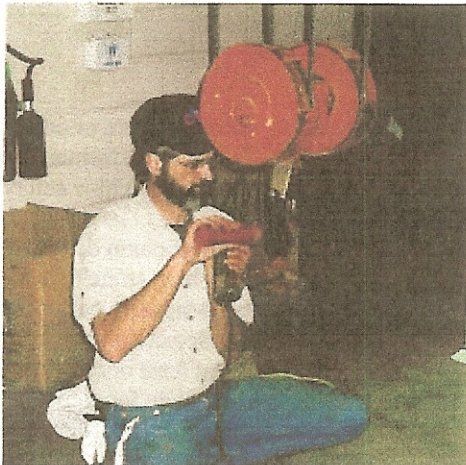


## Inspection & Preventive Maintenance of Cranes

REINHART & ASSOCIATES, INC. (R&A), a small business, engineering, and inspection, Texas-based corporation offers a comprehensive program for inspection and preventive maintenance of all types and sizes of stationary and mobile cranes. Besides using OSHA certified crane inspectors, R&A can provide professional mechanical engineers for design, failure analysis, and structural modifications to improve the long term integrity of aging crane systems. Also, nondestructive testing (NDT) services can be provided by nationally certified inspectors in weld inspection (AWS, CWI) and NDT, Level III, II, and I examiners in the NDT methods of radiography (RT), ultrasonics (UT), liquid penetrant (PT), magnetic particle (MT), eddy current (ET) and remote visual testing (VT) using video probes and borescopes. NDT is an integral part of an inspection/preventive maintenance program and is also used for quality control of weld repairs.

Crane inspections are conducted in accordance with OSHA 19110.179 and 1926.550 and ANSI B30.2(1967) and the standards ANSI/ASME B30.2(1998) with excerpts from B30.5(1999) and B30.10(1998).

Inspection reports include a list of inspections performed, results, digital photographs, and recommendations for repair and/or maintenance. A site meeting is also held with the client to explain the inspection results.



Magnetic Particle NDT of crane hook using yoke and red particles as performed by a certified Level II examiner per ASNT SNT-TC-1A.

### REINHART & ASSOCIATES, INC

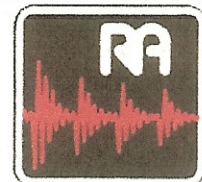
*Nondestructive Evaluation Specialists*

P.O.Box 81545                      2032 Centimeter Circle

Austin TX 78708-1545      Austin TX 78758

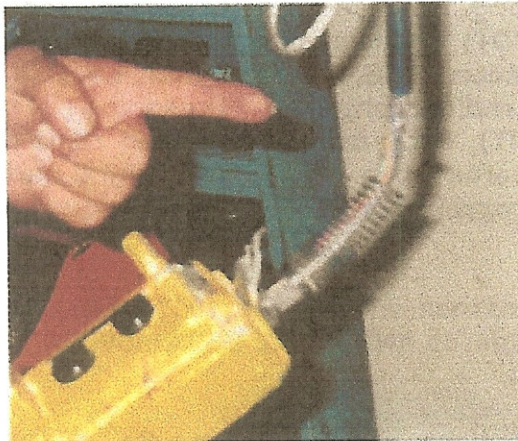
512-834-8911/Fax 512-834-1266

Email – [mail@reinhartassoc.com](mailto:mail@reinhartassoc.com)      Web – [www.reinhartassoc.com](http://www.reinhartassoc.com)





Damaged cable detected  
During crane inspection



Frayed wiring at control box  
Detected during inspection



Inspection of 10-ton crane

Complete inspections of overhead and gantry cranes are performed at specific intervals depending on crane activity, severity of service, and environment. Any deficiencies such as listed below shall be carefully examined and determination made as to whether they constitute a safety hazard:

1. Deformed, cracked, or corroded members
2. Loose bolts or rivets
3. Cracked or worn sheaves and drums
4. Worn, cracked or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices
5. Excessive wear on brake systems parts, linings, pawls and ratchets
6. Load, wind and other indicators over their full range, for any significant inaccuracies
7. Gasoline, diesel, electric or other power plants for improper performance or non-compliance with applicable safety requirements
8. Excessive wear of chain drive sprockets and excessive chain stretch
9. Crane hooks. Magnetic particle or other suitable crack detection inspection should be performed at least once each year.
10. Electrical apparatus, for signs of pitting or any deterioration of controller contactors, limit switches and pushbutton stations.

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512-834-8911/Fax 512-834-1266

Email – [mail@reinhartassoc.com](mailto:mail@reinhartassoc.com)    Web – [www.reinhartassoc.com](http://www.reinhartassoc.com)

