



Fraud Detection Awareness for Counterfeit Parts and Documents



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Presentation Topics



- Counterfeiting, its nature, growth and safety risks
- Attributes of items that make them most vulnerable to misrepresentation
- Types of S/CIs discovered at DOE sites
- Forms that S/CIs can take
- DOE's S/CI process goals
- Awareness manual highlights



Counterfeiting in Perspective



- Athletic equipment
 - Clothes, shoes and accessories
 - Music and movies
 - Antique furniture
 - Computer software
 - Cat food
 - Auto brakes, steering assemblies
 - Aircraft engines, landing gear
 - Medicines
 - Nuclear facility parts and components
- Increasing risk
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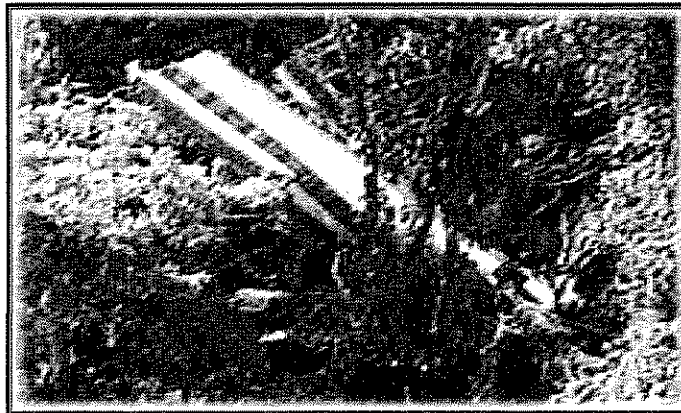
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Unapproved Components, Unauthorized Salvage



Crash scene of American Airlines Flt. 965
in the mountains of Columbia – December 1995



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Counterfeiting in Perspective



- Negatively impacts safety
- Damages the economy
- Victimizes legitimate manufacturers and suppliers
- Causes loss of customer confidence
- Compounds the product liability issue

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Counterfeit vs. Suspect vs. Defective



Some quick definitions for this session:

- **Counterfeit Items** – *Hard evidence* to support an intent to misrepresent or to defraud
- **Suspect Items** – *Indications* of an intent to misrepresent or to defraud
- **Defective Items** – Failure to perform as expected

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In Term of Dollars



- What do you think the reported impact due to counterfeiting was to the United States in 1994?
 - 1. 1 Billion
 - 2. 5 Billion
 - 3. 10 Billion
 - 4. 20 Billion
 - 5. 30 Billion
- How about in 1999 in the U.S.?
- How about in 2006 worldwide?

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Impact on the United States



- **Counterfeiting increased 3000%+ from 1994 to 2006**
 - \$20 Billion in 1994
 - \$200 Billion in 1999
 - \$600+ Billion in 2006 (worldwide)
 - *World Customs Organizations*
- **~7 % of all products world wide are counterfeit**
- **There is no sign that the impact is going to decrease anytime soon. In fact the indications are that the problem is going to increase more.**

Keyword Search: counterfeit parts/items/components, unapproved parts, bogus parts, fake

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Why Is Counterfeiting Growing?



- Money and its uses
- Links to organized crime
- Minimal risk of prosecution
- Internet provides enhanced opportunities
- Internal push for “faster and cheaper”

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Current Trends in Government & Industry Create Problems



- Expedited procurement processes
 - Credit card systems
 - E-Commerce
- Quality checks being eliminated
 - Budget cuts reduce checks and balances
 - End user becomes quality inspector

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Counterfeit Items Discovered at DOE Sites



- Fasteners (bolts brackets) > 70% of S/CIs
- Ratchet straps/tie down straps
- Refurbished molded-case circuit breakers
- Transformers, fuses, resistors, switch gear
- Metal struts
- Pipe components, fittings flanges, valves
- Material and testing certification



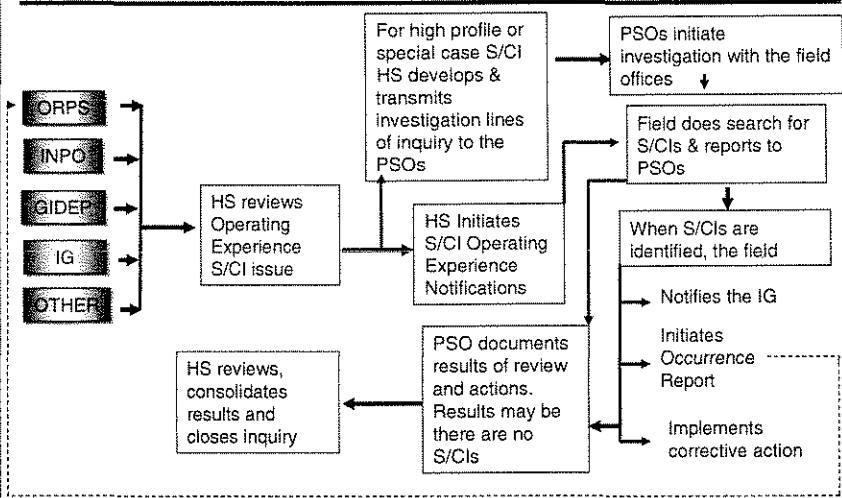
S/CI Process Goals



- Ensure installed items and components meet intended function and operability requirements
- Ensure that S/CI are quickly identified
- Work toward eliminating S/CI from DOE Operations



S/C-DI Process Flow Chart



Sharing S/C-DI Information



- Safety Alerts/ Bulletins/ Advisories
- Data Collection Sheets

SCI-DI Website:

<http://www.hss.energy.gov/csa/csp/sci/>



HSS Responsibilities for Implementing the S/C-DI Process



- Screen data sources
- Distribute operating experience notices
- Develop lines of inquiry
- Request PSOs direct field element investigations
- Evaluate results of field investigations
- Do trending and analysis for S/C-DIs



Role of the PSOs



- Provide guidance to the field on S/CIs
- Document results of field investigations
- Verify the field's S/CI corrective actions are appropriate



Role of DOE Field Management



- Take actions required by Alerts & Bulletins
- Investigate/report to PSO on special S/C-DI
- Ensure S/CI requirements flow down to contractor
- Notify the local IG – as per local arrangement
- Ensure contractor reports corrective actions



Role of the Operating Contractor Management



- Assure :
 - Personnel are trained & competent
 - Use of qualified vendors (procurement)
 - "Use as is" or "repair determinations are appropriately evaluated
 - S/CIs are identified before they enter operations
 - SCI requirements flow down to the subcontractors
- Document identified S/C-DIs via ORPS
- Notify the local IG – as per local arrangement
- Take corrective action(s)



Role of the Crafts in S/CI



Handling parts that don't look right?

- Item not packaged as usual from supplier
- Parts are not new
- Different type parts in same batch
- Painting, grinding, polishing not normal



STOP and notify your supervisor



Awareness Manual



- **Background Information**
- **Contacts**
- **SCI Process/Directive/References**
- **DOE SCI & LL Websites**
- **Fasteners/Headmark List**
- **Definitions**
- **Other Component Indicators**
- **Photos of SCI**



DOE's Manufacturers' Headmark List



Headmark List

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

Grade 5		Grade 8	
MARK	MANUFACTURER	MARK	MANUFACTURER
J	John Iner (TW)	KS	Kowaka Kogyo (JP)
Grade 8 Fasteners with the Following Manufacturers' Headmarks:			
A	Aash Mig (JP)	KS	Kowaka Kogyo (JP)
NP	Nippon Fasteners (JP)	KT	Tama LSS (JP)
HI	Hinomoto Metal (JP)	FM	Fukushima Co of Japan (JP)
M	Mitsubishi Heavy (JP)	KV	Kyushu Mig (JP)
MS	Mitsubishi Kogyo (JP)	J	John Iner (TW)
Grade 8.2 Fasteners with the Following Manufacturers' Headmarks:			
Hollow Triangle		Incheco (CA TW JP YU) (Greater than US Inch size)	
S	Saiki (JP)	SW	Swyde (JP)
Grade A326 Fasteners (Bennet Denver Target Only) with the Following Headmarks:			
Type 1	KS	KS	Kowaka Kogyo (JP)
Type 2	AS26 KS	KS	Kowaka Kogyo (JP)
Type 3			



Product Fraud Attributes



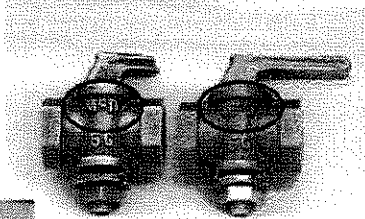
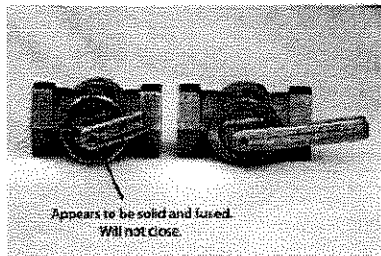
- Misrepresentation
- Substitution
- Falsification of documentation
- Remarking
- Repackaging
- Knockoffs – Counterfeits



Misrepresentation



- **McDonald Valves**



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Misrepresentation



- Product not evaluated by UL and bears a counterfeit UL Mark for the US and Canada



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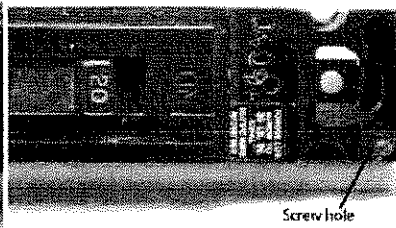
Substitution



- Breakers sold as “new,” but are used or reconditioned



Sold as new by supplier
Indications of being used or refurbished
Label worn and torn



Screw hole
tampered with

Potting material in bottom screw hole tampered with;
should be smooth and even with surface of case
Appears dirty and worn
Represented as being new in the condition above

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Falsified Documents



- M&M Aerospace
- Western Testing
- Hunt Valves
- Temperform

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Example of Flagrant Counterfeiting that affected DOE: Temperform USA



- Falsified heat treat and inspection process
- False certifications for aluminum alloy parts
- Affected DOD, NASA and commercial aircraft
- Comprised components commonly used in 14 Boeing aircraft and >25 major DOD/NASA programs
- Product found at two DOE sites
- Costs for inspection, retesting, repair, replacement

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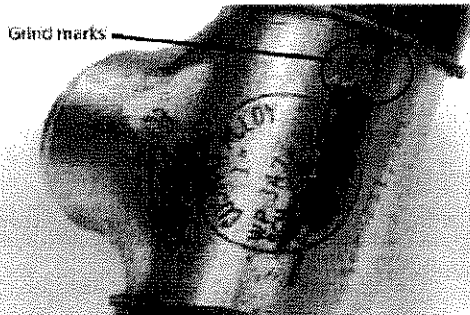
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Remarking



- Stainless Steel "T" Weldalet – grind marks where information was removed and new information stamped



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Production of Knock-Offs



- DURACELL® copyright infringement (name and/or black and gold copper top)



Authentic DURACELL® battery on the left. Counterfeit DURACELL® batteries on the right sport the name, the stamp, the shape as the authentic batteries.



On the left - Examples of DURACELL clones simulating unbranded DURACELL coils (note sword-like logos). Some have fancy casings that crush easily under pressure by hand. The counterfeit batteries on the right the batteries are spooled differently but constitute trademark infringement (black and gold copper top).

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Products Most Vulnerable to Misrepresentation



Items:

- Of low cost & high turnover rate
- Used in critical and non-critical applications
- Easily copied by secondary market suppliers
- Can by-pass supplier and drop ship to customers
- Substantially lower priced than market value

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Common Counterfeiter Tactics



- “Salting” in small % of counterfeit items w/ good
- Placing foreign parts in domestic label boxes
- Mixing used items w/genuine new items
- Grinding old ID marks & stamping new marks
- Changing the documentation
- Painting to mask evidence of wear or falsify the identify of items (use of trademark colors)



Common Indicators of S/CIs in General



- Item configuration is inconsistent
- Poor fit of assembled items
- Metallic items pitted or corroded
- Hand tool marks
- Dissimilar parts evident
- Wear marks or scratches on external surfaces
- Hand painting (touch up)
- Recent polishing of non-ferrous metals
- Handmade parts
- Casting markings ground off & re-stamped
- Not factory authorized supplier
- Inconsistent dimensions with purchase order



S/CI Manufacturer Markings/Grademarks



- “J” & “KS” manufacturer markings still popping up on fasteners
- Item still remains S/CI regardless of position of suspect manufacturer markings (e.g., centered vs. off to the side)
- If you cannot trace the item back to its origins, item remains, at minimum, suspect

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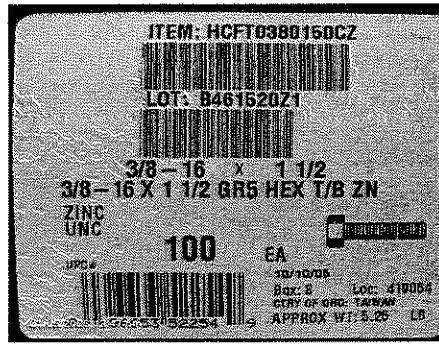
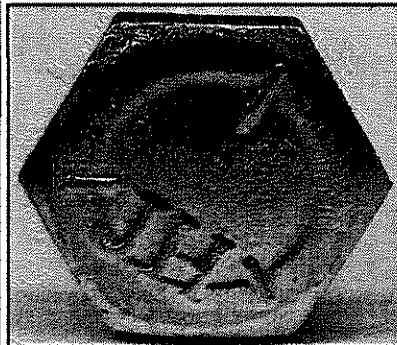
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Suspect/Counterfeit-Defective Items



JH Headmark found at West Valley Dec 2005



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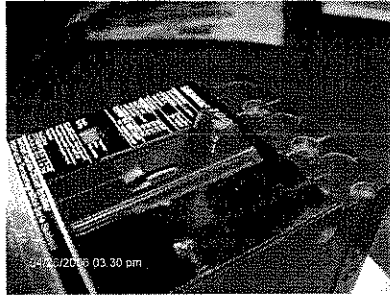
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S/C-DI Trends



- **Circuit Breakers**



DCS 1068

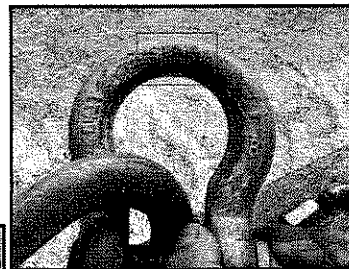
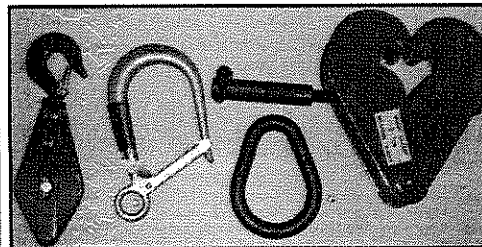


S/C-DI Trends



- **Hoisting and Rigging**

DCS 1085 TJ-Lab



DCS 1104 SNL

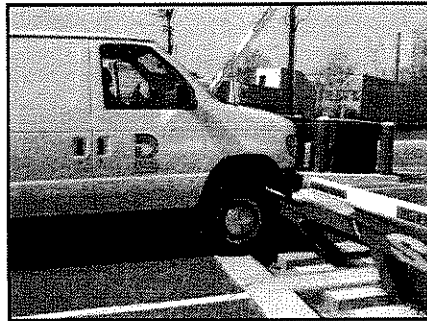


S/C-DI Trends



▪ Faulty vehicle barriers

- ES&H Safety Bulletin 2005-2/DCS 887 - ORPS, DCSs 909/936 – INPO



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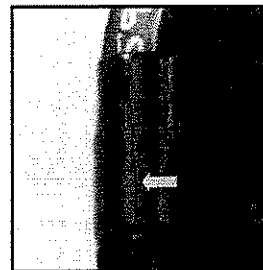
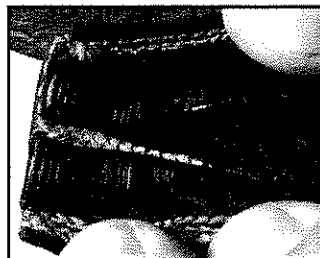


S/C-DI Trends



▪ Faulty Respirator – Respirator Components

- Defective Scott airline hose [Safety Bulletin 2005-5/DCS 883]
- Defective facemask lens frame [DCS 894]
- MSA Ultra Twin Filter Housings failure [DCS 922], MSA respirators falling apart [DCS 924]



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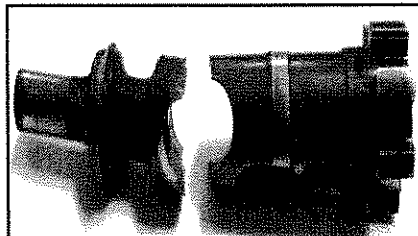
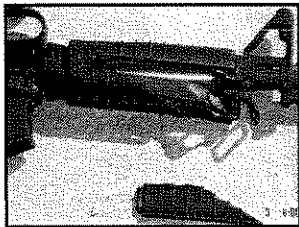
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S/C-DI Trends



- Faulty Security Weapons, Ammunition
 - Ruptured Bushmaster Rifle, DCS 888
 - Broken Bushmaster Rifle Bolt, DCS 899/876 pictured below
 - Fragmenting Ammo, DCS 870
 - Defective Weapons Assembly Protective Blanket, DCS 920



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When S/CIs are Discovered



- Presume the item(s) to be defective
- Tag, hold, process as non-conformance
- Follow the S/CI procedure
- Conduct an engineering evaluation
- Do not return the item(s) to the supplier
- Do not contact the supplier

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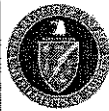
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The Value of Engineering Involvement in Procurement



- Procurement
 - Develop technical specifications
 - Determine critical characteristics
 - Verify suppliers' technical performance
- Product acceptance
 - Determine testing requirements & methods
 - Evaluate acceptance test results
 - Disposition S/CIs
 - Review technical changes & deviations
 - Evaluate acceptability of suspected items



Inspection Techniques to Screen for Misrepresented Items



- Inspect cartons, boxes, packaging and packing materials
- Inspect carton and box labels
- Inspect nameplates or identification tags
- Inspect multiple items of an identical type for differences in appearance



Indicators of Falsified Documentation



- Unsigned or missing documents
- Indeterminate document approver
- Inconsistent technical data
- Unclear document traceability
- Undelivered or unusual documentation
- Unclear documentation
- Page count conflicts
- Product recall



Indications of S/CI from Visual Manufacturing Quality



- Poor fit
- Inconsistent configuration
- Increased dimensions
- Bolt head scoring
- Loose or missing fasteners
- Marring, tool impressions
- Heat discoloration
- Poor cleanliness
- Dissimilar items



Indications that Mechanical, Electrical or Electromechanical Parts Have Been Used



- Wear marks, scratches
- Evidence of repainting
- Pitting or corrosion of metallic surfaces
- Evidence of metallic surface refinishing
- Exterior evidence of repairs
- Connection wires of different lengths

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Fraud-Prevention Program Elements



- Heighten the consequences of committing fraud
- Actively enforce infractions.
- Establish contract language with teeth - e.g.,
"If suspect/counterfeit parts are furnished under this agreement and are found on the (site), such items shall be impounded by (site). The Seller shall promptly replace such items with items acceptable to the (site) and the Seller shall be liable for all costs relating to impoundment, removal, and replacement. (Site) may turn such items over to (US Office of Inspector General, FBI, etc.) for investigation and reserves the right withhold payment for the suspect items pending the results of the investigation."
- Effective corporate implementation

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When it Comes to S/CI Issues- are We....



Part of the Solution or Part of the Problem?

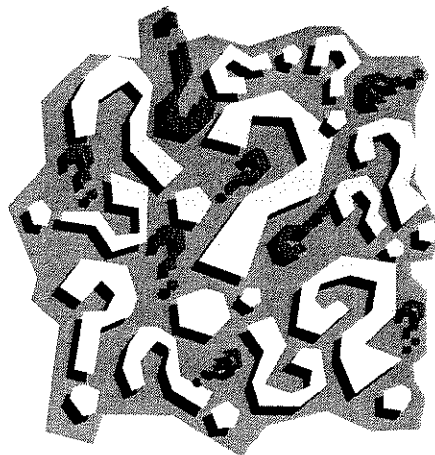
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| <ul style="list-style-type: none">▪ At risk for S/CIs▪ Awareness▪ Process in place▪ Collective responsibility▪ Individual responsibility▪ Communication | <ul style="list-style-type: none">▪ No counterfeit here▪ No process, no awareness▪ It is not our problem▪ Counterfeiting is not my problem▪ No training, no interest, ignorance prevails |
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Questions or Comments?



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