

Morrow Equipment
 C O M P A N Y, L. L. C.

Building  Success

Peter Juhren

Corporate Service Manager
 Morrow Equipment Co. L.L.C.
 Salem, OR USA





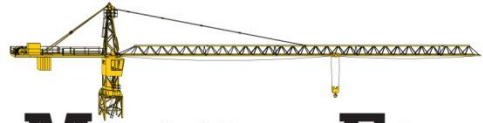
INTERNATIONAL
**TOWER
 CRANES**
www.khl.com/itc Berlin Germany, 11 October
CONFERENCE & RECEPTION 2012

CREATED AND ORGANISED BY



khl
 EVENTS

DIRECTOR GENERAL OF TRANSPORT
cranes ACT
AND SPECIALIZED TRANSPORT



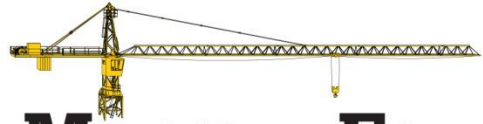
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Who is Training your Employees?



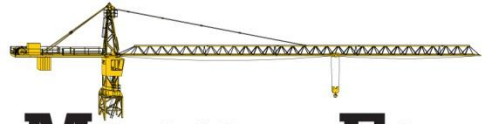
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**“There are no constraints on
the human mind, no walls
around the human spirit, no
barriers to our progress except
those we ourselves erect”**

RONALD REAGAN



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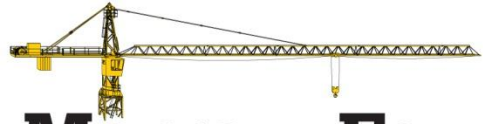
A skilled and properly trained workforce is the best way to ensure a safe work force.

Simply sending an employee to a training class does not guarantee the employee has gained the knowledge or skills to solve problems or perform certain tasks.

Monitor the training your employee's receive, and evaluate the knowledge and skills acquired continuously.



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Choosing the right training facility is crucial to ensuring the training your employees receive is effective, presented in an easy to understand format, and includes both classroom and hands on training with actual tower cranes and components.



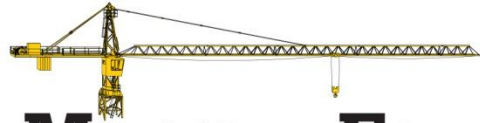
Morrow Training Center, Salem, Oregon, USA



Never assume the training facility you are sending your employees to is competent.

Glossy brochures, fancy certificates, and flashy websites, are just that. Attend a class yourself, or send one of your senior people to evaluate the programs offered and most importantly the knowledge and professionalism of the instructors.



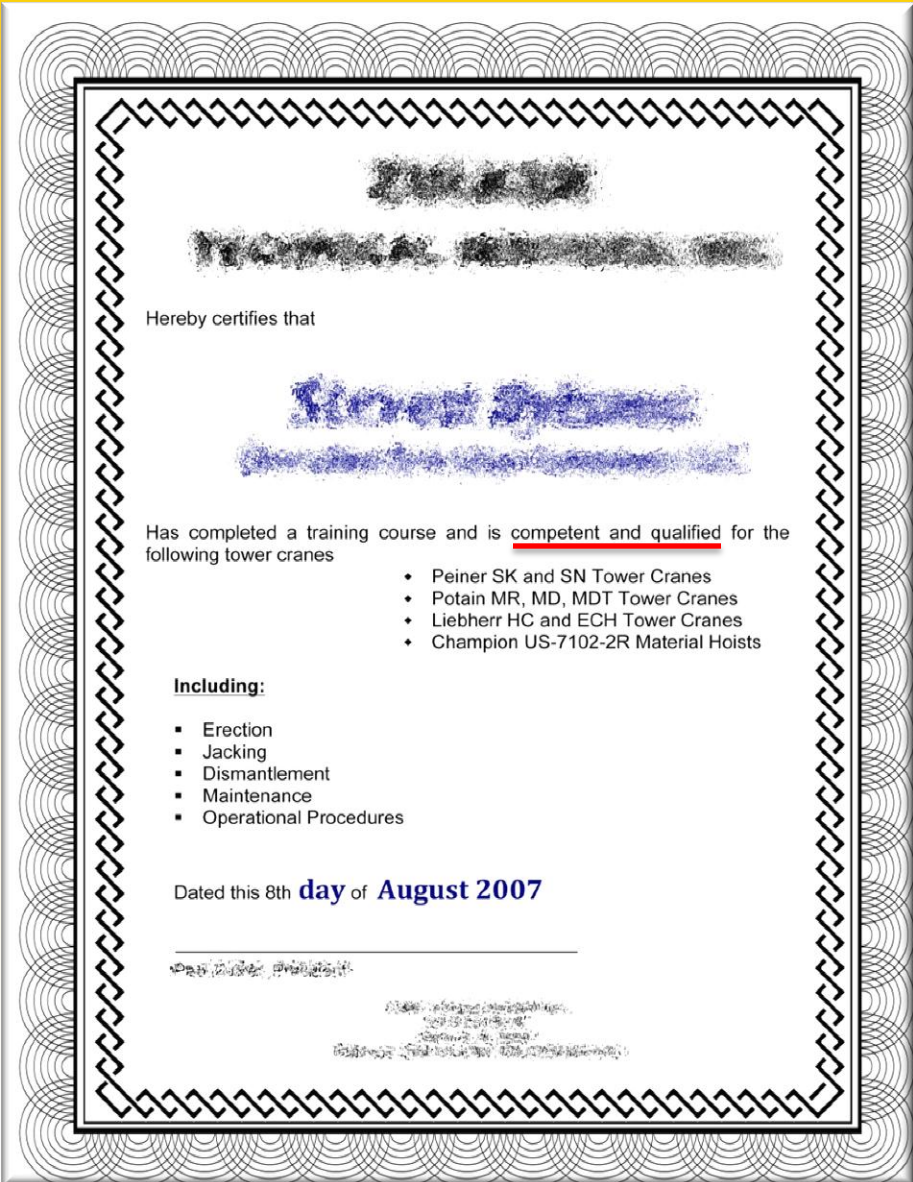


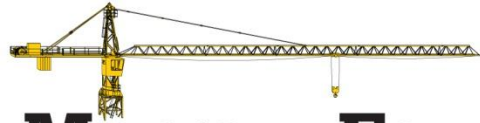
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Make sure the documentation you receive is accurate and truly reflects the courses and qualifications of the training provided to your employees.



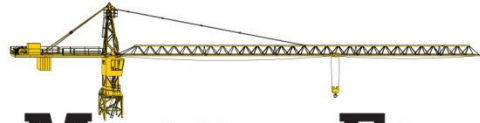


Ask for a list of their principal customers. A brief list of customers that attend Morrow's training center include;

- **United States Navy Crane Center**
- **United States Army Corps of Engineers**
- **M.A. Mortenson**
- **Kiewit**
- **Bechtel**
- **Odebrecht**
- **Shell**
- **PCL**
- **Terex**



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Salem, Oregon USA



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Ask for Letters of Recommendation



M. A. Mortenson Company
700 Meadow Lane North
Minneapolis, MN 55422

Main 763.522.2100
Fax 763.287.5430
www.mortenson.com

To: Peter Juhren
Corporate Service Manager
Morrow Equipment Co., L.L.C.

From: Fravel Combs
Manager of EHS
M. A. Mortenson Company

RE: Morrow Service & Corporate Trainer Chris Smith


Peter, I wanted to take a moment to thank you for the professional industry training that your firm has established and the fact that Chris Smith facilitates an outstanding curriculum.

Mortenson has an established relationship with Morrow for well over twenty years and I must say that when you hired Chris Smith and opened the training center the term service took on a whole new meaning.

When Mortenson developed our Tower Crane Training, your team helped us put together a week long train the trainer course for tower crane safety management. This course helped us become a recognized leader in the industry.

Safety training in today's business climate is critical to an organization and particularly Mortenson who values a zero injury climate.

Thank you for your continued service at a fair price and for Chris professional delivery of industry training products.



CONSTRUCTION LEADERS

Writers Direct Line: (780) 955-5110

July 5, 2012

Mr. Peter Juhren
MORROW EQUIPMENT COMPANY LLC
3218 Pringle Road SE
P O Box 3306
Salem, OR 97302 USA


Dear Mr. Juhren

Recently we had the pleasure of bringing down a group of 6 technicians for some training on the Liebherr Litronic Tower Cranes. Your training center is truly state of the art for this purpose. It has a good class room area along with all the equipment necessary for hands on training. Your instructors Chris Smith and Martin Winziers are both very knowledgeable and they do a great job of making sure everyone understands what's being taught. We all left the course feeling good about being able to work on the Litronic Cranes.

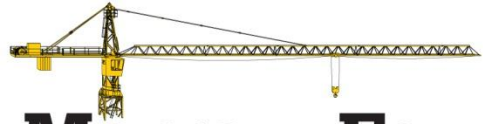
We were so impressed with the entire set up that we have a group of 5 technicians coming down for some training on Construction and Material Hoists this month.

Thank you to you and your people for their hospitality. We really appreciated the way things were looked after for us.

Sincerely,



Mike Unger
Crane / Temporary Power
Specialist



Training should never be just about learning a task or how to fix a piece of equipment.

Training must include the proper use of safety and protective gear required to complete the task at hand safely.

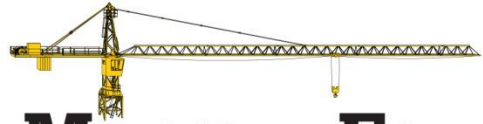
Big company or small, safety should never take a back seat when it comes to training, including teaching life saving techniques.



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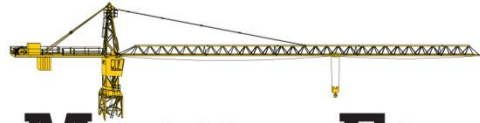
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Accredited Operator certification, such as industry leader NCCCO*, ensures that the employee has the basic skills and knowledge to safely operate a crane, including understanding codes and regulations.



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Salem, Oregon USA

*National Commission for the Certification of Crane Operators, USA

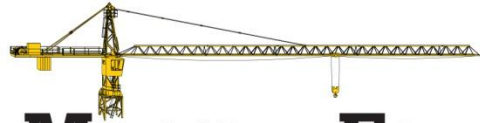


At Morrow's training center located on our corporate headquarters campus in Salem, Oregon, USA, we offer a variety of courses to suit just about any requirements our customers have, such as;

- **Tower Crane Operator Training**
- **NCCCO Tower Crane Operator Certification**
- **NCCCO Rigger Certification**
- **NCCCO Signal Person Certification**
- **Tower Crane Service**
- **Tower Crane Technician**
- **Tower Crane Management**
- **Tower Crane Safety and Inspection**
- **Construction Hoist Service**
- **Construction Hoist Safety and Inspection**
- **Safety Training Programs**

Morrow can also custom tailor any program to fit customer specific criteria.





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training center



- Select the right facility
- Verify the program
- Evaluate personnel
- Continuous education
- Enforce safety

Morrow Equipment Co, LLC
P O Box 3306
Salem Oregon 97302 USA

Tel +1 503 585 5721
Fax +1 503 363 1172

Info@morrow.com
www.morrow.com

S-W-O-T

•Strength

- What are your Company's greatest strengths?

•Weakness

- Where do your Company's weaknesses lie?

•Opportunities

- What opportunities can you use to your advantage?

•Threats

- What threats are posed if you don't change and adapt?

Quality Control

A system for verifying and maintaining a desired level of quality in a product or process by careful planning, use of proper equipment, continued inspection, and corrective actions required

Quality Assurance

All actions taken to ensure that standards and procedures are adhered to and that delivered products or services meet performance requirements



Visually Inspect Incoming Equipment

Morrow-FON

NO VISIBLE STRUCTURAL
DEFICIENCIES

INITIALS: _____

DATE: _____

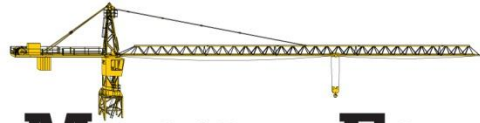
Affixed to every component that has
NO structural Damage

Visually Inspect Incoming Equipment



Morrow-AME
QC FAIL
INITIALS: _____
DATE: _____
S/N: 0012000

Affixed to every component that has STRUCTURAL
Damage



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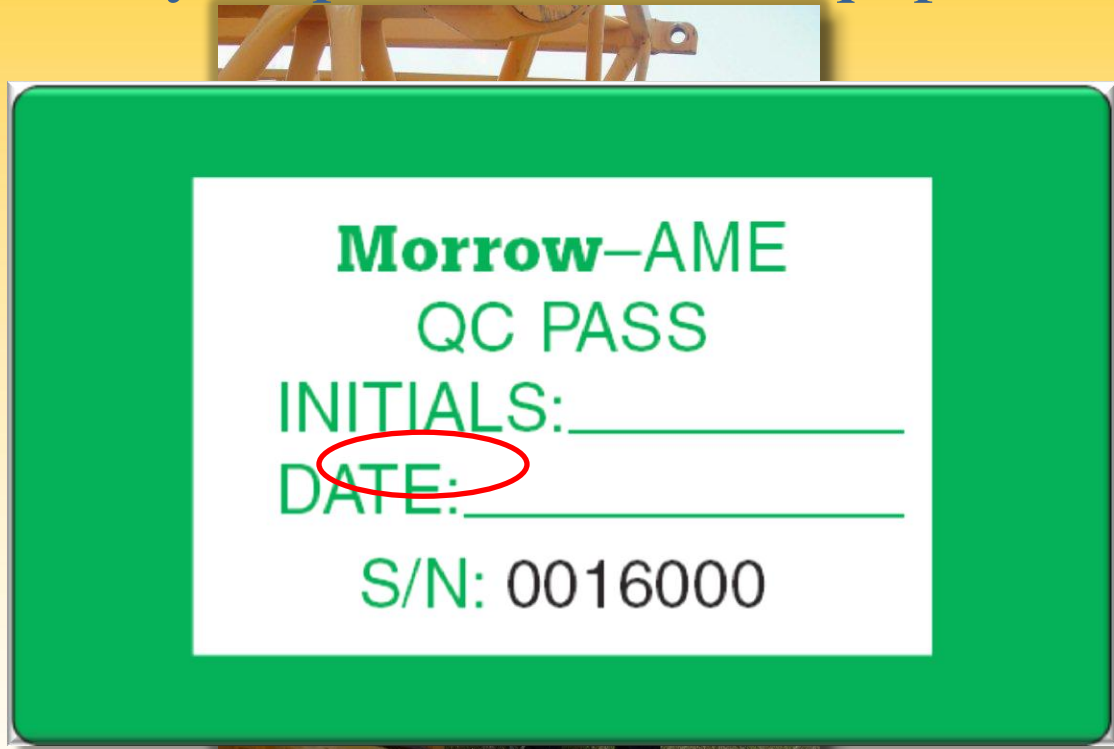
Quality Assurance and
 Control

Building  Success

Documenting Structural Repairs

Doc #: ACW-322	Equipment Discrepancy & Repair Report		
Component: 1317	Jib Section 3 - #622		
Model: 1800C	Serial #: 1275	RED QC Tag: 13351	Status: WAITING FOR REPAIR
Inspector notes: JIB SECTION IS READY FOR FLEET USE. (QC PASS TAG 95285)			
District manager notes:			

Visually Inspect Outbound Equipment



Affixed to every component after
FINAL Inspection

passing

QA Green Tag Recording

Show Committed Accessories - Windows Internet Explorer
 http://mec.morrow.com/Equipment/MECEQshowCommittedAccessories.asp

Committed Accessories for #10909 - DERR STEEL ERECTION COMPANY
 Date Printed: 08/04/2009

Customer ID: 10909
 Class: TOWER CRANES
 Manufacturer: LIEBHERR
 Model: 540HC-L
 Serial #: 45.265

Initial HUH: 100
 Final HUH: 332
 Reach: 197

Erection Date: 07/28/2009
 Dismantle Date: 12/30/2010
 Last Approved Climb Date: 07/27/2009
 Next Scheduled Climb Date: 10/01/2009

Location: DERR STEEL ERECTION COMPANY
 PLANT SCHERER
 FGS/SCR UNIT 3-4
 10988 HWY 87
 JULIETTE, GA 31046

QC Approve

Crane Tracking Remar

Action	Comp ID	Tag	Loc	Wt	Climb Date				
	127	0							
	3520	0							
	3519	1	ACW	24250	10/1/2009				
	3520	1	ACW	100	10/1/2009				
	3521	0	ACW	200	10/1/2009				
	3522	1	ACW	100	10/1/2009				
	3523	0	ACW	50	10/1/2009				
	3524	1	ACW	75	10/1/2009				
	3525	1	ACW	50	10/1/2009				
	3525	1	ACW	200	10/1/2009				
	3644	0	ACW	7000	10/1/2009				
	666	0	ACW	1200	10/1/2009				
	665	0	ACW	1200	10/1/2009				
	672	0	MIA	2600	10/1/2009				
	706	0	MIA	250	10/1/2009				
	709	0	MIA	350	10/1/2009				
	127	0	10776	56620	12/1/2009				
	633	0	MIA	7000	12/1/2009				
	666	0	MIA	1200	12/1/2009				
	665	0	MIA	1200	12/1/2009				
	672	0	MIA	2600	12/1/2009				
	706	0	MIA	250	12/1/2009				
	709	0	MIA	350	12/1/2009				
	127	0	10776	56620	12/1/2010				
	633	0	9537	7000	2/1/2010				
	666	0	9537	1200	2/1/2010				
	665	0	9537	1200	2/1/2010				
	672	0	9537	2600	2/1/2010				
	706	0	9537	250	2/1/2010				
	709	0	9537	350	2/1/2010				
	3	3	540HC-L	550HC Standard Tower Section	19' Long (Pin) Angled Ladder	C053.001-332.111	9537	42465	2/1/2010
	1	1	540HC-L	550 HC Tie-In Collar		C032.001-374.111	9537	7000	2/1/2010
	3	3	540HC-L	550 HC Tie-In Strut	End Piece W/Adj 2'5 1/2" Left	C033.005-379.112	9537	1200	2/1/2010
	3	3	540HC-L	550 HC Tie-In Strut	End Piece W/Adj 2'5 1/2" Right	C033.005-379.111	9537	1200	2/1/2010
	8	8	540HC-L	550 HC Tie-In Strut Standard	Intermediate (3'3")	C033.005-379.133	9537	2600	2/1/2010
	1	1	540HC-L	550 HC Bearing Frame - Shoe	One Pin W/Backing Plate 1-1/8" Hole Size	C033.005-379.411	9537	250	2/1/2010
	1	1	540HC-L	550 HC Bearing Frame - Shoe	Two Pin W/Backing Plate 1-1/8" Hole Size	C033.005-379.421	9537	350	2/1/2010
Total Weight: 204375									

Quality Control Tags Entered
 for Component #3519 in ACW Close

Quality Control Tag #

17296



Quality Assurance and Control



Comprehensive Overhaul Program

Maintenance Checklist - Liebherr LC, HC, EC-H -- Webpage Dialog

Doc #: TAM-27 **Maintenance Checklist - Liebherr LC, HC, EC-H**

A/R #: 11443 **BALFOUR BEATTY CONSTRUCTION** **Status:** FINISHED

Model: 550HC 40 **Serial #:** 29.044 **Hook Height:** 147 **Hook Reach:** 127 **Date:** 5/8/2012 **Inspector:** Gingras, Kenneth

Base Tower Section	Tower Sections	Cabin Section	Trolley Assembly	Counterjib
Tower Top	Hoist Unit	Jib Assembly	Hook Block	PLC Crane Settings/Tech. bull

Jib Assembly		
Initial	Description/Task	Comments
JRC	Jib sections: 611 <input checked="" type="checkbox"/> , 612 <input type="checkbox"/> , 621 <input checked="" type="checkbox"/> 622 <input type="checkbox"/> , 623 <input type="checkbox"/> , 629 <input type="checkbox"/> 631 <input checked="" type="checkbox"/> , 632 <input type="checkbox"/> , 633 <input type="checkbox"/> , 634 <input type="checkbox"/> 635 <input type="checkbox"/> , 636 <input type="checkbox"/> , 641 <input checked="" type="checkbox"/> , 642 <input type="checkbox"/>	
JRC	1. Structural	good
JRC	2. Paint condition	fair
n/a	3. If repaired, jib # and lacing #	
KG	4. Wedge, becket, clamp	new + 2 cable clamps 1 1/8 + filler c
JRC	5. Swivel holding bolt to prevent swivel action	yes
JRC	6. Catwalk condition	good
JRC	7. Pendant bars: / 26'-3"x2 / 4'-3"x1 / 6'-11"x1 / 2'-8"x1 / 23'-9 1/2"x / /	
JRC	8. Jib saddles Jib section no. 631	
JRC	9. A-frame couplers and pins	X2
EJB	10. Condition of trolley motor on jib section #611 Megohmmeter reading 100meg	
EJB	Name tag of motor no tag Ohm reading of brake coil 527ohms	
EJB	11. Condition of brakes: Shoe thickness new 12mm Shoe thickness now 11.2mm No. of shoes no shoes-disc	
EJB	12. Condition of drive coupler	sounds good
EJB	13. Oil changed <input type="checkbox"/> Type installed Viscosity 80/90	Good not changed
EJB	14. Drum clamps on trolley drum ground down on face for American size cable	yes
EJB	15. Trolley rope Dia 5/8" Inner length 230ft Outer length 347ft	
EJB	16. Condition of cable	good
JRC	17. Front jib safety cables present	X2
JRC	18. Front jib safety handrails: No. required No. there	factory welded
n/a	19. Number of wraps on trolley INNER drum	
n/a	20. Number of wraps on trolley OUTER drum (3 minimum)	
n/a	21. Position of trolley INNER rope from bumpers of #611 jib section Feet required	
EJB	22. Trolley limit switch	operational
EJB	23. On 390HC/550HC/630EC-H with A-frame, secondary erection rope with splice plate tied to jib sec. #611	tied to 621
EJB	24. Gearbox	good

Slewing Ring Inspection and Tracking

Slewing Ring Inspection and Torque Report -- Webpage Dialog

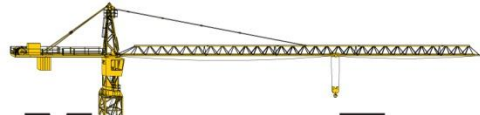
SRI #: ORT-14 **Slewing Ring Inspection and Torque Report** Print Exit

Inspection: **Bolt torque:** **Status:** FINISHED
Manufacturer: Liebherr **Hr meter reading:** 17327 **Date:** 6/9/2009
Model: 420EC-H 16 **Serial #:** 41.234 **Bearing Serial #:** 982747901
Type of Ring: Single Row **Double Row:** **Status:** Excl
External teeth: **Internal teeth:** **Next Svc Date:** 6/9/2014
Match marked upper & lower rings no.: **Match marked to cabin:** YES
Upper bolt size: M33 **Length:** 250mm **Grade:** 10.9
Lower bolt size: m33 **DIN/ISO:** 931 **Torque:** 1487 ft/lb
Length: 250mm **Grade:** 10.9
DIN: 931 **Torque:** 1487 ft/lb
SO #: **NDT Tested:** **Date:**

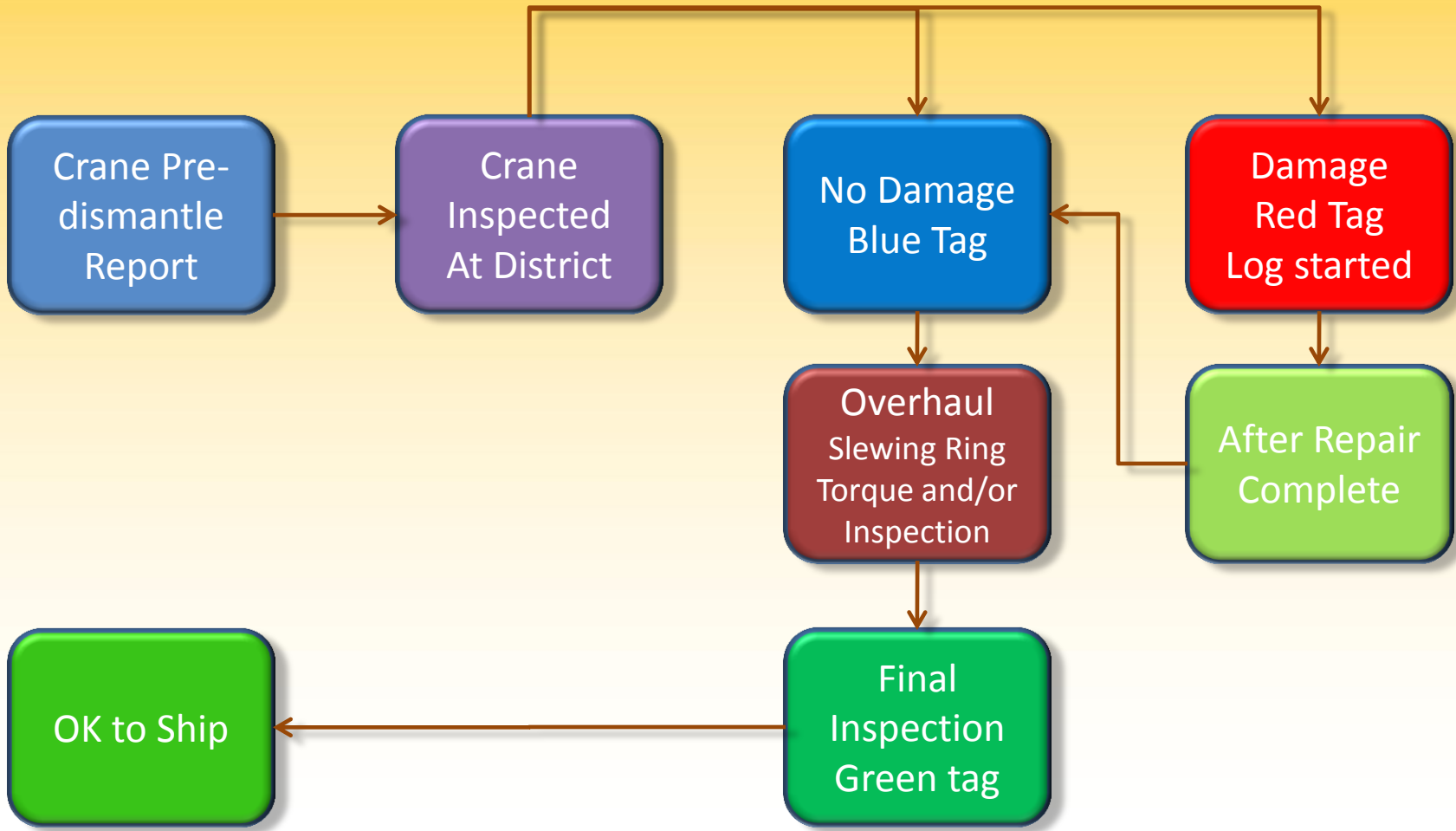
Cond. of bolts: (New) GOOD **Location of soft spot after installation:** 90 ° FROM FRONT OF CABIN.
Condition of gear teeth on ring: GOOD
Cond. on drive pinion #1: GOOD **#2:** GOOD **#3:**
No. of balls/rollers per upper row: 76 balls **Dia of balls/rollers:** 70mm **Cond. of balls/rollers:** VERY GOOD
No. of balls/rollers per lower row: **Dia of balls/rollers:** **Cond. of balls/rollers:**
No. of spacers per upper row: 76 **No. of spacers per lower row:** **Cond. of spacers:** VERY GOOD
Cond. of upper race: INNER AND OUTER RACE IN VERY GOOD CONDITION
Cond. of main body: **Top race:** **Bottom race:**
Cond. of lower race:
Cond. of seal: Upper: GOOD **Lower:** GOOD
Describe probable cause(s) of damage (if any):

Gear lash between pinion and gear at high spot: mark right: left:
Old slewing ring reused? Yes No **New slewing ring installed?** Yes No SO no. **New Date:**

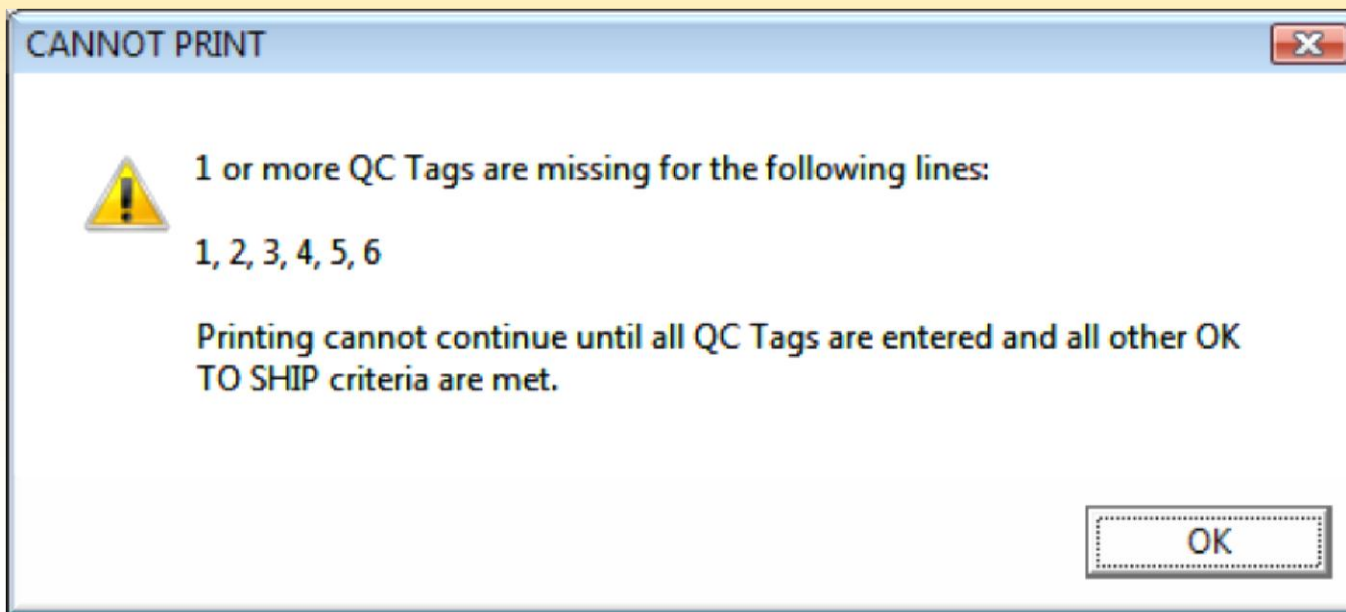
Remarks:
 SLEWING RING SHOWS VERY LITTLE WEAR AND NO RUST. IT WAS ALSO REPACKED.
 6/10: MARKUS TORQUED UPPER BOLTS ON JOB SITE.
Inspector: Holmes, Larry



QA/QC Flow Chart



If an attempt to print a bill of lading is made without all QA/QC items completed, the following message will be displayed





Quality Assurance and Control



Final Quality Assurance Verification



Morrow Equipment
COMPANY, L.L.C.
 14645 Merrill Avenue
 Fontana, CA 92335-4219
 Ph (909) 829-1565 Fx (909) 829-0400

Bill Of Lading
4 - 3875
 (Printed: 09/21/2012)

Page 1

Equip Model	Serial #	Date Shipped	Load
550ECH20-LITRONIC PO #:FON-6490	45.230	7/14/2011	2 of 11

Shipped From: Customer #:M94
 MORROW EQUIPMENT CO., L.L.C.
 STORAGE YARD
 1045 W. Rialto St.
 Rialto, CA

Shipped To: AR # 11267
 MR. CRANE, INC.
 LAX
 8100 WESTCHESTER PARKWAY
 LOS ANGELES, CA

Date Required	Delivering Carrier	Freight Charges	Tractor #	Trailer #
7/16/2011	SSI EXPRESS	prepaid		

Item	Model	Component	Description	Qty	Unit	Weight	Total
1	Tower Sections	127	550HC Standard Tower Section 19' Long (Pin) Angled Ladder C053. 001/002-332. 111	3	each	14155	42465
<div style="border: 2px solid red; padding: 5px; display: inline-block;"> QC Tags: 0099440, 0099441, 0099442 </div>							

•Develop

- A quality control system that is comprehensive and encompasses all of the manufacturer's requirements as well as those of safety authorities

•Implement

- A quality assurance program where you can prove that the quality controls you set in place are documented continuously

•Evolve

- Continuously challenge your procedures and processes and make the necessary changes to ensure your program is meeting your goals

D I E

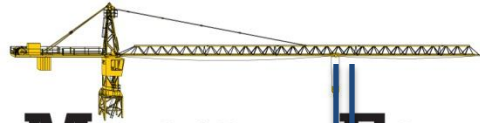
Quality is what you accept;

- Accept low quality, and you will get low quality.
- Demand high quality, and you will receive high quality

You determine where the bar is.

Set it high and your people
will reach for it





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Thank You