THE CRANE CORNER

Dec 2021
112th Edition

Navy Crane Center Technical Bulletin

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

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Inside this issue:

A WORD FROM TOPSIDE

Tim Blanton

I was hoping to write about some of the significant accomplishments that the Navy weight handling program has achieved over the past year. I was all set to write about our combined actions resulting in FY21 being the safest year on record for overall accident severity after achieving an historic low significant accident rate of 16 percent and no OPNAV Class B mishaps in several years. I also intended to write about the new record time to procure a complex portal crane, besting the previous record by five months due to the combined efforts of Portsmouth Naval Shipyard and the Navy Crane Center. Unfortunately, weight handling has a way of reminding us that gravity never sleeps, as my predecessor would often say. Despite the outstanding achievements noted above for the Navy's Weight Handling Program in FY21, earlier this month, an assist tradesman lost part of his a finger during a rigging evolution. Yes, that resulted in an OPNAV Class B mishap but I don't really care about a number or a classification. I care about our program sending a worker home to his family and friends, permanently scarred. I feel bad that collectively, we, the weight handling professionals of the Navy, let this individual down. I must continue to stress the importance of keeping personnel from under loads or from putting themselves in pinch points. Please stress to your personnel the importance of watch team back-up and keeping all personnel from under suspended loads or in pinch points.

Declining Trend in Contractor Crane Operations – As I indicated above, I had hoped to focus on the many positives over the past year. But again, unfortunately, a negative trend has been identified that I need your help in reversing. Over the past few months, there has been a rash of serious contractor crane accidents. By now, you should have seen weight handling program brief (WHPB) 21-37 (also attached in this Crane Corner) that we issued to inform personnel of the problem.

Since October 2021, nine significant contractor crane accidents have been reported, many of them severe. The negative trend started when improper operations resulted in a dropped load with corresponding damage to a concrete pile and the crane's boom. In November, three significant accidents were reported, including an overloaded mobile crane, another mobile crane that nearly overturned, and a dropped steel beam, which resulted in significant damage to a building under construction. In December, two significant accidents were reported, a serious injury to a contractor employee (who was in a pinch point), and damage to a mobile crane due to two-blocking, which had the potential to be much worse. In early January, two additional mobile crane two -blocking accidents were reported, followed by a second injury.

The above trend in itself is overly concerning but even more so when you look at contractor crane near miss reporting, which declined over the same timeframe. None of the contractors who reported these accidents reported any near misses, which could have potentially prevented the significant accidents from occurring. Our Navy weight handling program has proven out that stopping, documenting, and taking corrective action on near miss and lower threshold accidents reduces the potential of higher level events, such as significant accidents, from occurring. Based on this negative contractor weight handling performance trend, Navy Crane Center recently issued a Safety Advisory message (P 111659Z JAN 22), which is also included in this Crane Corner. The Safety Advisory requires contracting officers (or their designated contractor crane oversight personnel to (1) brief contractors who are performing crane operations on WHPB 21-37, and (2) temporarily increase oversight of contactor crane operations to at least weekly for each contractor through 25 February 2022. Our evaluation teams will also be verifying compliance with this directive during upcoming weight handling program evaluations.

In closing, thank you all for your efforts in making FY21 one of the most successful Navy weight handling program years on record. We have a great team of weight handling program professionals. I also ask that you help me in turning around this woeful start to FY22, particularly with regard to contractor crane operations. I have challenged you many times in the past and you have always responded positively and reversed prior negative trends. We need to quickly reverse this one before an even more serious event occurs.

TIP OF THE SPEAR
FIRST QUARTER FY22 EVALUATION SUMMARY

As conditions related to the COVID-19 pandemic gradually improved in the second half of 2021 and more areas became "green", on-site evaluations resumed in CONUS. 27 weight handling programs were given full evaluations in the first quarter.

In areas that were still "red", especially at activities overseas, reviews were performed 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. 29 activity programs were reviewed remotely.

For the activities given full evaluations, one program was unsatisfactory and five were marginally satisfactory for a 96% satisfactory rate.

One non-Navy program was evaluated.

SATISFACTORY CRANES

27 of 31 cranes were satisfactory (87%)

Reasons for Unsatisfactory Cranes

Broken conductor bar mounting clamp.
Unauthorized crane alteration.
Hoist mechanical load brake not tested.
Neither bridge brake disassembled for inspection since 2009.

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.

Issues with the self-assessment were noted in 25 of the evaluations/reviews. A self-critical self-assessment, backed up by documented metrics, is a sign of a forward-looking mature weight handling program.

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. Evaluations/ reviews of 16 weight handling programs identified this condition.

As evaluation teams increased on-site evaluations, observations of unsafe crane and rigging resumed. Unsafe operations were observed at 12 activities.

Common Review Items (five or more items):

- Lack of monitor program or established program that needs improvement or does not cover all program elements – 40 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 – 25 items.

- Lack of (or low number of) lower order crane or rigging accident reports and near miss reports – 16 items

- Various unsafe crane and rigging operations observed by the evaluation team (side loading, unattended load, standing/walking beneath the 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.) – 12 items.

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

- Inspection and certification documentation errors – 10 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) – 8 items.

- ODCLs/OMCLs and simulated lifts performed incorrectly or nor performed – 7 items.

- Unrecognized/unreported accident, near miss, or unplanned occurrence (including damaged gear not investigated for cause) – 7 items.

- Damaged/deficient equipment found in walk-through or crane inspections– 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.

- Local WH instruction/SOPs non-existent or inadequate – 5 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) – 5 items.

- Deficient or worn rigging gear (including noncompliant gear) – 5 items.

- Crane test/load test issues (crane not load tested at quadrennial inspection, load test not performed after replacement of load bearing part, test instructions not clear or complete, damaged test weights, lift attachments not marked for multiple/stacked weights, test radius incorrect, inefficient test weights, incorrect test load, LMI not re-verified after bypassing, insufficient test personnel, excessive load testing, weighing equipment for test weights not traceable to NIST, not all LB/LC/OSD components tested, no restraint used for single eye-to-eye wire rope sling, operator's license was not verified by load test director) – 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. The lead rigger or supervisor did not verify 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.

Weight handling program managers, supervisors, and safety officials should review the above lessons learned with personnel performing weight handling operations and share lessons learned from other activities with personnel at your activity. In most reports, inadequate pre-job planning, inadequate pre-lift briefings, and a lack of supervisory oversight were identified as contributing factors. Your assistance is needed to provide management and supervisory oversight and to identify issues at the lowest possible level to achieve the goal of zero significant accidents. I encourage you to also challenge other weight handling professionals to continue, and all others to join, in their efforts on educating the workforce to self-report deficiencies via the monitor program. This will increase the opportunities to share lessons learned throughout individual activities as well as with the Navy's weight handling community. Please continue with your vigilant oversight of weight handling operations and stress the importance of situational awareness and utilizing thorough and interactive pre-job briefs.

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 nfshncc crane corner@navy.mil.

Navy Shore Weight Handling Program Brief

Title: DANGER OF WORKING UNDER THE LOAD OR IN THE FALL ZONE

Target Audience: All Weight Handling Personnel

In FY21, four personal injuries, including two significant OPNAV reportable injuries, occurred as a result of personnel working under suspended loads or within the fall zone. There have been 15 dropped load and one reported shifting load accidents reported in FY21, including the four that resulted in injury. The weight handling community has also submitted 22 near miss reports identifying personnel working under a load or within a fall zone. **Supervision, management, and oversight personnel must remain vigilant and reinforce to their personnel to stand clear of the fall zone.**

- Recognize the knowledge of the personnel in the operating envelope. Often personnel within an operating envelope, such as, **assist trades, maintenance personnel, or an inexperienced rigging apprentice** may not understand the hazards associated with the potential for unexpected movements of the 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, and the fall zone.
- ALL personnel should remain vigilant at all times ensuring they remain in a safe location and all actions performed (e.g., load movement, fastener removal, equipment adjustments) are well communicated to the entire team.

Provide forceful team backup.
If you see someone in a questionable location – **Say something!**

DO NOT
work under the load or stand in the fall zone!

FALL ZONE
The area in which it is reasonably foreseeable that partially or completely suspended materials could fall in the event of an accident.

- There are times when it may be necessary for personnel to reach under a static load for a short duration to install or remove coverings, make connections, position supports, etc. NAVFAC P-307, paragraph 10.8 contains specific requirements.
- It is just as important to remain vigilant of the work area below a crane during maintenance. Dropped material or unexpected lowering of components due to sudden unexpected release of potential stored energy can and have recently occurred. Ensure the area beneath any crane maintenance work has a **hazard boundary** marked off and access restricted to only authorized personnel.

➢ During upcoming evaluations, our teams will be focusing on under load violations. If multiple violations are identified, activities will receive significant items and in some cases, evaluated as less than satisfactory.

9 September 2021 | **Navy Crane Center** | WHPB-21-30

Navy Shore Weight Handling Program Brief

Title: Near Miss Lessons Learned – September 2021

Target Audience: Crane Operations, Rigging, and WHP Oversight Personnel

NCC commends activities for their efforts and continues to stress the importance of oversight and the identification and reporting of events which can be used as lessons learned to improve weight handling performance. Well done to the following activities that identified and reported these near misses, where intervention prevented potential accidents:

TRIDENT REFIT FACILITY BANGOR – The rigger-in-charge (RIC) called ALL STOP when an under instruction (UI) signalperson continued providing signals after the qualified signalperson indicated that they had no visibility of the load or signals being provided, some of which had potential to result in personnel injury. Events such as these have recently resulted in damage to the load or crane. WHPB 21- 08, Increase in Events during Under Instruction Operations, issued March 18, 2021, provides additional information on maintaining direct observation of trainees (UI personnel).

NAVFAC MIDLANT (PWD HR AOR) – A manager stopped the crane team from lifting a dredging machine with hoses attached which would create an interference with a guardrail in the vicinity of the operating envelope and load travel zone. Before making a lift, the load should be inspected for unsecured items, and other accessories that could become detached or create interference during the lift. Do not create unnecessary risk by leaving an easily removable attachment installed.

SOUTHWEST RMC – A supervisor conducting oversight stopped operation prior to a lift and had multiple trip hazards in the travel path removed from the shop floor. Situations such as these have recently resulted in personnel falling or tripping inside shops and on piers due to excessive clutter or obstructions placed within the operating enveloped. See also, WHPB 21-28, Crane Operating Envelope Control.

Both FRC SOUTHWEST and NAVFAC FAR EAST (PWD Yokosuka) recently reported issues with **personnel under the load.** The need for understanding the hazard of working under the load or within a fall zone and the importance of providing forceful team backup for all persons within and around the operating envelope is vital to the safety of operations. WHPB 21-30, DANGER of Working Under the Load, issued on September 9, 2021 provides additional briefing material on this topic.

23 September 2021 | **Navy Crane Center** | WHPB 21-31

Navy Shore Weight Handling Program Brief

Title: Near Miss Lessons Learned – October 2021

Target Audience: Weight Handling Program and Crane Oversight Personnel

During recent weeks, multiple near misses have been submitted 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 General Foreman stopped maintenance operations, when hazardous energy controls were not properly maintained by all personnel on the crane. There were five personnel boarding the crane; however, only one hazardous energy control lock was installed on the crane and a group lock box was not utilized. It is the responsibility of each individual to maintain control of hazardous energy during servicing and maintenance on equipment in accordance with OPNAVINST 5100.23 and your activity's local instruction.

PHNSY, **NAVFAC EURAFCENT (PWD ROTA)**, and **NNSY** each stopped operations prior to lifting and reported issues with all fasteners not being removed from the load following an all clear given by assist personnel. It is important to remember while trade mechanics, electricians, and ship's force personnel may be required to assist in lifting operations, we as the Navy's weight handling professionals, are responsible to ensure the safety of all lifting operations. Kudos to the riggers and rigger-in-charge who through a thorough inspection of the load identified these deficiencies prior to lifting.

Contractor Crane Near Miss Lessons Learned

NAVFAC MIDLANT – Government personnel performing a P-1 check-in inspection of a contractor's mobile crane identified the hoist wire rope routed over the sheave pin and not seated in the top sheave of the boom tip. Additionally, the wire rope retaining pin for the sheave assembly was missing.

NAVFAC FAR EAST (PWD Yokosuka) – Government personnel conducting oversight of contractor operations identified that the operator of a backhoe did not switch the backhoe controls from "excavation mode to crane mode", in preparation for a lift. This error would have prevented the lift safety devices from functioning.

27 October 2021 | **Navy Crane Center** | *WHPB 21-32*

Navy Shore Weight Handling Program Brief

Title: Understanding Environmental Impacts on Equipment

Target Audience: Weight Handling Program and Crane Inspection Personnel

Navy Crane Center has recently received multiple reports of crane component failures attributable to environmental degradation that was not identified due to inadequate inspection. In most instances these failures could have been prevented by routine inspections.

UNDERSTANDING EQUIPMENT ENVIRONMENT IS IMPORTANT

Operating environment can have a detrimental effect on equipment and shorten the lifespan. These environments include:

• Marine • Outdoor (UV degradation) • Over or near chemical tanks • Extreme hot or cold

Thorough inspections of equipment are conducted to maintain equipment condition as outlined in NAVFAC P-307. Additional or more frequent inspections based upon activity experience or original equipment manufacturer recommendations may be required. Operating environment should be considered when determining the need for additional or more frequent inspections.

Inspections and component replacement may need to be increased to account for these effects.

Recent Issues:

FAILURE: Chain was submerged in a marine environment and chain-link failed during use.

IMPROVEMENT: Conduct more frequent inspection of equipment in marine environment.

FAILURE: Chain was used over a chemical dip tank and chain-link failed during use.

IMPROVEMENT: Conduct more frequent inspection of equipment in corrosive environment.

FAILURE: Tread of a bridge drive wheel on an underrunning crane fell off the crane in an outdoor environment due to UV degradation. (not pictured)

IMPROVEMENT: Conduct more frequent inspection of equipment in outdoor environment.

FAILURE: While traveling a bridge crane, a piece of the polyurethane drive wheel feel fell off. Crane was located near paint operations. (not pictured)

IMPROVEMENT: Conduct more frequent inspection of equipment in corrosive environment.

16 November 2021 | **Navy Crane Center** | *WHPB 21-33*

Navy Shore Weight Handling Program Brief

Title: Near Miss Lessons Learned – November 2021

Target Audience: Crane Operations, Rigging, and WHP Oversight Personnel

During recent weeks, multiple near misses have been submitted which help prevent accidents. NCC commends activities for their efforts and continues to stress the importance of oversight and the identification and reporting of events which can be used as lessons learned to improve weight handling performance. Well done to the following activities that identified and reported these near misses, where intervention prevented potential accidents:

- **Puget Sound Naval Shipyard** and **Pearl Harbor Naval Shipyard** – In both events an ALL STOP was called by the rigger-in-charge (RIC), averting both collision and injury, when an operator-in-training (OIT) engaged the wrong function. OITs should operate only under the direct observation and continuous supervision of a licensed operator mentor (LOM). It is critically important that the LOM ensure that the OIT is familiar with the crane's controls.
- **Southwest Regional Maintenance Center** – An ALL STOP was called by the Weight Handling Program Manager prior to lifting when he noted the below-the-hook lifting assembly (strong back) was improperly sized for the load. Prior to lifting, a full inspection of the rigging assembly and load must be conducted by the RIC. Where procedures are unclear or unavailable, the activity engineering organization shall be contacted for evaluation and guidance.
- **NAVFAC Mid Atlantic (Hampton Roads)** – A crane operator stopped operations when a crane team member was positioned in a pinch point. The primary responsibility of the operator is the safe operation of the crane. Operators must follow the direction of the RIC or signal person; however, they must refuse to operate the crane when there are concerns about the safety of the operation.

Contractor Crane Near Miss Lessons Learned

- **NAVFAC Mid Atlantic (Hampton Roads)** – Contractor oversight personnel stopped the lifting of a load when the contractor riggers were installing non-structural black iron pipes to support the load for lifting. There was no approved lifting plan and the type, specifications, and construction of the pipes were unknown.

23 November 2021 | **Navy Crane Center** | *WHPB 21-34*

Navy Shore Weight Handling Program Brief

Title: Building Crane Operating Envelope Intrusions

Target Audience: Weight Handling Program and Crane Inspection Personnel

In the past six months, Navy Crane Center has received several reports of crane collisions in buildings where facility maintenance had taken place. The collisions were determined to be the result of contractors introducing intrusions into the operating envelope of the crane. Navy activities should verify that there is a process in place to alert weight handling management of any facility maintenance that could result in crane clearance intrusions so that facility and weight handling managers can ensure adequate controls are in place to prevent potential crane collisions.

Recent Accidents:

- A monorail crane control box made contact with a newly installed structure.
- A bridge crane collector shoe made contact with bailing wire left by contractors working in the area.
- A bridge crane handrail collided with an overhead fire main pipe protruding into the crane operating envelope.
- A crane hot rail collector shoe wire caught on a bolt.
- A bridge rail contacted newly installed electrical conduit.

Suggested Actions:

- During facility maintenance, management should consider potential options, such as full isolation of the crane until facility work is complete or installation of temporary rail stops (with a locally approved crane alteration request, per NAVFAC P-307, paragraph 6.3) to isolate the crane from the area of potential crane clearance intrusions. Note: It would be prudent to also consider the use of local equipment tagging procedures (NAVFAC P-307 paragraph 2.8.2) to identify conditions that may adversely affect safe operation.
- Upon completion of facility work and prior to releasing any crane operating envelope controls, proper crane clearance should be verified throughout the full distance of the bridge runway and trolley rails.
  - During clearance checks, check wheel float, and all trolley positions and configurations.
  - Check for items that have the potential to loosen and become future crane clearance intrusions.

7 December 2021 | **Navy Crane Center** | *WHPB 21-35*

Navy Shore Weight Handling Program Brief

Title: Near Miss Lessons Learned (Crane Maintenance) – December 2021

Target Audience: Crane Maintenance, Inspection, and Engineering Personnel

Increased reports have been received recently of near misses occurring during maintenance evolutions or inspections. Each report captures important lessons learned that, if applied properly, will help mitigate potential crane accidents and improve crane reliability. NCC commends these activities for their efforts and continues to stress the importance of oversight and the identification and reporting of maintenance related events. Well done to the following activities that identified and reported these near misses, where intervention prevented potential accidents:

- **PHNSY & IMF**– Two events involved the inclusion and use of cautionary statements within the work document.
  - –While securing a portal crane boom for maintenance, ALL STOP was called when a mechanic identified the flexible links were taking the load unevenly creating the potential for overload. This uneven loading condition had been reported previously; however, amplifying instructions were not included in the work document.
  - –While removing the main hook block and re-reeving a mobile crane, the wire rope loosened on the drum. Contrary to the cautionary statement within the work document no personnel were stationed at the drum to monitor spooling. The on-site inspector recognized the miss-spooling and stopped operations.

  Detailed work documents and rigging procedures specific to the work to be done shall be reviewed prior to the start of work. Cautionary statements and mitigating actions should be included in these documents to ensure risks are understood and adequate control is maintained throughout the maintenance evolution.

- **NNSY**– During an annual inspection of a building crane, a crane inspector identified that a fire main pipe was installed by a contractor within the crane operating envelope. Weight handling management must engage to protect the crane operating envelope from intrusions. In recent months several crane accidents have been reported due to crane operating envelope intrusions. WHPB 21-35, Building Crane Operating Envelope Intrusions is being issued to discuss suggested actions in more detail.

7 December 2021 | **Navy Crane Center** | *WHPB 21-36*

Navy Shore Weight Handling Program Brief

Title: Contractor Weight Handling Accidents and Near Misses

Target Audience: Contracting Officer Representatives and Oversight Personnel

Recent increases in significant contractor crane accidents have raised the 2021 contractor crane accident severity rate up to 38 percent (19:50), **as significant accidents have increased in both quantity and severity.** Also of concern, **near miss and minor damage accidents have recently declined below the reporting level of significant accidents.** **Contracting officer representatives and personnel who oversee contractor weight handling operations** play a vital role in ensuring the safe operation of contractor weight handling equipment. **Robust oversight and follow-up to ensure contractors implement agreed upon corrective actions** are essential in reducing the number of significant accidents during contractor weight handling operations.

Decline in Near Miss Reports *plus* Decline in Minor Damage Reports *equals* Increase in Potential of Significant Accidents

Each report provides an opportunity to share lessons learned, and by focusing on minor events, it is possible to reduce the probability of a serious accident. **Oversight personnel should encourage contractors to recognize and report near misses and minor accidents.**

Contracting Officer or Designated Representative Recommended Actions:

- Discuss with contractor management the expectations of reporting lower level events and the healthy benefits this reporting has on their weight handling program.
- Encourage contractor operators and riggers to recognize and report ALL near misses and accidents with *emphasis on lesser severity* (lower threshold and minor damage) events.
- Follow-up with contractor management (when needed) to ensure agreed upon corrective actions are implemented and to address any tangible deficiencies that if not corrected could result in an accident, such as poor load control, crane movements without direction, inattentive operator or rigging team, lack of sling protection, lift director not in overall control of the evolution.
- Consider recent findings and adjust the degree of oversight based upon the level of risk to personnel and property. ***NAVFAC P-307, paragraph 11.2.a provides the minimum requirements for overseeing contractor weight handling operations.***

15 December 2021 | **Navy Crane Center** | *WHPB 21-37*

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.

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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.