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THINK YOU'VE PROTECTED YOUR COMPANY FROM A WRONGFUL DEATH SUIT... THINK AGAIN!

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THE PROBLEM:

Think you've done everything a prudent person should do to make sure your workers are safe? Think you've done everything necessary to protect yourself and your company against a wrongful death suit? Well, I've got news for you, it's not good and here's why.

In late 2017, I was one of four members of a committee that was charged with creating a test for EOT crane inspectors to attain Inspector Certification by the CCAA (Crane Certification Association of America). I had arranged our first meeting to be a two-hour teleconference between the four members of the committee.

The committee were all CCAA members, and the team was comprised of;

- one PE with 40+ years crane experience,
- one 30+ year former crane manufacturing company owner (me),
- one inspector that started out with P&H and spent the last 20 years as an owner of his own EOT crane inspection company
- a former EOT crane service manager of 15+ years

All in all, over 100 years of EOT crane experience.

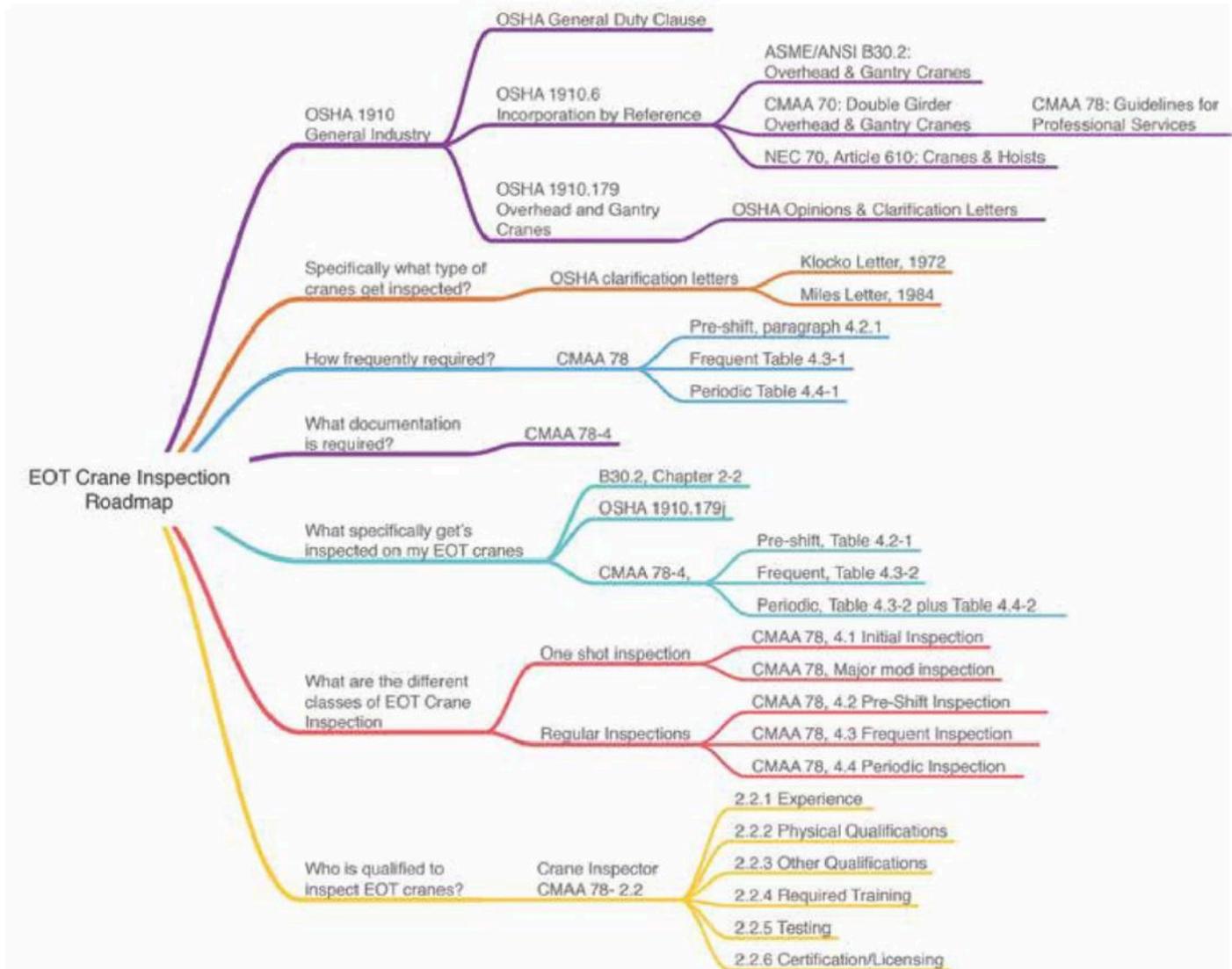
Part of putting a test together is getting agreement, not only on the test questions but also the answers to those questions. After an hour of discussion, we could only agree on answers and wording to one of the first five test questions. At that point, we stopped and took a step back. We decided it made sense to get agreement on precisely what spec(s) we're going to use as the our "bible," before we argue the specific issues.

The specs we tossed about included;

- OSHA 1910.179, Overhead and Gantry Cranes
- ASME/ANSI B30.2, Overhead and Gantry Cranes, Top Running Bridge, Single or Multiple Girder, Top Running Hoist

- ASME/ANSI B30.10, Hooks
- ASME/ANSI B30.11, Monorail and Underhung Cranes
- ASME/ANSI B30.16, Overhead Hoists (Underhung)
- ASME/ANSI B30.17, Overhead and Gantry Cranes, Top Running/ Single Girder Underhung Hoists
- ASME/ANSI B30.20, Below the Hook Lifting Devices
- ASME/ANSI BTH, Design of Below the Hook Devices
- CMAA Spec 70, Specification for Top Running & Gantry Type Multiple Girder Electric Overhead Traveling Cranes
- CMAA Spec 74, Specification for Top Running & Under Running Single Girder Electric Traveling Cranes Utilizing Under Running Trolley Hoist
- NEC 70, Article 610, Cranes & Hoists
- AIST TR-06, Specification for Electrical Overhead Traveling Cranes for Steel Mills
- AIST-TR-13, Guide for the Design and Construction of Mill Buildings (with cranes)
- The OSHA Clarifications: periodic letters of clarification issued by OSHA in response to questions submitted to them
- The ASME B30 Clarifications: periodic letters of interpretation issued by the committee in response to questions sent to them
- The CMAA Clarifications: periodic letters of clarification published by CMAA in response to questions submitted to them





We then spent the remainder of our the meeting trying to agree on what specifications we should be using. We adjourned the meeting without agreement. Bottom line, four people with over 100 years of experience couldn't agree on the ultimate authority let alone the pertinent questions and answers to determine certification.

When four experts, with over 100 years of experience, can't agree on who's rules rule, what is a crane owner or maintenance manager supposed to do? Today, it's critical to understand that the ultimate arbiter is not OSHA, the final authority is a multi-million-dollar judgment resulting from an industrial accident. If we can't define the rules, the winner will be the party with the most expensive lawyer.

A 1939 quote best describes the US safety codes from, no less than, Winston Churchill. While talking about Russia in the early days of WWII, Churchill

said, "I cannot forecast to you the action of Russia. It's a riddle wrapped in a mystery, inside an enigma."

Much the same can be said about the Byzantine US safety regs pertaining to overhead crane inspection requirements, and here's why.

OSHA'S 50 YEAR "STRIKE OUT" AT ATTAINING CLARITY:

STRIKE ONE: OSHA 1910.179(j)

While crane owners ask for "OSHA safety inspections" and inspection companies advertise providing "OSHA EOT crane inspections," OSHA says precious little about the specific requirements of an Overhead Crane inspection. Section 1910.179(j) Inspections, consists of just 667 words about EOT crane inspection requirements.

STRIKE 2: OSHA 1910.6: INCORPORATION BY REFERENCE

Most crane owners think 1910.179 is the full extent of crane regulation in OSHA. In fact, 1910.179 is just the tip of the iceberg. To fully understand the requirements of OSHA, you need to start with 1910.6, a little-known section called "Incorporation by Reference."

OSHA 1910.6 lists 197 other specifications and regulations and gives them the full force of law. These specs include documents like the NEC (National Electric Code), AWS (American Welding Society codes) and 195 others.

To give you an idea of the magnitude of 1910.6, if each of these "incorporated by reference" docs are 100 pages in length (a ballpark guesstimate), that's another 19,700 pages to learn, and if they cost \$100 each (ballpark price), it's going to cost you \$19,700 to find out what they say! This represents an unreasonable burden in both time and money for the average EOT crane owner.

After combing through this list of the 197 referenced documents, documents that are, because of "incorporation by reference" considered to be part

of OSHA, I have determined the following four specs to be of primary concern to people involved with EOT cranes.

1. OSHA 1910.179: Overhead and Gantry Cranes (the master document)
2. ASME/ANSI B30.2: Overhead and Gantry Cranes, Top Running Bridge, Single or Multiple Girder, Top Running Hoist (incorporated by reference)
3. CMAA 70: Specification for Top Running & Gantry Type Multiple Girder Electric Overhead Traveling Cranes (incorporated by reference)
4. NEC 70, Article 610: Cranes & Hoists (incorporated by reference)

Unfortunately, after combing these four documents, I failed to strike gold or anything even close to gold for specifics on the requirements for EOT crane inspections. Here are the sad results;

1. OSHA 1910.179: 667 words about crane inspections
2. ASME/ANSI B30.2: 1,407 total words about crane inspections (members of B30.2 have repeatedly told

Where Do I Get B30.2 1943/1967 & EOC161

Do you have the 1943 Version of B30.2? Does anybody???

A little-known issue regarding the requirements of OSHA is the Incorporation By Reference as stated in 1910.6. To make things even harder, 1910.6 calls explicitly out the B30.2 Overhead and Gantry Cranes 1943 and 1967 version as well as the EOCI (Electric Overhead Crane Institute, a precursor to the CMAA) 1961 version. Good luck in finding anyone of those three documents!

The good news is that a few years ago, in an OSHA letter of clarification, the OSHA representative stated that modern versions of listed specifications could be used as long as they are equal or more stringent than the original specifications.

At this time, the current versions are as follows:

- ASME/ANSI B30.2: Overhead & Gantry Cranes, 2016 (in place of 1943 and 1967)
- CMAA 70: Overhead xxx, 2015 (in place of EOCI 61)

I think it's safe to say that both contemporary documents meet the "equal to or greater" clause.

ASME/ANSI B30 docs are available at:

<https://webstore.ansi.org/>

B30.2 Overhead and Gantry Cranes, \$69.00

Hoist and Crane package: \$264.00

B30.2: Overhead & Gantry Cranes

B30.10: Hooks

B30.16: Overhead Hoists (Underhung)

Cranes Package: \$196.00

B30.2: Overhead & Gantry Cranes, 2016

B30.11: Monorail and Underhung Cranes

B30.17: Overhead and Gantry Cranes, Top Running/Single Girder Underhung Hoists

Overhead Crane and Gantry Package: \$136.00

B30.2: Overhead & Gantry Cranes, 2016

B30.16: Overhead Hoists (Underhung)

CMAA docs are available at:

<http://www.mhi.org/publications?q=&sort=&page=1&fq=c at-bookstore:Standards>

CMAA 70: Specification for Top Running & Gantry Type Multiple Girder Electric Overhead Traveling Cranes \$105.00

CMAA 74: Specification for Top Running & Under Running Single Girder Electric Traveling Cranes Utilizing Under Running Trolley Hoist \$105.00

CMAA 78: Standards and Guidelines for Professional Services Performed on Overhead and Traveling Cranes and Associated Hoisting Equipment \$30.00

CMAA 79: Crane Operators Manual \$10.00

me that OSHA lifted the OSHA verbiage directly from the B30.2 paragraphs)

3. CMAA 70: 37 total words on crane inspections
4. NEC 70, ARTICLE 610... No crane inspection sections, no crane inspection words, Zip-pity Do Dah, Zilch, Nothing!

So OSHA has a mere 667 words regarding crane inspections, and although OSHA pulled a fast one and quietly added about another 19,700 pages of regulatory documentation, these additional documents provide only another 777 words for a grand total of 1,444 words specifically about overhead crane inspection.

1,444 words can hardly be considered a “go to” source for all the questions about EOT inspections. Issues like, who’s qualified to inspect EOT cranes, how often, what documentation is required, what exactly is required to be inspected, etc. By the way, at the time of the first draft of this paper you are reading, it had 2,519 words. That’s 74% more words than OSHA and all of its subsidiary documents, about EOT crane inspection requirements added together!

**STRIKE THREE:
OSHA’S GENERAL DUTY CLAUSE**

Here’s the real kicker; where the Bible needed 10 Commandments, OSHA needs just one, the General Duty Clause.

Section 5(a)(1) of the Occupational Safety and Health Act of 1970, employers are required to provide their employees with a place of employment that is “free from recognized hazards that are causing or are likely to cause death or serious harm.”

What this means is that regardless of whether OSHA has written a specific requirement, the employer is still held to the standards of the General Duty Clause. In other words, even if the crane owner has conformed to every element of OSHA and it’s 197 “Incorporated by Reference” helper specs, they may still be held responsible for a worker accident. Further, since in most states, injured employees are precluded from suing their employer under Workman’s Comp, the crane inspector and the crane repair company become the primary target in the crosshairs of the Plaintiff’s lawyer.

The “General Duty Clause” is the real world equivalent the 1978 movie “Animal House” in which John Belushi and the Delta’s were put on “Double Secret Probation” by Dean Wormer.

**A PRACTICAL PROPOSAL TO OVERCOME
OSHA’S CLARITY PROBLEM:**

A few years ago, the CMAA (Crane Manufacturers Association of America) created a helpful guidebook,

CMAA Specification 78: Standards and Guidelines for Professional Services Performed on Overhead and Traveling Cranes and Associated Hoisting Equipment.

In spite of what might be the longest book title ever, it’s loaded with useful information. Here’s a rundown of the topics covered in CMAA Spec 78;

1. Crane Technician qualification requirements
2. Crane Inspector qualification requirements
3. Certification criteria
4. Continuing Education training requirements
5. Inspection types
 - a. Pre-shift
 - b. Frequent
 - c. Periodic
6. Inspection checklist
7. Inspection frequency
8. Inspection documentation requirements
9. Load Testing

This spec book may not be the “Everything You Wanted to Know About Crane Inspections,” but it’s the most comprehensive guide I’ve found, providing a proactive perspective on inspection and crane maintenance. This is by no means a perfect solution, but adoption of CMAA Spec 78 by both EOT crane owners and inspectors is a far better solution than the current system in which nothing is required, but in the event of an accident, everything should have been anticipated. Spec 78 provides both the EOT crane owner and the EOT crane inspector a reasonable level of performance to adhere to. It also provides the guy on the floor with the best shot at a safe working environment.

It is only fair and reasonable for the crane owner and crane inspector to have a specific written checklist as to what is required of them. Further, it is only fair and reasonable for the person on the shop floor to also have a checklist of the minimum requirements for a safe workplace and therefore the knowledge to lodge a complaint if they’re not being provided.

In lieu of specific requirements for crane inspections, to be a successful bidder (low bidder), inspectors must inspect less, do less or high cheaper and therefore less skilled inspectors. As the system is currently configured, there is no minimum baseline that inspection bidders must bid to. This creates a “race to the bottom” which is terrible for inspectors, crane owners and most of all the workers using the cranes.

Are the guidelines provided by Spec 78 required? In other words, in the event of an accident, can an owner or inspector take refuge in the statement, “... your Honor, we strictly followed the specification of the Crane Manufacturers Association, Spec 78.)

To this, I can only say that OSHA 1910.179.6 incorporates by reference CMAA 70. Although CMAA 70 says only 37 words regarding crane inspections, paragraph 1.15.1 incorporates by reference Spec 78. Over the years I've asked lawyers about the validity of a "double" Incorporation by Reference. In other words, OSHA 1910.6 Incorporating by reference CMAA 70 and in turn, CMAA 70 incorporating by reference CMAA 78. To date, each attorney I've asked has confirmed the validity of the second-tier reference.

Further, in the face of a total dearth of inspection information in OSHA 1910.179, ASME/ANSI B30.2 and CMAA 70, with CMAA 78 you have implemented the only reference book available. A book which was authored by the Crane Manufacturers Association of America, the association of the US crane industry. The one caveat with this advice is to check the owner's manual of the specific crane carefully. Make sure you have not left something out that the manufacturer requires explicitly. OSHA looks upon the manufacturer as the single most authoritative source of information on that piece of equipment.

ROLL YOUR OWN:

Since there is no "off the shelf" solution to EOT crane inspection requirements, my suggestion is to write your own EOT crane inspection policy manual. To write this, do what ISO9000 consulting firms teach their clients to do. The essence of ISO9000 is "Say what you're going to do, then do what you said."

What better position to take as the foundation of your inspection policy manual than the standards as established by the crane industry itself? Therefore, CMAA Spec 78 should be your starting point.

One caution, if you choose to incorporate Spec 78 into your own EOT crane inspection program, my advice is to be very careful about cherry picking just the sections you like. If you do decide to leave specific items out, make sure to document your thought processes. Your position for adopting CMAA 78 is that "this is what the industry experts do and I'm just following them." How will you in-turn justify that you know more than them and therefore deleted items from their checklist, unless you have a well-documented reason why? The second reason for documenting deletions from Spec 78 is to make sure that your deletion appears purposeful rather than a careless oversight.

Lastly diligently follow your written policy manual and document in writing that every step was followed by trained personnel. ■

In his 35 years of industry experience, Larry Dunville has built, installed, engineered, estimated, sold and serviced overhead bridge cranes. His firm, Overhead Crane Consulting, LLC supports crane buyers by writing custom specifications, developing custom crane safety programs, and serving as an expert witness.

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Although the OSHA Clarification Letters, on multiple occasions, have succinctly said that 1910.179 only pertains to Double Girder Top Running cranes the following is a list why you don't dare follow their advice.

1. GDC

The General Duty Clause requires the employer to provide a safe working environment. In the event a specific requirement is not mandated, it then is covered by the provisions of the GDC.

2. Insurance

In the event of an accident, good luck explaining to insurance carrier why you advised your client (or why you willingly took the advice) that it was not necessary to inspect all non-double girder top running cranes. Whether you're an inspector or an EOT Crane owner, if you're lucky, your "post-accident" premiums will be heading toward the stratosphere. If you're not lucky, you might find yourself uninsurable.

3. Inspection Client

To my notion, the crane inspection company is a hired expert that is engaged to help their non-crane expert clients on how to negotiate the mind field that is OSHA compliance. If through your advice, the EOT crane inspector and crane owner end up on the wrong side an injury or wrongful death suit, your future in the business is questionable at best.

4. Plaintiff Attorney, Judge, Jury and the Widow(er) At the very least, watching a crane owner and/or inspector attempt to explain to the widow(er) why single girder cranes are less in need of inspection than double girder cranes will be a fantastic display of verbal gymnastics. I wouldn't want to be the one trying to sell that argument.

The whole argument for not inspecting cranes other than double girder top running cranes reminds me of a series of public service TV ads that were run the 1970's by the National Transportation Safety Bureau about Defensive Driving. The tagline to the ads was, "... if you don't drive defensively, you may find yourself not only right but Dead Right!"