



Creating a Secure Chain of Custody

What is a Chain of Custody?

1. A chain of custody is established when two parties have a verifiable means to interrogate a package or enclosure as original and unopened when accepting the trailer or parcel from one another.
2. A secure chain of custody further verifies the integrity of the enclosure as having the original undamaged seal prior to being handed off.
3. A seal therefore used to establish a chain of custody must enable the verifier to visually interrogate the enclosure for penetration, with a known premise, which can include any information known to the inspector about the parcel, such as a number or hidden tamper evident feature, and attest that the criteria is met prior to accepting the item in good order.
4. Any seal type used in establishing a compliant chain of custody needs to be applied post stuffing or screening and serve as both an integrity seal and theft deterrent component.



The Validation Dilemma

- In any inspection protocol the ability to verify and maintain security is paramount to the mission.
- WHY SPEND THE TIME TO SCREEN CARGO WHEN YOU FAIL TO MEET THE REQUIREMENTS OF INSPECTION?
- No one can successfully insure a system where almost no packaging consistency exists, without a means by which any inspector, with or without training or a comparative basis, can make a decision as to possible tampering, manipulation or contamination of the sealed parcel.
- Tamper Evident Technology (TET), specifically security tapes and seals used as a means to insure that packages, cartons, containers, trucks and trailers have not been surreptitiously opened, is an essential component in cargo security.



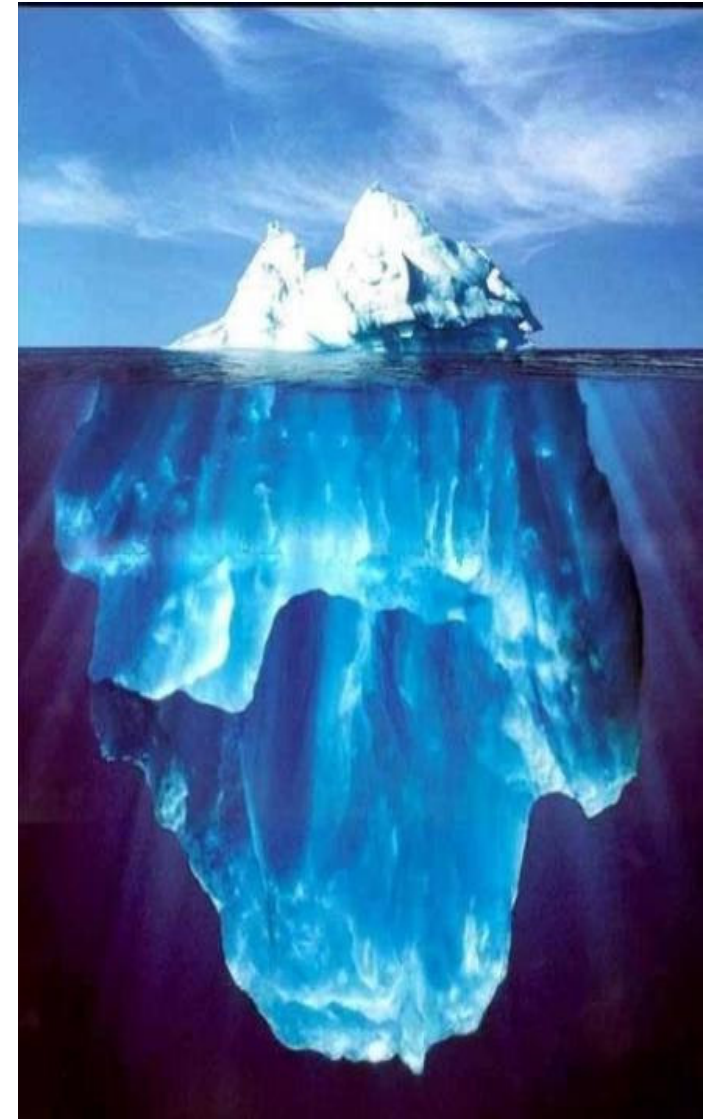
Seals Require Secure Application, Storage and Destruction

- Seals for cargo, containers or trucks need to be considered a vulnerable component of any protocol and require protection.
- Seals must be received and stored in a secure area and not be able to be accessed by more than a select group of people.
- Self adhesive seals for cargo are best provided in rolls so that a bottom product cannot be used out of sequence to replace a tampered seal.
- Receiving parties should destroy or maintain expended seals if applicable to their system. This strengthens the anti-theft component of cargo inspection.
- Breached seals and their containers should not be touched and observers should await forensic conformation before the parcel is opened.



Cargo Terrorism is Serious Business

- **BY ADOPTING AN INDICATIVE SECURITY SEAL PRODUCT AND PROCESS, CARGO CAN BE INHERENTLY MORE VERIFIABLY SECURE WHILE UNATTENDED, REGARDLESS OF THE INSPECTOR.**
- **CARGO THEFT IN OVER THE ROAD FREIGHT IS SIGNIFICANT, THESE INSPECTION PROCEDURES WILL COLLATERALLY BENEFIT SHIPPERS BY REDUCING THEFT SIGNIFICANTLY.**
- **EFFECTIVE MARKETING OF THESE BENEFITS WILL DEFRAY SOME OF THE EXTRA COSTS.**
- **FAILURE TO RECOGNIZE THE IMPACT THAT AN ACT OF CARGO TERRORISM WILL HAVE ON OUR NATION IS NAÏVE. THE SUPPLY CHAIN CAN ONLY BE SECURE IF A CONSISTENT SYSTEM IS EMPLOYED TO INSURE SECURITY AND PHYSICAL INTEGRITY FOR INSPECTED CARGO.**



IN ORDER TO PLAN FOR SECURITY YOU MUST KNOW WHO THE ADVERSARY IS

PEOPLE ARE COMPLEX AND THEIR MOTIVATIONS DIFFER.
TERRORISTS ARE BOTH DETERMINED AND CLEVER.
BY SPECIFYING A CONSISTENTLY USED AND APPROPRIATE
DETERRENT TECHNOLOGY THE RISK CAN REDUCED.



TERRORIST WITH
KNOWLEDGE
EXPERT HAS CORRECT TOOLS
INTERNAL TRUSTED PERSON
EXTERNAL DETERMINED
COMPLICITY

WHY SPECIFY A GENERIC SECURITY MATERIAL SINCE THAT OPENS
THE DOOR TO MORE POTENTIAL ADVERSARIES!



SEAL TYPES



BARRIER SEALS: LOCKS, LOCKING BARS, BOLTS, STEEL CABLES, OR ANY SEAL TYPE THAT OFFERS A BARRIER TO ENTRY TO THE TERRORIST OR THIEF

INDICATIVE SEALS: SELF VOIDING TAPES AND LABEL TYPE SEALS, PLASTIC LOOPS AND CABLES

BUILT IN AND ELECTRONIC SEALS: GPS, SENTINEL SEALS, DOWN LOADABLE LOCKS, ELECTRONIC SEALS

FIBER OPTIC SEALS: CLOSED LOOP CABLES, RARELY USED IN COMMERCIAL CARGO

LOCKS THAT CANNOT BE AUDITED ARE NOT SEALS



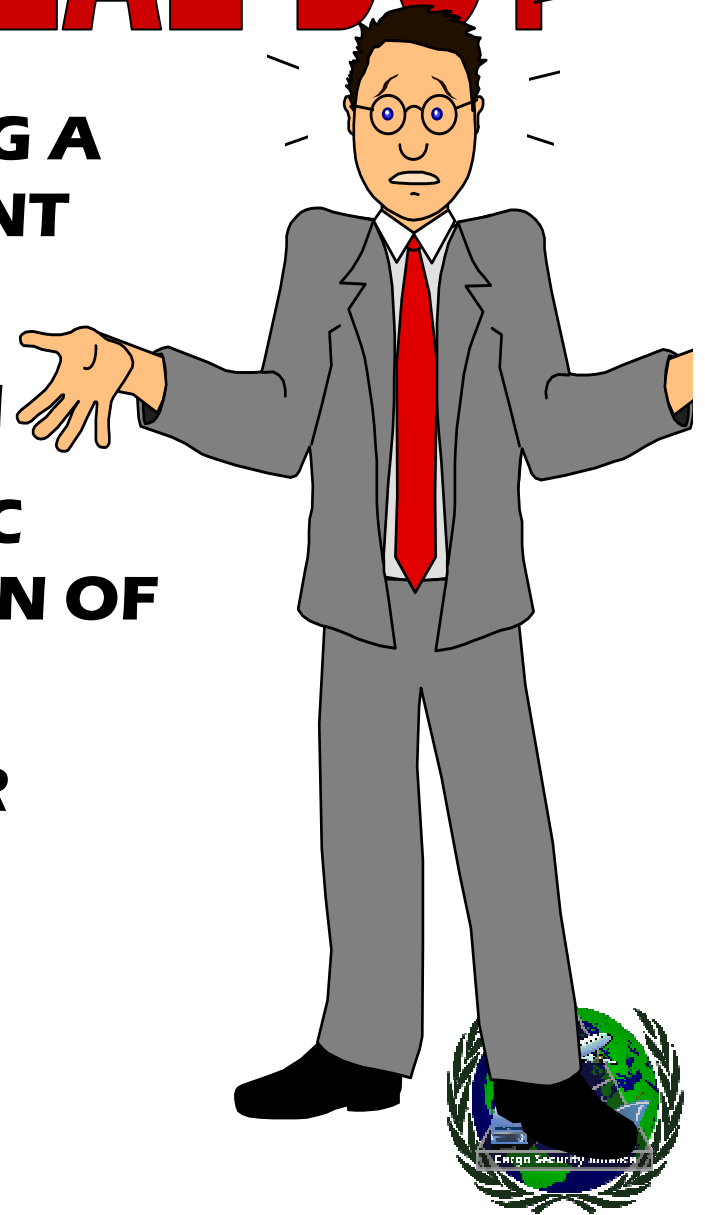
WHAT DOES A SEAL DO?

OFFERS PROTECTION BY CREATING A VISUAL BARRIER AND A DETERRENT RISK

HELPS TO IDENTIFY PENETRATION

PROVIDES A VISUAL AND NUMERIC BASIS FOR TRACKING AND A CHAIN OF CUSTODY TEMPLATE

HELPS TO DETERMINE CONTAINER IDENTITY AND AUTHENTICITY



A Cargo Seal Should Be . . .

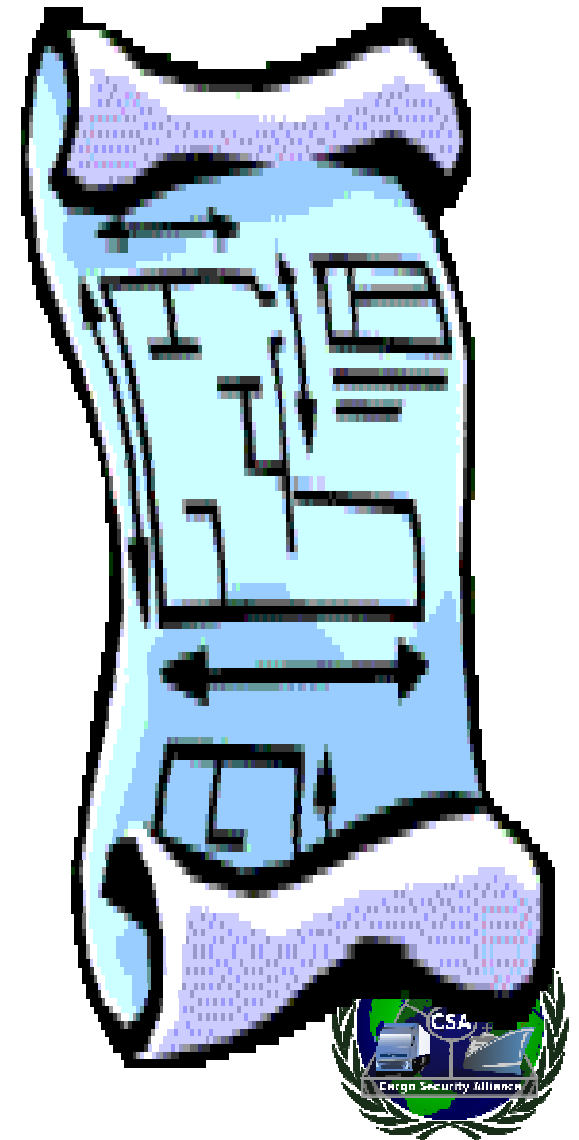
**TASK APPROPRIATE AND
SUFFICIENTLY ROBUST**

**EASY TO USE, SIMPLE TO
INSPECT, APPLY AND REMOVE**

**NON SUBJECTIVE AND MULTI
DIMENSIONED WITH SOME
REDUNDANT CHARACTERISTICS**

**OVERT, INDIGENOUS,
CONSPICUOUS AND CLEARLY
INDICATING RISK**

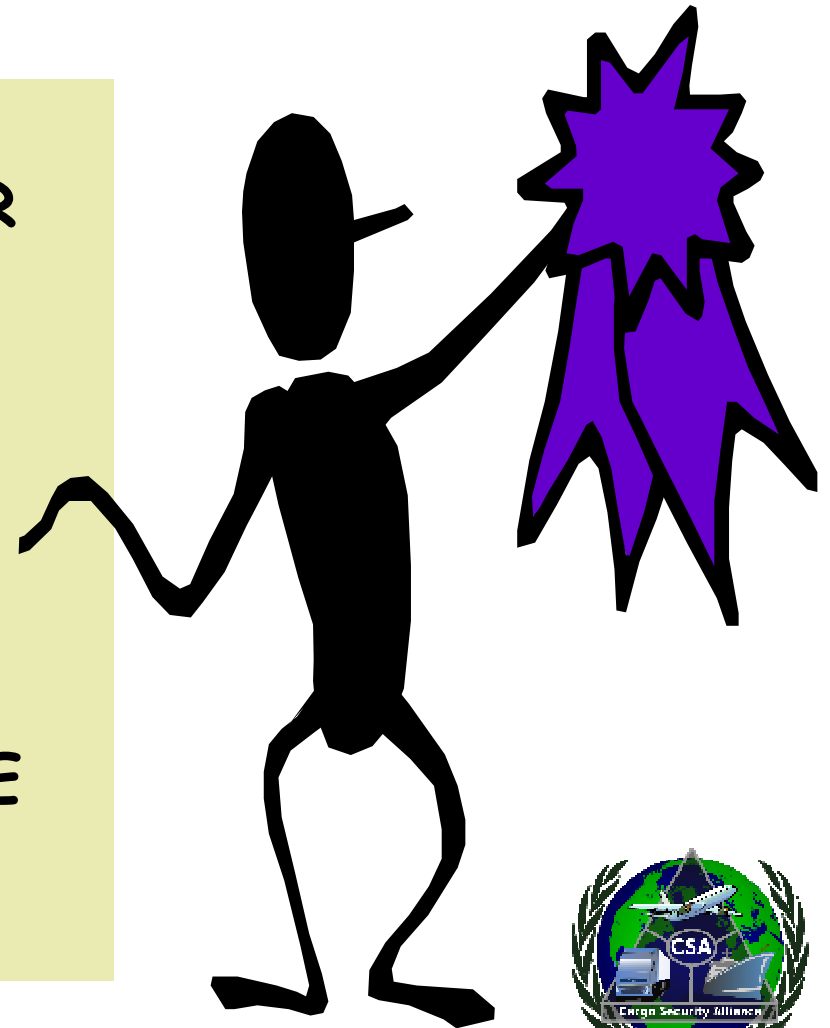
FEATURE RICH WHERE POSSIBLE





SECURITY THAT WORKS

1. CLARITY, SPECIFICITY, SIMPLICITY AND THE FEWER CHANGES TO NORMAL BEHAVIORS THE BETTER.
2. VISUAL TECHNIQUES RATHER THAN FORENSICS.
3. EASE OF TRAINING.
4. UNDERSTANDING OF THE OBJECTIVES BY EVERYONE USING THE SYSTEM.



Conclusions

Cargo security is essential for a safe supply chain.

With industry best practices and collaborative supply chain management techniques cargo can be moved efficiently and securely, reducing overall costs and expediting the flow of commerce.

Security requires the use of Tamper Evident Seals to insure cargo and enclosure integrity by enabling visual assessments of cargo and enclosures everywhere in the supply chain.

The sacrifice of quality for cost in choosing a chain of custody technology can be the weak link in implementing the cargo security standards, leading needlessly to a major incident.

Chain of Custody can only be maintained if the method of transfer and containment is robust enough to meet the needs of the application.

