



# Managing Suspect/Counterfeit Items – The CHPRC Experience

Presented to: ISM Champions Conference

Presented by: Rick Warriner, CHPRC  
Quality Systems

Location     Augusta, GA  
Date             September 2010

*One Team. One Culture.*

# Rick Warriner



Has 17 years' experience in the leadership, development, and implementation of nuclear facility quality assurance, process analysis and productivity improvement programs. Mr. Warriner has been the Hanford Site NQA-1 Lead Auditor Course instructor for the last seven years. He is a Certified Manager (CM) and Project Management Professional (PMP). Mr. Warriner currently is the Quality Systems Manger for the Hanford Site Project Restoration Contractor, CH2MHill.



# Have you been impacted?



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# How did it all begin?

- As best as can be determined, the first S/CI fasteners entered the U.S. sometime in 1974. It took until the mid-1980s for the petroleum, aircraft, and nuclear industries to recognize that they had a problem and begin to act.
- These industries issued warnings, criteria, and recommended actions specific to their business needs. They also began to place pressure on the Federal Government to take action.
- By the late 1980s S/CI fasteners had permeated the U.S. market. There were documented events where S/CI caused deaths. The situation was so severe that in 1990 Congress passed the Fastener Quality Act. **This was only the beginning...**

# What has been Hanford's experience with S/CI?

- Since the early 1990s, Hanford has received S/CI bolts, fabrication metal, breakers, HEPA filters, fire system valves, pressure switches, pipe, and many other items. We also received a large number of assemblies containing S/CI components.
- At Hanford, we had the tie down strap effort in 2003, the heat treated aluminum review in early 2004, the forklift problem in 2005, and the weather enclosure hardware issue in 2007.



# The World Today!

- The International Chamber of Commerce's Counterfeit Intelligence Bureau estimates that 5 to 7 percent of world commerce is counterfeit.
- The World Health Organization estimates that over 10 percent of the medications taken world wide are counterfeit.
- Electrical Industry's Anti-Counterfeiting Products Initiative estimates that counterfeit and pirated products cost U.S. Industry \$250 billion a year and result in the loss of over 750,000 jobs.



# The World Today!

- Since 1991 U.S. paper currency has been in a continuous state of change trying to stay ahead of sophisticated counterfeiting efforts.
- Since 1996 UL has had to change their labeling requirements on listed products three times because of continued counterfeiting.
- Historically excellent suppliers (some with new offshore corporate owners) are no longer supplying the same level of quality that they have in the past.



# The Fastener Quality Act (FQA)

## 15 CFR 280 - 1990

- Requires certain fasteners to conform to specifications to which they are represented.
- Provided accreditation of testing laboratories.
- Required standardized methods for inspection, testing, and certification.
- Provided recordation of manufacturers' insignias.
- Established remedies and penalties.
- Established authority for regulation and enforcement.



# What is a Fastener?

A metallic screw, nut, bolt, or stud having internal or external threads, with a nominal diameter of 6 millimeters (1/4 inch) or greater, or a load-indicating washer, that is through-hardened or represented as meeting a consensus standard that calls for through-hardening, and that is grade identification marked or represented as meeting a consensus standard that requires grade identification marking ...

# ...except that such term does not include any screw, nut, bolt, stud, or load-indicating washer that is

- a part of an assembly
- a part that is ordered for use as a spare, substitute, service, or replacement part unless the part is in a package containing more than 75 of any such part at the time of sale or that part is contained in an assembly kit
- produced and marked as ASTM A 307 Grade A
- produced in accordance with ASTM F 432
- specifically manufactured for use on an aircraft
- manufactured in accordance with a fastener quality assurance system
- manufactured to a proprietary standard

# Headmark List

All Grade 5 and Grade 8 Fasteners of Foreign Origin Which Do Not Bear Any Manufacturers' Headmarks:



Grade 5



Grade 8

## Grade 5 Fasteners with the Following Manufacturers' Headmarks:

MARK	MANUFACTURER	MARK	MANUFACTURER
J	Jinn Her (TW)	KS	Kosaka Kogyo (JP)

## Grade 8 Fasteners with the Following Manufacturers' Headmarks:

MARK	MANUFACTURER	MARK	MANUFACTURER
A	Asahi Mfg (JP)	KS	Kosaka Kogyo (JP)
NF	Nippon Fasteners (JP)	RT	Takai Ltd (JP)
H	Hinomoto Metal (JP)	FM	Fastener Co of Japan (JP)
M	Minamida Sleybo (JP)	KY	Kyoel Mfg (JP)
MS	Minato Kogyo (JP)	J	Jinn Her (TW)
Hollow Triangle	Infasco (CA TW JP YU) (Greater than 1/2 inch dia)		
E	Daiel (JP)	UNY	Unytite (JP)

## Grade 8.2 Fasteners with the Following Manufacturers' Headmarks:

MARK	MANUFACTURER
KS	Kosaka Kogyo (JP)

## Grade A325 Fasteners (Bennet Denver Target Only) with the Following Headmarks:

	MARK	MANUFACTURER
Type 1	A325 KS	Kosaka Kogyo (JP)
Type 2	T	
Type 3	A325	



NO MARK



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# Identified S/CI Headmarkings in TA-V's Storage Bins



Unknown Mfr  
Total Bolts = 210



Unknown Mfr  
Total Bolts = 502



Unknown Mfr  
Total Bolts = 25



Unknown Mfr  
Total Bolts = 3



Unknown Mfr  
Total Bolts = 10



Unknown Mfr  
Total Bolts = 7



On DOE S/CI List  
Total Bolts = 1



Unknown Mfr  
Total Bolts = 6



Unknown Mfr  
Total Bolts = 6



Unknown Mfr  
Total Bolts = 22



Unknown Mfr  
Total Bolts = 2



Unknown Mfr  
Total Bolts = 34



Unknown Mfr  
Total Bolts = 1



Unknown Mfr  
Total Bolts = 1



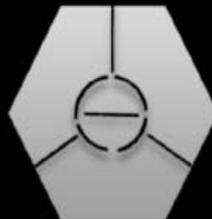
Unknown Mfr  
Total Bolts = 1



Unknown Mfr  
Total Bolts = 1



Unknown Mfr  
Total Bolts = 2



Unknown Mfr  
Total Bolts = 1



Unknown Mfr  
Total Bolts = 1



On DOE S/CI List  
Total Bolts = 106



On DOE S/CI List  
Total Bolts = 258



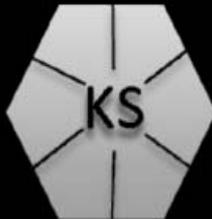
Unknown Mfr  
Total Bolts = 39



On DOE S/CI List  
Total Bolts = 85



On DOE S/CI List  
Total Bolts = 52



On DOE S/CI List  
Total Bolts = 68



On DOE S/CI List  
Total Bolts = 65

## TOTALS

- Unknown Manufacturers = 979 bolts
- On DOE's S/CI List = 530 bolts
- AHCF/SPR Storage Bins = 933 bolts
- ACRR Storage Bins = 109 bolts
- HCF/GIF Storage Bins = 467 bolts

# Our Business Changed

- New contractors bringing new perspectives.
- Historical focus on nuclear safety – cleanup mission with a clear focus on personnel safety.
- Greater emphasis on subcontracting.



# Our Business Changed (continued)

- Involving small businesses is important – and expected.
- Influx of ARRA funds – increasing our budget and stretching our ability to control S/CI.
- S/CI problems have changed (Bolts to Bread).



# The CHPRC Approach

- Involve Our Staff
  - Target Zero, Morning Safety Analysis Center Call, Quality Center of Excellence, Quality Program Change Training, ISMS Phase I and II Assessment efforts.
- Involve Our Suppliers
  - Essential unless you are prepared to inspect “everything”
  - Contract language critical! Provide training and materials & Technical Support. Focused contract letters if performance falters.
- Involve Our Customer
  - Facility Representative Training & Technical Support.



### Be on the lookout...

The Department of Energy requires CHPRC to mitigate the introduction of suspect/counterfeit and defective items (S/CIs) into our projects, facilities and equipment.

#### These items include:

- High-strength fasteners
- Hoisting and rigging equipment
- Electrical breakers
- Piping
- Relays
- Pressure switches
- Control valves
- Personnel protection equipment



The CHPRC Quality Assurance organization oversees the S/CI Program for CHPRC. The program oversees the processes associated with S/CIs, such as:

- Identification
- Documentation
- Disposition
- Reporting
- Controlling
- Disposal

The CHPRC S/CI Program is documented in **PRC-PRO-QA-301**, *Control of Suspect/Counterfeit and Defective Items*.

## Supervisor Briefing Points

### Suspect/Counterfeit and Defective Items

It is the responsibility of every CHPRC employee to be watchful for Suspect/Counterfeit and Defective Items (S/CI). Many times these items can be identified by suspicious marking or packaging, or the material simply looks like it has been used previously.

There are tools for helping identify S/CI materials, such as the "High-Strength Fastener Head Mark" list. In addition, formal training is available for individuals that work in an area with a high probability of encountering S/CI equipment.

If you believe you have a suspect item, inform your supervisor and project Quality Assurance Engineer. The Quality Assurance Engineer can verify whether the item is a S/CI and can document it on a Nonconformance Report (NCR). The item will be segregated from other conforming material, and marked with a red "QC-HOLD" tag.

Due to the vigilance of many Hanford workers, S/CI materials have been identified in a number of active electrical, piping, and structural systems across the Site.

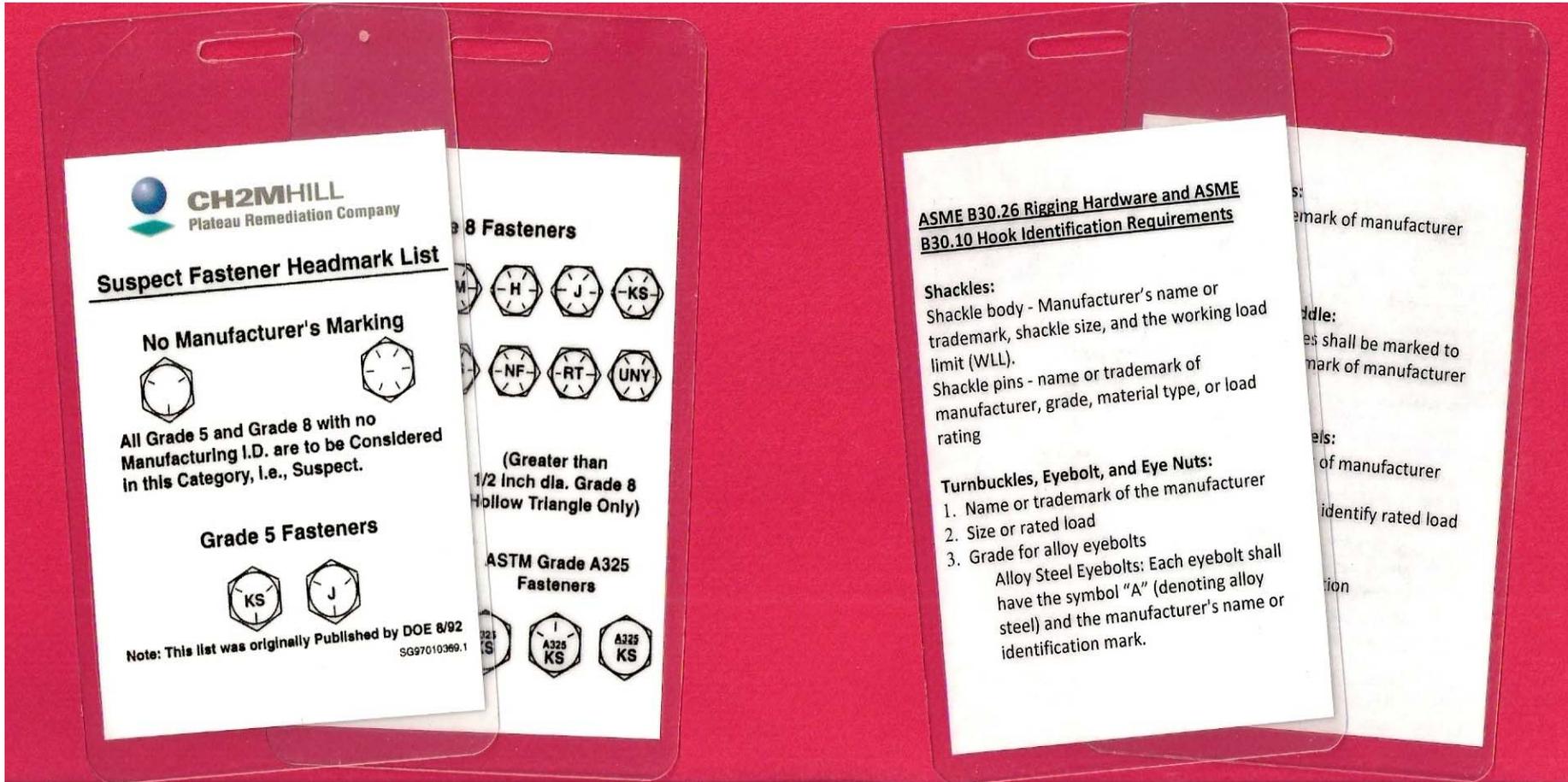
If you have any questions related to the S/CI program, contact the CHPRC S/CI Coordinator, Jim Bolm at 949-9465 or via email at [James\\_G\\_Jim\\_Bolm@rl.gov](mailto:James_G_Jim_Bolm@rl.gov), or Jim Duda at 948-5796 or email at [James\\_E\\_Duda@rl.gov](mailto:James_E_Duda@rl.gov).

### Ask the following questions:

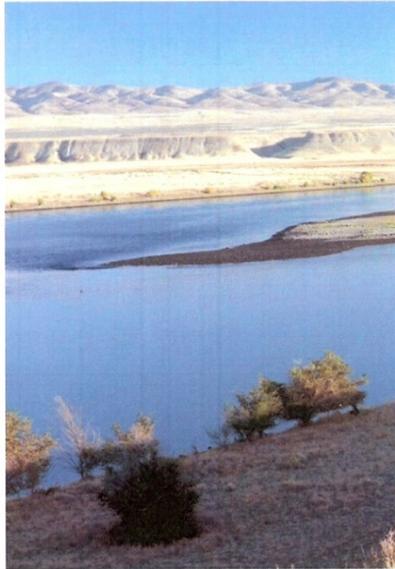
- What items in your work scope could be S/CI?
- What should you do if you suspect an item may be a counterfeit or defective?



# Badge Cards



# Subcontractor Training



## How tight are your fasteners?

...or why did it snap.

Presented to: Procurement Forum

Presented by: Rick Warriner  
CHPRC Quality Systems Manager

January 2010

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# When Performance is Less Than Adequate

January 6, 2010

CHPRC-QA-02

**To: Master Drilling Contractors**

**RE: Suspect/Counterfeit Items**

CHPRC has seen a significant increase in QC nonconformance and occurrences on site due to suspect/counterfeit items in the last 60 days. In FY2009 there were a total of 6 reports of suspect/counterfeit items within the Drilling program. Attached is a typical example of an NCR and occurrence. CHPRC takes this issue very seriously and continued violations will become an issue. In accordance with your contract, General Provisions, GPR001\_PRC, Section 3.10 Counterfeit Fasteners and Components you are to certify and/or furnish proof of the quality, authenticity, application or fitness or use of the items supplied. The SOW Section 3.1.3 Section C also states that you will ensure that Suspect/Counterfeit items, such as non-compliant shackles or fasteners with head marks shown on the S/CI fastener head mark list are not brought onto the Hanford Site.

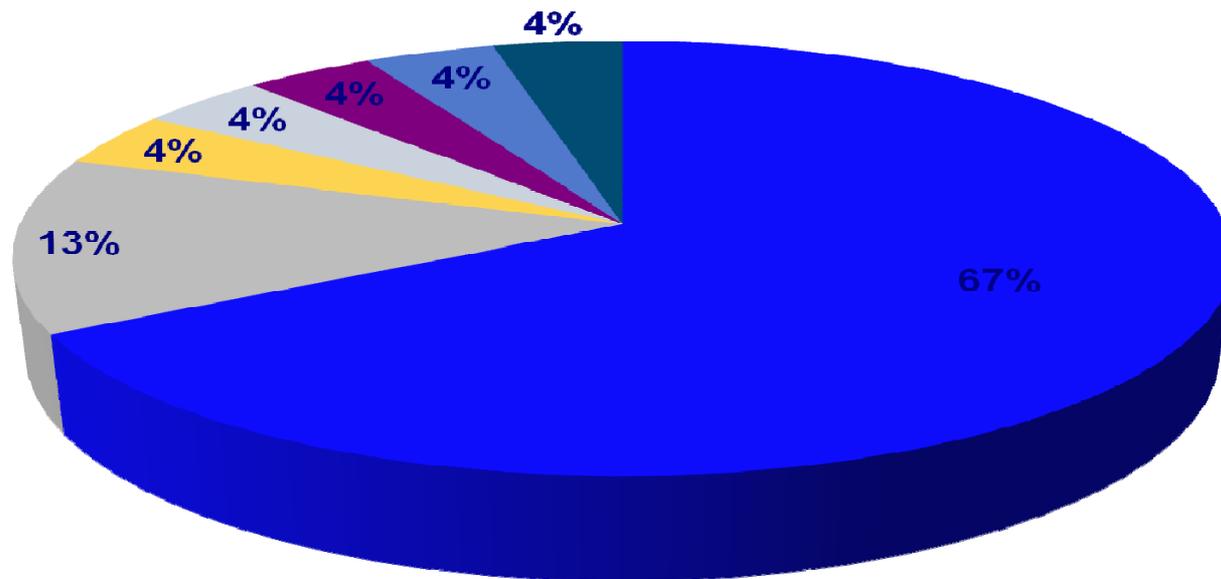
GPR001\_PRC Section 3.4 states that you will inspect all materials which are incorporated into work done on site. Also, you are required to enforce the inspection and suspect/counterfeit provisions on equipment rented from others. We have recently seen a number of suspect/counterfeit items showing up on third party equipment.

All equipment brought on site (rented or purchased) is subject to these provisions. Obvious suspect bolts or other hardware on rented equipment, trucks, rigs, or tool boxes may be inspected. CHPRC does not plan to disassemble trucks or equipment to locate suspect counterfeit components, but if we identify suspect/counterfeit items they will be confiscated. Let me know if you have any questions.

# The Results

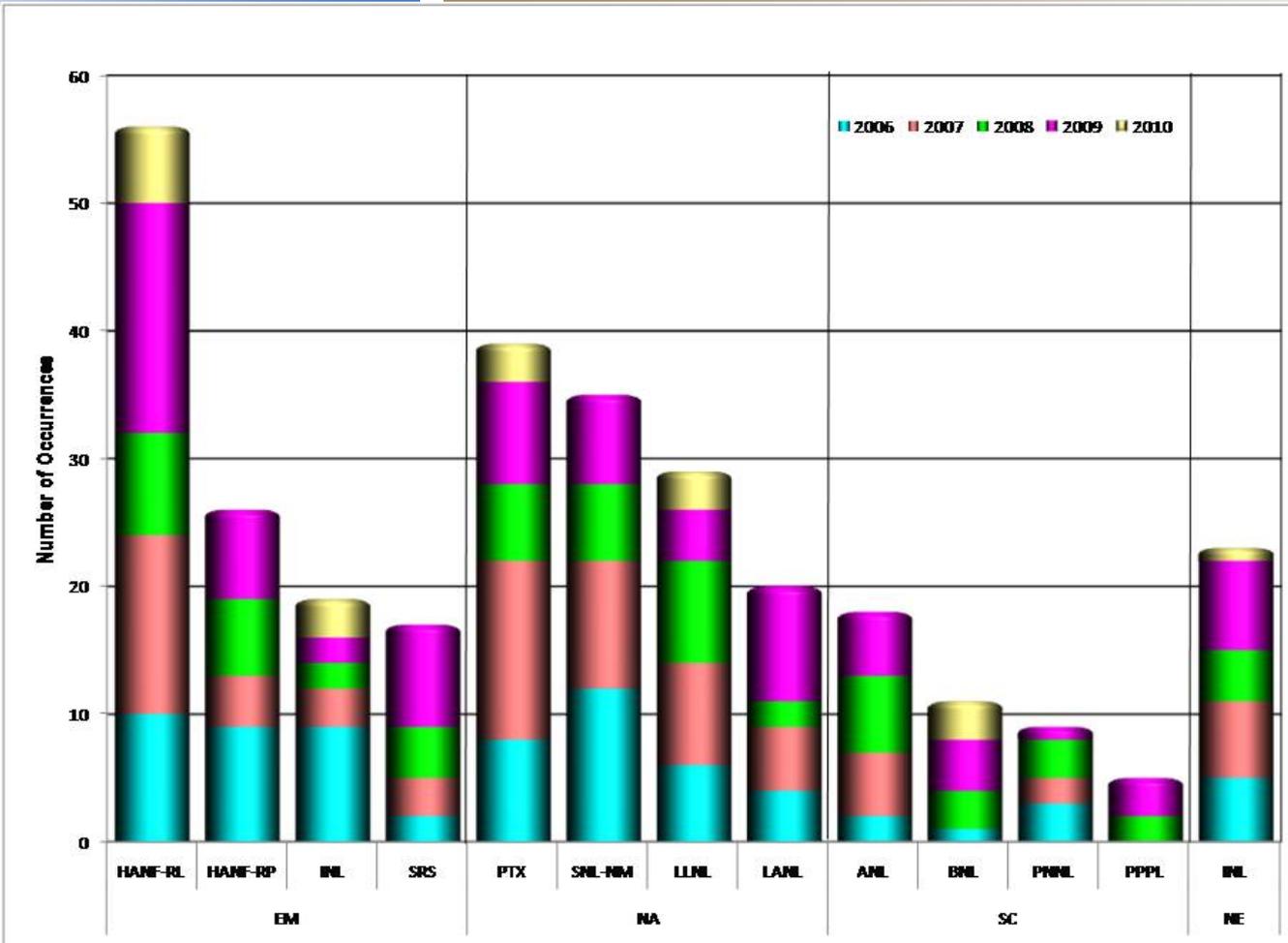
## Suspect/Counterfeit Parts Occurrences

■ *RL* ■ *ORP* ■ *ETTP* ■ *Idaho* ■ *Argonne* ■ *SRS* ■ *Paducah*



Data July 1 to December 22, 2009

# The Results



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# The Bottom Line

- Current approaches need to be reconsidered, augmented.
- Specific action is needed.
- S/CI problem is ubiquitous, we must keep current.

# Questions, Materials or Training

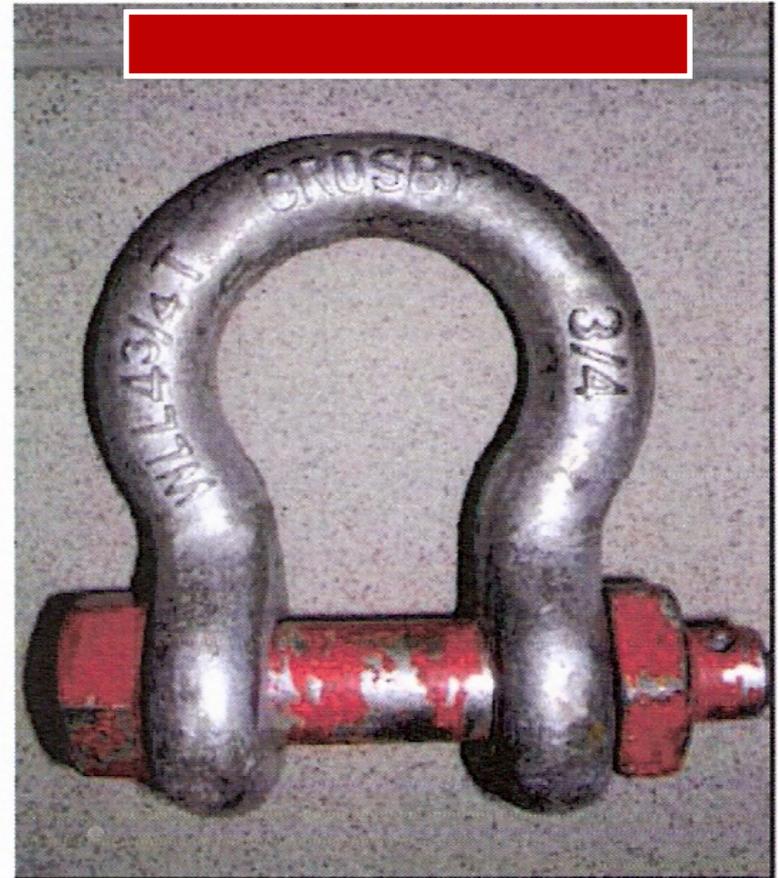
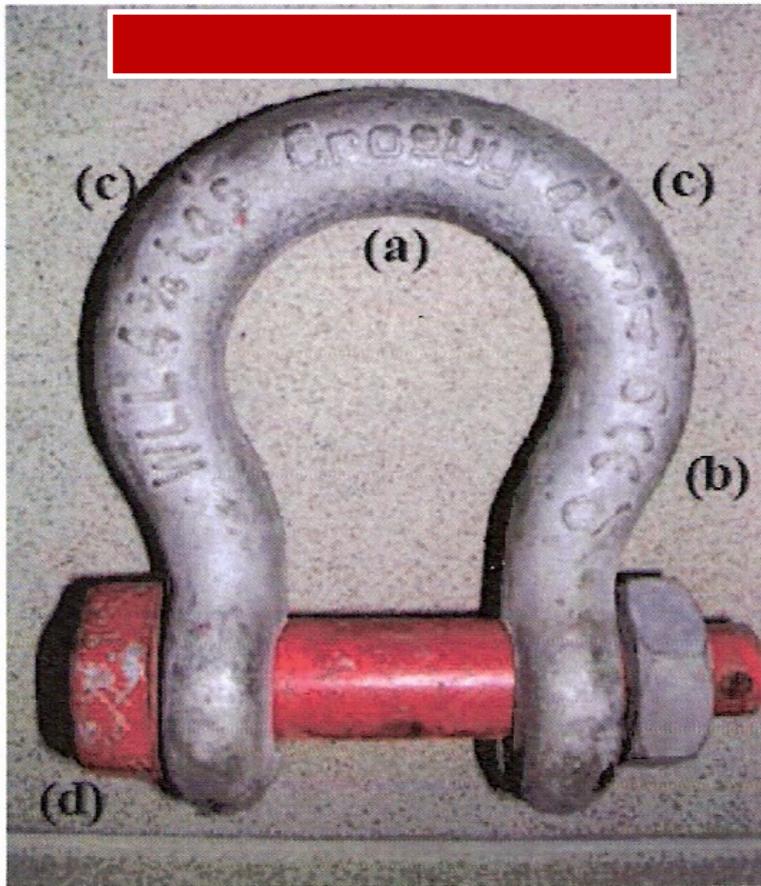
- Rick Warriner, CHPRC Quality Systems Manager
  - (509) 376-6956
- Jim Duda, Quality Assurance Engineer
  - (509) 376-0727
- Jim Bolm, Quality Assurance Engineer
  - (509) 373-1109



# Any Questions?



# Hoisting and Rigging Equipment



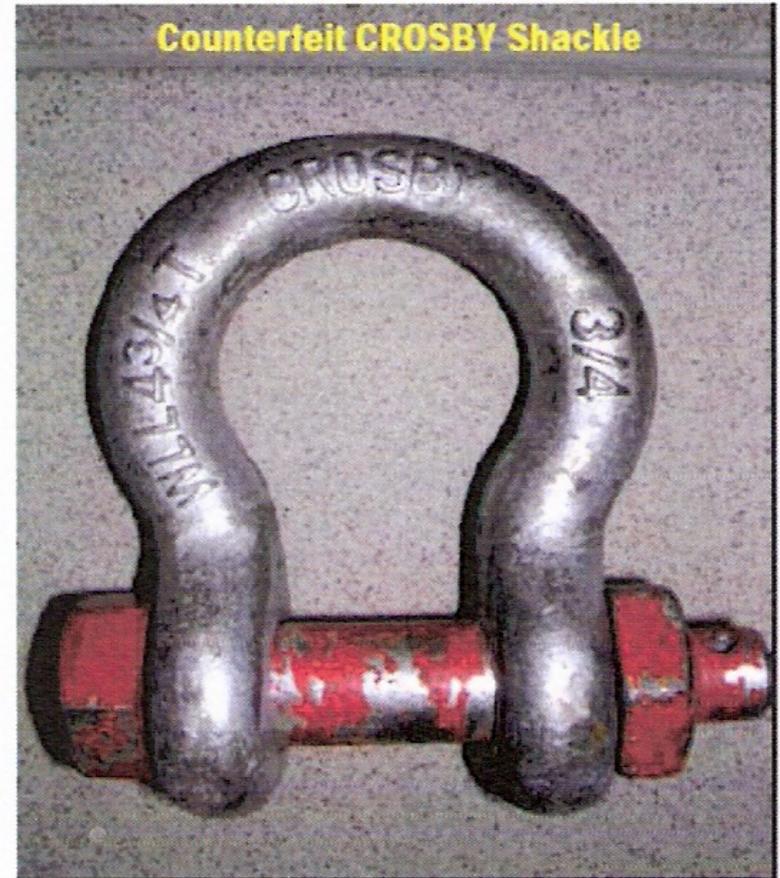
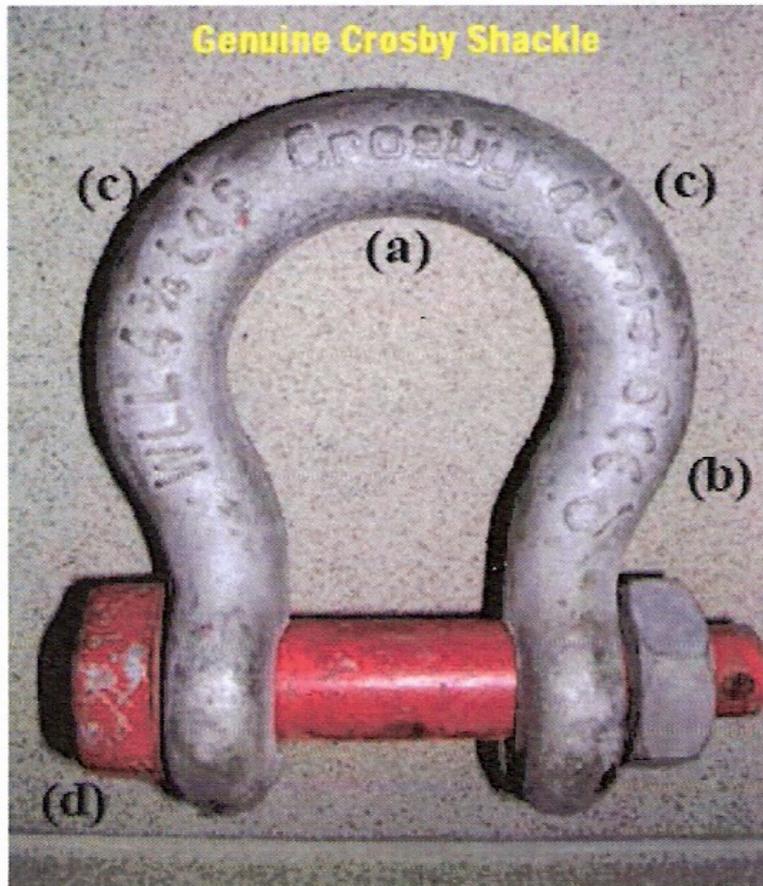
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# Hoisting and Rigging Equipment

(continued)





**MADE IN CHINA  
HECHO EN CHINA**

Distributed by  
Home Depot U.S.A., Inc.,  
2455 Paces Ferry Rd., N.W.  
Atlanta, GA 30339

640-435



### Description

1500 Watt Utility Heater includes convenient carry handle and 6' Power Cord. Instant-off tip-over safety switch. Instant-off overheat protection device. Heavy-Gauge Steel Construction. Quick Set Thermostat Controls Room Temperature - Easy Adjustment Control Knobs.

1500 Watts  
Instant off safety switches  
Easy adjustment control knobs  
6' power cord  
MFG Brand Name : Workforce  
MFG Model # : 640435  
MFG Part # : S640435

### Specifications

Assembled Depth (In Inches) : 10.43 in  
Assembled Height (In Inches) : 15.16 in  
Assembled Weight (In LBS) : 7.27 lb  
Assembled Width (In Inches) : 8.86 in  
Automatic Shut-off : Yes  
BTU Heat Rating : 5200 Btu/h  
Depth : 8.86 in  
ETL Safety Listing : Yes  
Fuel Type : Electric  
Heater Power Rating : 1500 W  
Heater Type : Other  
Heating Area : 15 ft<sup>2</sup>  
Remote Control : No  
Safety Listing : Yes



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1969



1991-2003



2010



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# Tungsten Anyone?



<p>1 </p> <p>2 LISTED</p> <p>3 CLASS 2 POWER SUPPLY</p> <p>4 #####</p>	<p>1: UL trademark</p> <p>2: "LISTED" in capital letters</p> <p>3: Product identity (optional for molded Marks)</p> <p>4: Control or issue number</p>
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Pre-1997 style



Bolder style



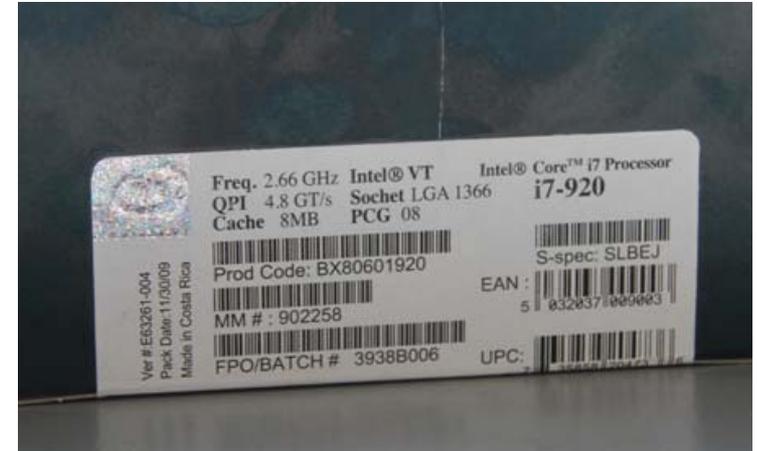


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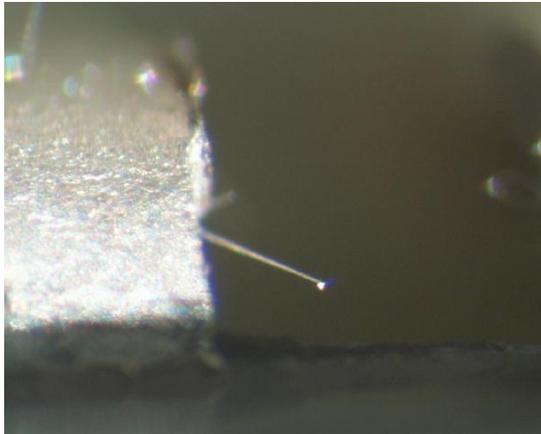
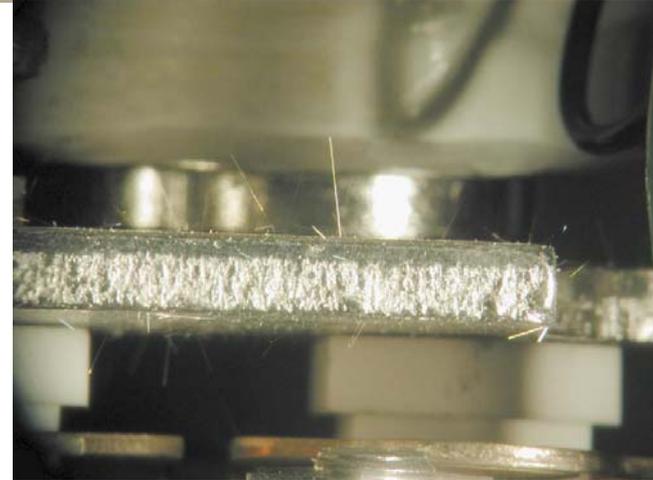
# Software and Electronics



# Software and Electronics (continued)



# Tin Whiskers



# Zinc Whiskers

