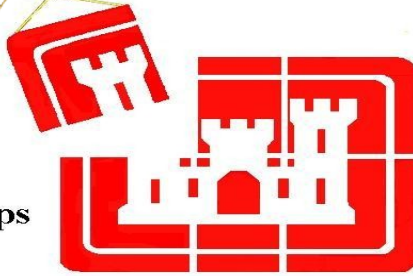




US Army Corps
of Engineers



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INSIDE THIS EDITION

OPORD 2011-82	1
WHAT DOES THE EM SAY	2
OSHA CRANE VIOLATIONS	3
WG UPDATE	4
ACCIDENT STATS	5
INCIDENT VS. ACCIDENT	5

OPORD 2011-82 - Process

On the heels of the Crane and Hoist survey request disseminated to the field in June/July timeframe, members of the Working Group gathered in Atlanta, GA (South Atlantic Division) in September to: compile, review, assess and provide summary information to CESO on "state" of our Construction and Operations Division Crane and Hoist program.

As we evaluated the data, some key issues jumped out to the WG members, those being:

✓ We identified over 200 Operators who did not meet the requirements of our EM. Employees either did not meet the "physical" requirements OR they did not meet the "training/certification" requirements.

Example - We had Operators note they had never received a physical, some surveys noted this was not a requirement.

✓ We are not conducting inspection requirements as identified in the EM [and most recently identified in the October 2011 edition of Counterweight].

✓ We are missing essential equipment information, data that would allow us to look at type/capacity of crane/hoist we were operating and match up to the qualifications identified for operators of this equipment. We noted that Load Testing data was also not in compliance with the EM.

Example - We had a project identify that the last time their crane had been load tested, was in 1905.

With these elements identified, the WG felt that it was important to review the data, and to do so in a manner that reached the widest number of personnel. So...to that end, nine (9) webinars were held in October 2011.

These webinars reached over 500 Corps employees. From Japan to Jacksonville, our Operations, Construction, and Safety folks gathered to discuss the findings, challenge them if they felt that their data had not accurately been presented, and to better understand WHAT the requirements in the EM are.

The outcomes from the webinars identified:

- ✓ WE (Construction, Operations and Safety) don't know what our EM requirements are with respects to cranes/hoists.
- ✓ WE have Operators who are not in compliance with our EM.
- ✓ WE have equipment that is non-compliant with respects to; inspection frequency and documentation, testing, and again, a lack of understanding of what the EM says.

As a result of these findings, HQUSACE disseminated OPORD 2011-82 to gather additional Crane/Hoist data from the field.



Hope you all had a
MERRY
CHRISTMAS
AND A
HAPPY
NEW YEAR!

OPORD 2011-82

Purpose. To provide the requirements and instructions for the Crane/Hoist/Rigging Action Plan needed to bring USACE crane program implementation into compliance. Associated template and spreadsheets were provided.

Mission. NLT 06 JAN 12, USACE implements the Crane/Hoist/Rigging Action Plan across all commands in order to achieve a safe and legally compliant USACE Crane/Hoist/Rigging Program.

Commander's Intent. Through the use of the USACE Crane/Hoist/Rigging Action Plan surveys, MSCs, District Commands, and managers evaluate their organization's findings and take necessary corrective actions to improve performance, safety and proficiency. The steps taken ensure compliance with EM 385-1-1 and OSHA regulatory requirements.

Major milestones associated with the OPORD were identified. Those milestones are captured herein with a brief note to ensure clear understanding of the requirements.

Milestones.

- ✓ **Immediate** - Continued immediate reporting of any crane, rigging, or hoist/hoisting equipment related incident or accident.
- ✓ **NLT 23 Dec 11** - Submit Crane/Hoist/Rigging Action Plan, PHASE I. Consolidate and validate the data submitted. Plan also will include:
 - 1) Communication Plan detailing the process and responsibilities for reporting, reviewing, validating and submitting this information.
 - 2) USACE Crane and Hoist Operators Qualification status for all operators of Cranes/Hoisting equipment (USACE owned)
- ✓ **NLT 6 Jan 12** - Submit a written action plan (PHASE II) that will address the remainder of program deficiencies to include:
 - 1) Equipment Inventory
 - 2) Training Plan
 - 3) Inspection Plan
- ✓ **NLT 28 Feb 12** - Enter equipment inventory and inspection data into Facility Equipment Maintenance System (FEM) in order to track data efficiently across USACE.

NOTE - If your MSC did not meet these suspense dates, a risk acceptance memorandum was prepared, signed by the Commander, and forwarded to CESO.
Jerry Balcom

COUNTERWEIGHT -

WHAT DOES THE EM SAY about...MULTIPLE LIFT RIGGING? .

USACE incurred 2 contractor accidents this past year related to multiple lift rigging (MLR)...sometimes called "Christmas tree rigging". In both cases, neither the USACE personnel nor the associated contractor seemed to know or understand the process, the requirements or the submittals required. **Refer to Section 15.C, EM 385-1-1, 2008 and Change #5**

Multiple lift rigging refers to a rigging assembly (manufactured by wire rope rigging suppliers) that facilitates the attachment of up to five independent loads to the hoist rigging of a crane.

A multiple lift may be performed only if the following criteria are met:

- It is used for the erection/placement of structural steel (beams/similar structural members) ONLY.
- If a multiple-lift is performed, it is considered a CRITICAL LIFT.
- A multiple lift rigging assembly is used.
- A maximum of five members are hoisted per lift.
- All employees engaged in the multiple lift have been trained per 15.C.03.d (and documentation is provided).
- No crane is permitted to be used for a multiple lift where such use is contrary to the manufacturer's specifications and limitations.
- Multiple-lift rigging assembly capacity, for the total assembly and for each individual attachment point, must be certified by the manufacturer or a qualified rigger, be based on the manufacturer's specifications, and have a 5-to-1 safety factor for all components.
- The total load must not exceed the rated capacity of the hoisting equipment specified in the hoisting equipment load charts and the rigging capacity specified in the rigging rating chart.
- The multiple-lift rigging assembly must be rigged with members attached at their center of gravity and maintained reasonably level, rigged from top down, and rigged at least 7 feet apart.
- The members on the multiple-lift rigging assembly must be set in position from the bottom up.
- Controlled load lowering must be used whenever the load is over the connectors.

** Note: This operation is one of the few where workers may be positioned under the load for disconnecting of members.



November 28, 2011 – In November, the Occupational Safety & Health Administration released a report that included its most frequently cited crane regulations. Among these are annual inspections, signal and rigger qualifications (and documentation), ground conditions, power line safety, swing radius protection, hook compliance, and inspections.

Are you meeting the regulations? Read the following sections to find out more details. **The EM reference associated with these findings are listed below the citation.**

1926.1412(f)(1) – Annual Inspections – At least every 12 months the equipment must be inspected by a qualified person in accordance with paragraph (d) of this section (each shift) except that the corrective action set forth in paragraphs (f)(4), (f)(5), and (f)(6) of this section must apply in place of the corrective action required by paragraphs (d)(2) and (d)(3) of this section.

SEE EM 385-1-1, Section 16.D

1926.1428(a)(1) – Signal Person Qualifications - Option (1)–Third party qualified evaluator. The signal person has documentation from a third party qualified evaluator (see Qualified Evaluator (third party), § 1926.1401 for definition) showing that the signal person meets the Qualification Requirements (see paragraph (c) of this section). NOTE: you can also use an in-house evaluator...

SEE EM 385-1-1, Section 16.B.06

1926.1402(b) – Ground Conditions – The equipment must not be assembled or used unless ground conditions are firm, drained, and graded to a sufficient extent so that, in conjunction (if necessary) with the use of supporting materials, the equipment manufacturer's specifications for adequate support and degree of level of the equipment are met. The requirement for the ground to be drained does not apply to marshes/wetlands.

SEE EM 385-1-1, Section 16.D.08 / 16.H.02

1926.1424(a)(2)(ii) – Swing Radius Protection – Erect and maintain control lines, warning lines, railings or similar barriers to mark the boundaries of the hazard areas. Exception: When the employer can demonstrate that it is neither feasible to erect such barriers on the ground nor on the equipment, the hazard areas must be clearly marked by a combination of warning signs (such as "Danger–Swing/Crush Zone") and high visibility markings on the equipment that identify the hazard areas. In addition, the employer must train each employee to understand what these markings signify.

SEE EM 385-1-1, Section 16.G.04 / 16.G.13 / 16.S.01

1926.1408(a)(2) – Power Line Safety – Determine if any part of the equipment, load line or load (including rigging and lifting accessories), if operated up to the equipment's maximum working radius in the work zone, could get closer than 20 feet to a power line. If so, the employer must meet the requirements in Option (1), Option (2), or Option (3) of this section.

SEE EM 385-1-1, Section 16.G.11

1926.1425(c)(3) – Qualified Rigger – The materials must be rigged by a qualified rigger.

SEE EM 385-1-1, Section 15.B.01 (page Q-61 of the definitions adds)

1926.1425(c)(2) – Hooks with self-closing latches or their equivalent must be used. Exception: "J" hooks are permitted to be used for setting wooden trusses.

SEE EM 385-1-1, Section 15.A.05

So....how are we doing out there? When you look at your project / operations, do you have any of these issue?

[Most Frequently cited Crane Regulations taken from Lift and Access.com website]



LESSONS LEARNED

OTHER THAN...CRANES

Thanks to Tim Grube, NWS-SO for this "Own the Edge" article on Powered Industrial Trucks (PIT) and Telehandlers.

Did you know what EM 385-1-1 says with respects to PIT's and Telehandlers?

In July 2011 the Corps of Engineers published a complete re-write of section 16, Cranes and Hoisting Equipment. If contract date of solicitation for a contract is after 5 July 2011 then the revised section 16 (Change 6) applies. If the date of solicitation is prior to 5 July 2011 then the requirements listed in EM 385-1-1 at the date of publication (15 Sep 2008) apply.

18.G.03 states... No modifications or additions that affect the capacity or safe operation of machinery or equipment shall be made without the manufacturer's written approval.

- a. If modifications are made the capacity, operation, and maintenance instruction plates, tags, or decals shall be changed accordingly.
- b. The original safety factor shall never be reduced.

18.G.29 Powered Industrial Trucks (PITs)/Forklifts. All PITs shall be designed IAW ANSI/ASME B56.1.

- a. All PITs, lift trucks, stackers shall have the rated capacity clearly posted.
- b. Only trained and authorized operators shall operate a PIT.
 - (1) Training (classroom & practical) will be IAW 29 CFR 1910.178.
 - (2) The employer must certify that the operator has been trained.
- c. When a PIT is left unattended, load shall be lowered, power shall be shut off, and brakes shall be set. Wheels shall be blocked if on an incline.
- d. Overhead protection is required.
- e. Dock board or bridge plates shall be properly secured.
- f. PITs shall be operated at a safe speed.
- g. On all grades the load shall be tilted back and only as

far as necessary.

h. When operated on grades >10%, PITs shall be driven with the load upgrade.

18.G.07 When manufacturer's instructions are more stringent than the requirements of this manual, the manufacturer's instructions or recommendations shall apply.

EM 385-1-1, Change #6 (5 Jul 2011)

16.V POWERED INDUSTRIAL TRUCKS (PIT'S) / TELEHANDLERS

This equipment shall not be used to hoist personnel unless allowed by the manufacturer with an approved hoisting attachment.

16.V.01. This equipment may only be used to transport or hoist loads if allowed by the equipment manufacturer. If these procedures are unavailable, you are prohibited from performing this function.

16.V.02. Using PIT's to transport or hoist loads require different operator skills than the standard PIT operations. When PIT's are to transport or hoist loads using hooks, eyes, slings, chains, or other rigging the following requirements shall apply:

- (a) Operating procedures in accordance with the equipment manufacturer's operating manual ;
- (b) Written proof of qualifications of equipment operators **and riggers**;
- (c) Proper use and on site availability of manufacturer's load capacities or charts as related to approved attachments;
- (d) Proper use of rigging, including positive latching devices to secure the load and rigging;
- (e) Inspection of rigging;
- (f) Use of tag lines to control the load;
- (g) Adequate communications, and
- (h) An AHA specific to the transporting or hoisting operation must be developed and provided to GDA.



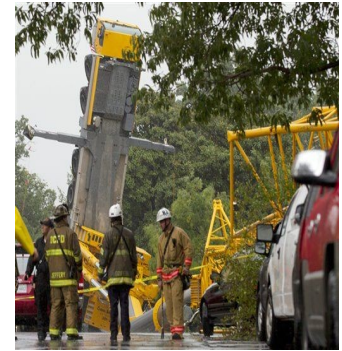
WHERE ARE WE?

The HHWG was busy in FY11 - The following is a brief snapshot of the activities that we've been involved in.

- √ Traveled to and performed program assessment and training at:
 - √ LRN - Wolf Creek Project
 - √ SPK - UDC Facility
 - √ NWS - Lake Washington Ship Canal
- √ Served on Boards of Investigation and numerous accident investigation teams
- √ Conducted 9 - Crane Survey Webinars
- √ Conducted 2 - Operator Qualification Webinars
- √ Produced 4 Counterweight Publications
- √ Audited 3 Prospect #32 Crane Safety Classes
- √ Review EM 385-1-1 requirements—on-going for constant improvement

- √ Reworked the #032 Prospect Crane Safety Class Curriculum
- √ Reviewed the Data Call 2011 submitted data to identify program weaknesses, deficiencies, strengths.
- √ Prepared OPOD 2011 for distribution
- √ Developed rigger/signal person training curriculum and packages for USACE use
- √ Attended 8 conferences, meetings, briefs to discuss crane safety program requirements and USACE accident experience and action plan
- √ Attended 4 ASME B30, Crane Safety, Committee Meetings
- √ Out briefed USACE MG Temple, CSM Buxbaum and Chiefs of E&C and Operations numerous times on findings, recommendations
- √ Developed, prepared and maintain crane, hoist, rigging related accident database
- √ Answered innumerable crane, hoist, rigging questions!

	FY10 (1 st Qtr)	FY11 (1 st Qtr)	FY12 (1 st Qtr)
BOIs	1	5	1
-Fatal	0	1	0
-PPD*	1 (fingers)	1 (fingers)	0
-Prop Damage	0	3 (\$3.4M)	1 (\$250K)
LWD** accidents	5	9	0
Property Damage	4 - \$178K	4 - \$395K	3 - \$10K
Minor Incidents***	n/a	n/a	7



*PPD = permanent partial disability (normally loss of a body part/function)

**LWD = lost work day (recordable)

***Minor Incidents = NOT normally reported. Data Call 2011 and OPOrd required these to be reported thru FY12 for trending purposes and to catch issues early.

We prepared this slide to provide an indication of where we were (FY10 - HHWG first formed, FY11 - When immediate accident notification was implemented, USACE-wide crane / hoist survey was implemented, and FY-12 - OPOrd 2011-82 disseminated to the field, immediate notification emphasis continues). Sooo...the question that begs an answer is...are we improving our overall compliance?

The OPOrd will certainly provide the WG with much needed information to continue the process towards compliance. We appreciate the immediate notification of incidents and accidents. We seek to be more aggressive in staving off major accidents through learning from the near misses.

What is an INCIDENT? What is an ACCIDENT?

According to our accident reporting regulations (primarily ER 385-1-99), there are Classes of accidents that are mandated as recordable and reportable. For instance, an accident that results in property damage of \$2,000 or more is REPORTABLE—meaning it MUST be reported in EngLink. However, there are minor incidents that occur as part of our/contractor work and these are not normally reported. For instance, if property damage is less than \$2,000, the “incident” is not normally reported. If I cut my finger and use a bandage from the first aid kit on site, this is not normally reported. If I drop a head-ache ball but there is no damage, this is not normally reported.

However, the problem with this reporting system is we only see the ACCIDENTS that result in significant property damage or that send an employee to the doctor. But what about the things that are happening that aren't that big? How do we track those? Crane/hoist/rigging Data Call 2011 and OPOrd 2011-82 requires that any crane, hoist or rigging-related minor “incidents” or “near misses” be reported through FY12 for trending purposes. The reporting of these minor occurrences allows us to identify problems in our program before they lead to big ACCIDENTS. This incident reporting (versus accident reporting) is called a LEADING vs. lagging indicator! We can look at the incident and investigate the equipment, operator, rigger, signal person, programmatic, environmental, contractual or other issues that may have contributed and/or caused the incident and then correct them.

Near miss reporting focuses on correcting events that can bring a large return on our investment in time and resources.. Improvement in these areas can lead to big impact because we are FIXING the problem before it has the opportunity to lead to a large issue.. We can then use these lessons-learned project-, District—or even USACE -wide to insure it doesn't happen again somewhere else. Our goal is to make our work as safe as possible while still accomplishing the mission.

Interesting Crane Links : <http://www.bing.com/images/search?q=crane+accidents&qpv=crane+accidents&FORM=IGRE>

UPCOMING WEBINARS: The HHWG will hold monthly training/educational webinars. There will be 2 identical webinars held in January that repeat the operator qualification requirements. The 2 held in November 2011 touched over 500 workers but maxed out our phone lines!

Suggestions -

We continue to seek ways to improve the HHWG communications with the field. To that end, if you have a suggestion for an upcoming “Counterweight”, please drop us a note. If you know of someone we can interview for the next edition, contact us.

I recognize that in some cases, you might not wish to identify yourself...that's okay. You can fax your suggestion to 404-562-9238.

Please give us some basic information, such as;

- √ Please clarify regulation 16.B.02,
- √ Please provide information on lessons learned
- √ You would like to see interviews or articles on different Operations Division missions.
- √ What does “if practical” mean?
- √ How do I find Change #5



COUNTERWEIGHT

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