted by the portal crane, and a load indicating device and predetermined stopping point were not utilized. Neither the lead rigger nor the supervisor verified the size and working load limit of the rigging gear for the propulsion motor during pre-staging of rigging gear. Additionally, at the time the overload occurred, the load had been suspended from the staged rigging by an unknown person. Navy Crane Center issued.

WHPB 21-12, Preventing Overloads, to reinforce the importance of understanding the weight of the load and the forces applied to the rigging configuration.

TWO-BLOCK

One two-block accident was reported. The auxiliary hoist block on a mobile crane was two-blocked when the operator-in-training engaged the wrong control lever.

Lessons Learned: The operator was not familiar with the functions of the crane and inadvertently engaged the auxiliary hoist in the up direction, without direction. When recognized by the rigger-in-charge, an all stop was called but it was too late to prevent damage to the auxiliary hoist wire rope and sheaves. The operator had not received performance training with a licensed operator prior to performing operational lifts.

NEAR MISSES

Activities reported 99 near misses (86 crane and 13 rigging) in the third quarter. Reporting was comparable to the 107 near misses reported in the second quarter. The level of near miss reporting is indicative of the level of oversight, a major contributor in reducing the occurrence of significant accidents. Navy Crane Center continued to recognize activities who reported lessons learned via the near miss reporting process, i.e., those where personal intervention prevented accidents, by issuing WHPBs 21-14 and 21-17.

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

CSA 243 – RECALL OF CROSBY GROUP 1-INCH SCREW-PIN SHACKLES

1. Background

A. The purpose of the Crane Safety Advisory is to inform activities of a known deficiency in certain 1-inch, 8.5 metric ton screw-pin shackles of The Crosby Group (CROSBY). CROSBY has issued a safety alert to inform customers of this deficiency. The shackles listed in paragraph 1.B below may have a previously undetected defect in the bow that can reduce the capacity from published catalog values. Continued use may result in shackle failure.

B. CROSBY has identified that 1-inch, 8.5 metric ton screw-pin shackles with stock and model numbers of 1018534 G-209 and 1018543 S-209 with a Product Identification Code (PIC) of TXJ are affected. The PIC is a three-digit code located on the shackle bow. These shackles were shipped from CROSBY between 23 November 2021 and 28 January 2022. No other sizes or PICs are part of this recall.

2. Direction

A. CROSBY requests that return and replacement of the shackles be arranged through your CROSBY distributor. For additional information on the recall contact CROSBY Technical Support at 1-800-220-8509 or crosbytechsupport@thecrosbygroup.com.

Crosby®

IMPORTANT SAFETY NOTICE

USERS OF THE BELOW CROSBY PRODUCT:

1018534 1" 8.50t G-209 Shackle
1018543 1" 8.50t S-209 Shackle

With Production Identification Codes (PIC) TXJ as located on the shackle bow

PLEASE CAREFULLY REVIEW AND ACT UPON THE FOLLOWING INSTRUCTIONS.

February 4, 2022

Dear Valued End User of Crosby Products:

THE CROSBY GROUP has determined the above listed screw pin anchor shackles may have a condition that can reduce the ultimate load capacity from the published catalog values. The shackle bow may have a previously undetected indication, and continued use may result in loss of load, property damage, severe injury, or death.

By use of the Production Identification Code (PIC) symbols appearing on the product, we have determined the 1" 8.5t screw pin anchor shackles with PIC TXJ shown on the bow may have this condition. See below image showing the position of the PIC on the bow. No other sizes or PICs are part of this Important Safety Notice. The potentially impacted products were shipped from Crosby between November 23, 2021, and January 28, 2022.

In the event you do have any 1" 8.5t shackles with PIC TXJ, we request you to remove them from service, and arrange for return and replacement. To return these products, please contact your Crosby Distributor. For more information concerning this Important Safety Notice, contact Technical Support at 1-800-220-8509 or crosbytechsupport@thecrosbygroup.com.

Please inform your customer(s) of this Important Safety Notice, or if you know of other users of the 1" 8.5t screw pin anchor shackles, please pass this notice on to that user, company, or firm.

We regret the inconvenience this may cause you and your organization and thank you for your cooperation. We are committed to providing you with the absolute best in Crosby quality.

Sincerely,
THE CROSBY GROUP

Production Information Code (PIC) Location

EDM 114 – CHANGE TO LUBRICATION REQUIREMENTS FOR BEARINGS INSTALLED IN LOAD HOISTING SHEAVES ON LINK-BELT TELESCOPIC MOBILE CRANES

1. Background

A. The purpose of this EDM is to inform activities of updates to the bearings installed in nylon load hoisting sheaves and their lubrication requirements on Link-Belt telescopic mobile cranes which may not be identified in the operator and service manual.

B. Beginning in the first quarter of 2021, Link-Belt Cranes began shipping telescopic mobile cranes with nylon load hoisting sheave assemblies that were white/natural in color utilizing bearings that are sealed for life and do not require lubrication. The sheave assembly has a plug installed in the typical grease fitting location of the sheave. Prior to the change, some crane models utilized sheave bearings that were sealed for life and some utilized sheave bearings that required lubrication with a grease fitting. In some instances where sheave assemblies have sealed for life bearings, the operators and service manuals delivered with the cranes were not updated and still indicate open bearings that require regular lubrication.

2. Direction

Sheave assemblies with sealed for life bearings all have a plug installed instead of a grease fitting and do not require periodic lubrication.

Link-Belt Cranes
2651 Palumbo Drive
Lexington, Kentucky 40509
(859) 263-5200
http://www.linkbelt.com

March 11, 2022

Subject: Lubrication requirement documentation of load hoisting sheaves on Telescopic Cranes.

Models Affected: Telescopic Mobile Crane Models.

The purpose of this letter is to inform users of updates to the bearings installed in load hoisting sheaves and their lubrication requirements on telescopic mobile cranes.

Beginning in the first quarter of 2021, Link-Belt Cranes began shipping telescopic mobile cranes with nylon load hoisting sheave assemblies that were white/natural in color utilizing bearings that are sealed for life and do not require lubrication. The sheave assembly has a plug installed in the typical grease fitting location of the sheave. Effective with this change, all current telescopic crane models now utilize load hoisting sheave assemblies with sealed for life bearings.

Prior to the change, some crane models utilized sheave bearings that were sealed for life and some utilized sheave bearings that required lubrication with a grease fitting. In all instances, sheave assemblies with bearings that require lubrication have a grease fitting installed. Sheave assemblies with sealed for life bearings all have a plug instead of a grease fitting.

As part of the change, updates were needed in some operator's manuals and lubrication charts to remove the lubrication requirement. In some instances, cranes shipped from the factory with the new white sheave assemblies with sealed for life bearings, but the operator's manual and lubrication charts still indicated they were required to be lubricated.

Please inspect the load hoisting sheave assemblies on your crane for a grease fitting. If present, lubricate with NGLI Grade No. 2 grease for temperatures above -10°F or NGLI Grade No. 1 grease for temperatures below -10°F every 50 hours of operation. If no grease fitting is installed lubrication is not required.

Please place a copy of this letter in your files for future reference in regards to this issue.

If Link-Belt can be of further assistance or answer any questions please contact us.

Best Regards,

John P. Jones
Design Engineering Manager: Telescopic Booms, Attachments and Lattice Cranes
Link-Belt Cranes

WEIGHT HANDLING PROGRAM BRIEFS

Weight Handling Program Briefs (WHPBs) 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 Program 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 WHPB distribution is nfsh ncc crane corner@navy.mil.

Navy Shore **Weight Handling Program** Brief

Title: Near Miss Lessons Learned – January 2022

Target Audience: Weight Handling Program and Crane Oversight Personnel

During recent weeks, multiple near misses have been submitted, the reporting of which help prevent accidents. NCC continues to stress the importance of reporting near misses which can be used for lessons learned at all activities.

TRF KINGS BAY, GA – A crane team promptly stopped all operations following an all clear to hoist the gear when a synthetic round sling caught on the upper portion of an aligning pole. While executing crane and rigging evolutions, it is critical that all personal keep their eyes on the lift for the entire duration of the lifting operation until the rigging gear is clear of any interferences.

PORTSMOUTH NAVAL SHIPYARD – The rigging team called an ALL STOP during removal of a component when the chain hoist was operated in the wrong direction causing the component to lower.

PUGET SOUND NAVAL SHIPYARD & IMF – A supervisor stopped rigging of a hull cut lift where the weight was not known, preventing the overload of a one-ton chain hoist. To avoid overloading rigging gear, the lead rigger (with team back-up) shall know the weight or have a reasonable estimate of the weight to be lifted. Alternatively, an LID shall be used, with stopping points established and monitored to ensure the stop point is not exceeded.

Contractor Crane Near Miss Lessons Learned

NAVFAC FAR EAST – Prior to preforming a lift, contractor crane oversight personnel prompted the contractor to stop all crane operations when the contractor crane operator was observed using a cell phone during crane operations.

NAVFAC SOUTHWEST (CHINA LAKE) – A ship's safety officer stopped all operations when the contractor was observed performing work at height with their fall protection equipment attached to a suspended load.

13 January 2022 | **Navy Crane Center** | *WHPB 22-02*

Navy Shore Weight Handling Program Brief

Title: Crane and Rigging Lessons Learned – February 2022

Target Audience: Weight Handling Program and Crane Oversight Personnel

During recent weeks, multiple near misses have been submitted, the reporting of which help prevent accidents. NCC continues to stress the importance of reporting near misses which can be used for lessons learned at all activities. Well done to the following activities where intervention prevented potential accidents:

PUGET SOUND NAVAL SHIPYARD & IMF – A lift of a moisture separator was stopped when the supervisor identified that the rigging gear would potentially damage the coolant fins on the separator.

PORTSMOUTH NAVAL SHIPYARD – Two events were reported. First, maintenance work to torque fasteners on the main hoist brake foundation was stopped when the mechanic identified incorrect torque specifications were outlined in the work instructions. Second, an observer intervened when two lifting eye bolts were not fully engaged into the load or properly aligned to avoid side loading.

NMC (SASEBO) – The rigger-in-charge (RIC) performed a pre-lift path check which identified that a shipboard waterline security light presented a potential fouling hazard for the tag lines.

FRC FAR EAST (PWD YOKOSUKA) – During a lift of a palletized load, a rigger observed the load to be unstable and stopped the lift preventing a potential dropped load accident.

Contractor Crane Near Miss Lessons Learned

NAVFAC HI FEAD – After lifting an air conditioner approximately six feet to provide some clearance, the contractor started to go under the load to place the horizontal brace assembly. The contractor crane oversight representative stopped the worker from going under the load and informed the individual to never get under a suspended load.

9 February 2022 | **Navy Crane Center** | *WHPB 22-03*

Navy Shore Weight Handling Program Brief

Title: Near Miss Lessons Learned – March 2022

Target Audience: Weight Handling Program and Crane Oversight Personnel

In the recent months, near miss and lower threshold crane accident reporting has declined. NCC continues to stress the importance of identifying and reporting near misses and lower threshold crane accidents. Each report provides an opportunity to share lessons learned at all activities. By focusing on and learning from minor events, it is possible to reduce the probability of a significant accident. ALL personnel should be encouraged to recognize and report weight handling program deficiencies and potential near miss events. Well done to the following activities that identified and reported these near misses, where intervention prevented potential accidents:

- **FRC EAST (CHERRY POINT) –** During a shop walk-thru check, the lead rigger found a main gearbox/rotor-head assembly partially suspended and resting on support blocks. The crane pendant was in a clam shell lock; however, the crane/load and area were not secured per the REQUIREMENTS of NAVFAC P-307 paragraph 10.8. Loads that are partially SUSPENDED from a crane can easily become unstable and result in a severe weight handling event.
- **NAVFAC SOUTHWEST (SAN DIEGO) –** While observing a crane crew rig a pump with nylon slings, the supervisor halted the operation when sling protection was not being used over sharp edges. Supervisors should stress the importance of ensuring that sling protection is to be used where there is a possibility of the sling being cut at corners or edges or otherwise damaged by abrasion or excessive bearing stress prior to making the lift per the REQUIREMENTS of NAVFAC P-307 paragraph 14.7.4 .
- **TRIDENT REFIT FACILITY BANGOR –** The crane walker for a portal crane promptly pushed the emergency stop button after recognizing that a worker exited a service tunnel directly into the travel path of the crane averting a potential injury. Weight handling managers should assess crane operating envelopes to ensure all access points to areas of travel are secured or clear of personnel including service entrances and conex boxes close to the travel path.
- **TRIDENT REFIT FACILITY KINGS BAY GA –** An alert worker was able to safely remove a warning barrier stanchion that had fallen over into the crane travel path thus averting a crane accident.

17 March 2022 | **Navy Crane Center** | *WHPB 22-04*

Navy Shore Weight Handling Program Brief

Title: Limit Switch Maintenance, Inspection & Testing Precautions

Target Audience: Crane Maintenance, Inspection, Test, and Engineering Personnel

Over the past few months, there has been an increase in the reporting of crane accidents, near misses, and unplanned occurrences during maintenance evolutions involving the testing and troubleshooting of limit switches. When working on or testing the functionality of any operational safety device, extra care should be taken to ensure the components and systems operate as expected, and be prepared for the possibility of a limit switch failure.

Recent Events

- A limit switch for the bridge function was damaged due to a misalignment with the striker plate.
- During upper hoist limit switch checks, the limit switch counter-weight dislodged from the wire rope causing the limit switch to malfunction.
- An electrical bypass switch was engaged in the wrong position defeating the lower limit switch and allowing the hoist block to nearly collide with the shop floor.
- While testing the upper limit switch on a chain hoist, the dead end of the chain detached from hoist body; the chain tumbled from the chain storage container and fell to the floor.
- While adjusting the left swing secondary limit on a stiff leg derrick, the railing contacted the right swing pinion gear cover.
- The main and auxiliary hoists of a portal crane were stored in their upper limits with the boom close to minimum radius while troubleshooting electrical problems; the wind blew the hooks causing the auxiliary block to contact the main block causing damage.

Limit Switch Maintenance Precautions

- **Visually Inspect the Components of the Limit Switch**: Prior to testing functionality of a limit switch, inspect for evidence of damage. When possible and with the exception of everyday testing of the primary hoist's upper limit, limit switch electrical functions should be checked first by using hand or other means to activate the switch.
- **Watch Standers**: When possible, watch standers should be stationed during operations to prevent damage.
- **Situational Awareness of Crane Position**: Maintenance personnel may be positioned outside the visual range of the crane operator. Communication (verbal/radio) between all personnel should be maintained throughout crane maintenance operations.

24 March 2022 | Navy Crane Center | WHPB 22-05

Navy Shore Weight Handling Program Brief

Title: Operations in the Vicinity of Hoist Limit Switches

Target Audience: Operators, Riggers, and Weight Handling Program Oversight Personnel

Operational Safety Devices (OSDs), such as interlocks and limit switches, are installed to protect the safe lifting and handling capability of the equipment. These devices are used not only for the equipment's protection but for your protection as well. A review of data from recent evaluations has identified an increase in findings of hoist blocks stowed in or near the upper limit which can contribute to two-block accidents similar to the reversed polarity example discussed below.

Recent Events

- **Reversed Polarity**:
  - A fused disconnect was incorrectly installed with a swapped phase in a 3-phase circuit. As a result, crane operating controls were reversed and safeties were void. When unknowingly operated under these conditions, the crane was two-blocked.
  - During the pre-use inspection of an inside shop crane, when the operator pressed the hoist down button on the controller, the hook block hoisted up causing a two-block.
- **Crane Positioning**:
  - During mobile crane boom maintenance requiring the use of Manual mode to telescope the T1 boom section only, the crane operator and technician did not ensure the wire rope was spooled off the winch drum which resulted in the auxiliary block to be two-blocked into the auxiliary sheave when the boom extended.
  - Following the re-reeving of a contractor mobile crane the anti two-block switch was not verified for connection and proper operation. While extending the boom the whip line and hook went over the top of the whip line sheave causing damage to the anti-two block device, sheave and wire rope.

Don't Forget to – LOOK UP - KEEP YOUR EYES ON THE BLOCK!

Operators must understand that safety devices, such as interlocks and limit switches, are NOT to be used as operational aids. Limit switch testing shall be performed at slow speed with EYES ON THE BLOCK!

- **Pre-Use Check**: Operators shall perform a pre-use check whether the crane is used in production or maintenance & testing. In addition, the first operator in each subsequent shift that day shall perform an operational check of the crane, to include the hoist primary upper limit switch. The recommended *first operation is hoisting up* to ensure the hoist moves away from the upper sheave assembly or trolley/hoist frame if it moves in the wrong direction.
- **Situational Awareness of Crane Position**: Operators shall be trained to approach limit switches only at slow speed. **OSDs are not a substitute for full attention by the operator to potential hazards. When checking hoist limit switches KEEP YOUR EYES ON THE BLOCK!**
- **Securing/Transiting the Crane**: DO NOT store the hook block in the upper limit unless allowed by the OEM or activity instruction. *Provide sufficient clearance below the upper sheave assembly or trolley/hoist frame* so that the subsequent operator performing a pre-use check will be able to stop the hoist motion before a two-block event occurs in case the hoist does not operate in the correct direction upon initiation.

15 April 2022 | Navy Crane Center | WHPB 22-06

Navy Shore Weight Handling Program Brief

Title: Near Miss Lessons Learned – April 2022

Target Audience: Weight Handling Program and Crane Oversight Personnel

NCC continues to stress the importance of identifying and reporting near misses and lower threshold crane accidents. Each report provides an opportunity to share lessons learned at all activities. By focusing on and learning from minor events, it is possible to reduce the probability of a significant accident. ALL personnel should be encouraged to recognize and report weight handling program deficiencies and potential near miss events. Well done to the following activities that identified and reported these near misses, where intervention prevented potential accidents:

- **PORTSMOUTH NAVAL SHIPYARD** – Two separate potential personnel injury events were avoided when team members intervened. First, riggers installing a component under the torpedo tray in a dark hazardous area, stopped the evolution when the mechanic started to reach under the load to locate a bolt hole. Second, while testing life lines in a horizontal pull test machine, an employee walked past the safety barriers and signs that were put in place to prevent access to the area while testing. The observer stopped the test and the employee was directed to leave the area.
- **NAVFAC EURAFCENT (Rota)** – An all stop was called by the crane crew and a potential overload was avoided when the boat was being hoisted from the water and the weight of the boat reached 72% of the crane's capacity and had not cleared the water. The weight provided to the crane team was a dry weight and not the boat's outfitted weight. Lessons learned is that by having an LID with a conservative stopping point, you can prevent serious events from occurring even if other things are wrong (e.g., wrong weight).
- **TRF (KINGS BAY)** – The lift of a submarine fairing, which was reported ready to remove during the complex lift briefing, was paused when the supervisor identified the bearing shoes had not been loosened per the procedure. This is a great example as to why it is important to always follow the approved written procedure.
- **NAVAL SURFACE WARFARE CENTER CARDEROCK DIVISION** – While preparing to lift a vessel salvage air bag, the crane operator noticed the bag was still tied to the boat and refused to hoist when signaled by the rigger-in-charge until a rigger untied the line from the boat. Crane operators can be in the best position to observe the entire crane operating envelope. Crane operators are a key and integral part of the crane team and should not perform any operation observed to be an unsafe act or when the lift is not being conducted as planned. Stop and re-brief, then document the issue!

18 April 2022 | **Navy Crane Center** | *WHPB 22-07*

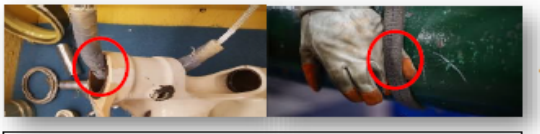
Navy Shore Weight Handling Program Brief

Title: Pinch Points and Hand Injuries

Target Audience: All Weight Handling Program Personnel

Earlier this month (April 2022), a rigger apprentice underwent surgery to partially amputate their injured finger when they put their hand in a pinch point. Earlier this FY, an assist tradesmen partially amputated their finger, also in a pinch point, when the load shifted during a rigging evolution. These two OPNAV Class "B" events are stark reminders of the risk involved in our work and in the role you play as weight handling professionals to ALWAYS remember the importance of "watch team back-up" and for keeping all personnel safe and away from hazardous areas such as pinch points.

Always remember that if an operation cannot be completed without placing your hand in a pinch point, **stop and notify your supervisor.**



Pinch Point is defined as, "a point or area where a person or part of a person's body may become crushed or "pinched" due to being trapped against the load and a stationary object, or moving parts of the crane or other machinery and a stationary object (or object moving at a different velocity)."

Provide Watch Team Back-Up

If you see someone in a questionable location – **Say something!**

- **Be aware of pinch points created** by objects that move and come into direct or close contact with relatively fixed objects (e.g., loads in close proximity to bulkheads or other fixed equipment, loads that are swept by the rigging, suspended loads near fixed or mobile equipment). Always pay attention to where your hands are when seating or manipulating a load.
- **ALL involved personnel should be** thoroughly briefed on the operation, to include, discussion of hazardous areas within the operating envelope, expected movement of the load, specific pinch points and the potential fall zone.
- **Recognize the experience level of the personnel in the operating envelope.** Often personnel within an operating envelope, such as, assist trades, maintenance personnel, or a less experienced apprentice may not understand the hazards associated with the potential for unexpected movements of the load.
- **Specific pinch point hazards**, locations (e.g., where in the process), and mitigating actions should be discussed at **ALL** pre-job briefs. **Simply stating that pinch points exist is not sufficient.** Briefs should stress to individuals to be careful with regard to where they are placing their hands. Supervisors should stress the importance of using gloves to minimize the potential for injury.

19 April 2022 | **Navy Crane Center** | *WHPB 22-08*

INCREASE IN CONTRACTOR CRANE OVERSIGHT DUE TO A RECENT RISE IN ACCIDENT SEVERITY

1. Background:
A. The purpose of this message is to ensure Navy activities and contracting officers take appropriate action in response to increasing contractor crane accident severity. Recent increases in significant crane accidents, as defined in Ref A, have raised the significant accident rate to 38 percent, as contractor crane significant accidents have increased in both quantity and severity, including personnel injuries, damage to a building under construction, and a nearly turned over mobile crane. Also of concern, near misses and minor damage accidents have recently declined below the reporting level of significant accidents, indicating a decline in oversight.

B. Contracting officer representatives and personnel who oversee contractor weight handling operations play a vital role in ensuring the safe operation of contractor cranes. Robust oversight and follow-up to ensure contractors implement agreed upon corrective actions are essential in reducing the number of significant contractor crane accidents.

C. Ref A, paragraph 11.2 identifies the minimum requirements for overseeing contractor weight handling operations. The degree of oversight shall be based upon the risk to personnel and property; however, oversight shall be performed at least once and the minimum periodicity shall be not more than every 30 days. When critical lifts are involved, oversight periodicity shall be not more than every 14 days. Appendix P, figure P-2 (or form 16 -2 of Ref B as an alternate for construction contracts), provides a checklist that shall be used during oversight of contractor crane and rigging operations. Copies of the applicable form shall be kept on file for one year.

2. Action:
A. Contracting officers or their designated contractor crane oversight personnel shall be briefed on the increase in contractor crane accidents and severity by 21 January 2022. NAVCRANECEN Weight Handling Program Brief 21-37 (Contractor Weight Handling Accidents and Near Misses), as a minimum, shall be used for the brief, which can be accessed via the NAVCRANECEN website at https:// www.navfac.navy.mil/ncc. Discuss with contractor management the expectations of reporting near misses and lower level events and the benefits this reporting has on significant accident prevention. Encourage contractor operators and riggers to recognize and report near misses and minor accidents.

B. Effective immediately, contractor crane oversight as outlined in Ref A, paragraph 11.2 shall be increased to a minimum of one observation per week through 25 February 2022 during contractor crane operations.

C. Contractor crane oversight per Ref A (once per month, every two weeks for critical lifts) may be resumed based on satisfactory observations for the previous six weeks. For poorly performing contractors, oversight shall be increased as necessary until satisfactory compliance is observed.

Repeat offenders shall be reported to the contracting officer so that additional actions can be taken, to include, removal from installation if necessary.

3. NAVCRANECEN evaluation teams will be increasing their focus on contractor crane oversight in 2022 during upcoming evaluations, to include reviewing compliance with this message.

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.

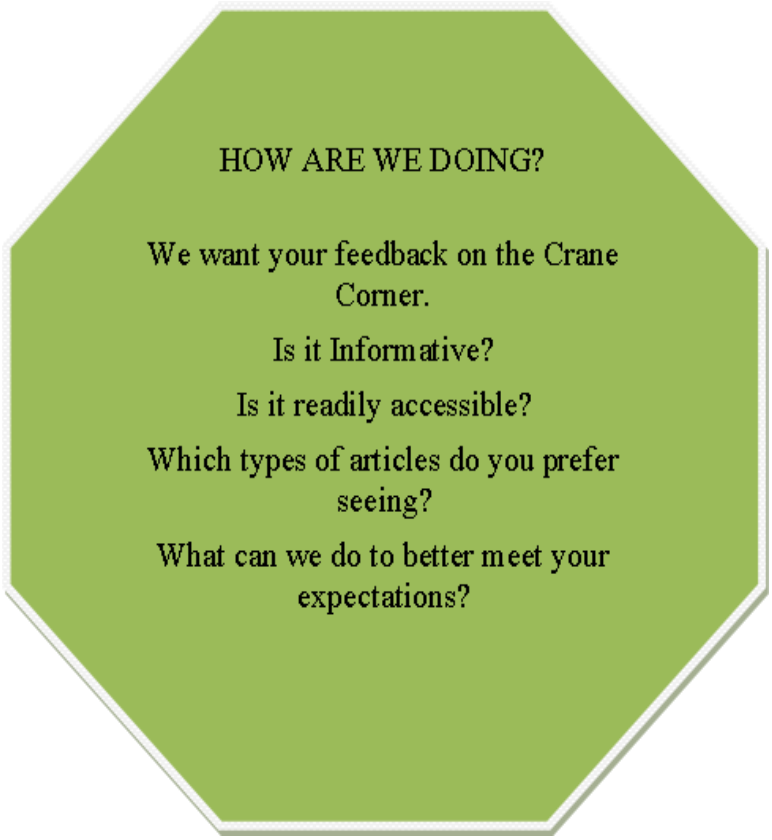
"Take Two" Briefing Video provides an overview on how to conduct effective pre-job briefings that ensure interactive involvement of the crane team in addressing responsibilities, procedures, precautions, and operational risk management associated with a planned crane operation.

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, 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 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.