



Loaded risk – container fires and misdeclaration

IUMI Webinar 2 November 2017
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Head of Cargo Claims



Danger: sea - ship - environment - cargo



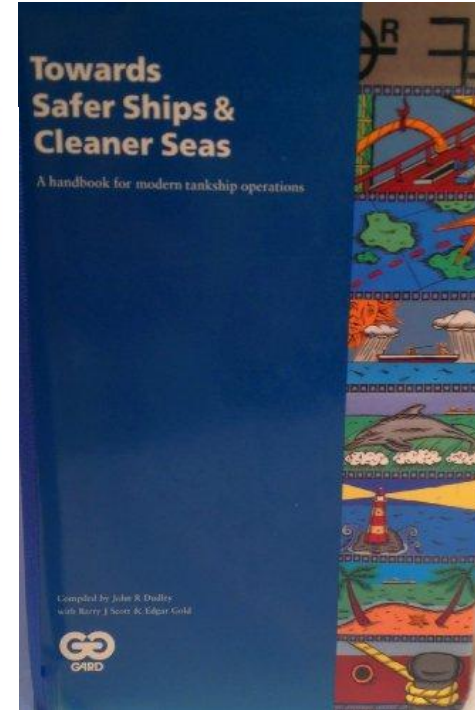
Dangerous liaisons

Thursday 16 March 2017, 00:01 by [Michael Grey](#)

There is every reason to believe that a very substantial number of the 36m boxes transported on the high seas contain undeclared dangerous goods



Flaminia shrouded in smoke: The vessel's mid-Atlantic fire killed four people.



Today's narrative – dangerous cargo

“Goods by their nature or character are, or reasonably appear likely to become, a danger to persons, property or the environment.”



*ICHCA submission to IMO
July 2017: "UNCTAD
calculates approx. 180m
TEU movements in 2016.
Assuming 60% equates to
actual CTUs, 50% of
those are laden, of
which 10% contain
declared dangerous
goods, then
approximately 5.4
million units annually
are packed with
dangerous goods"*

Loaded risk – container fires and misdeclaration

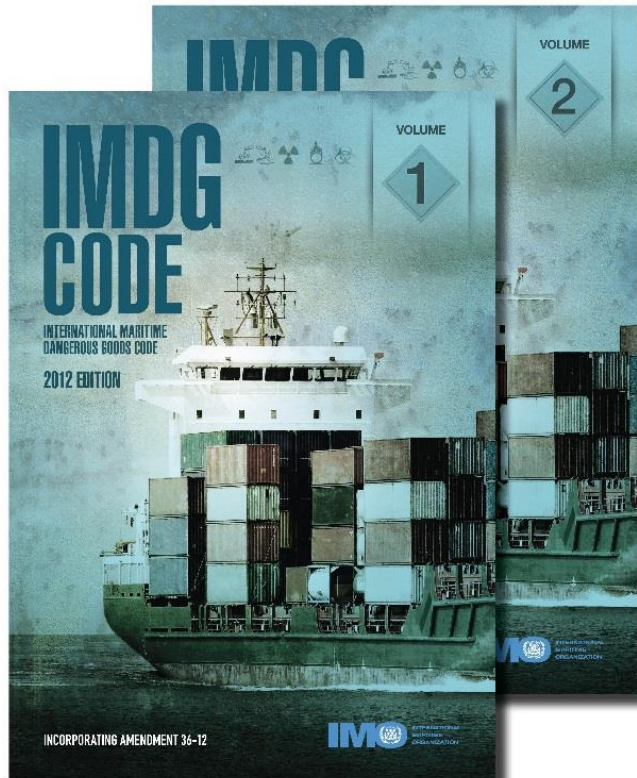
Key messages



- Container fires are increasingly likely and severe
- Risk mitigation is complex and deserves greater attention at a company and industry level
- Tackling cargo misdeclaration is a key challenge - it is a first line of defence to most container fires

Container fires occur

Despite mandatory IMDG code to manage the risks



Member Circular No. 7/2016

May 2016

New IG/CINS guidelines for the carriage of Calcium Hypochlorite in containers

Dear Sirs,

The International Group of P&I Clubs (IG) and the shipping line members of the Cargo Incident Notification System (CINS) have collaborated to produce a new set of guidelines for the carriage of Calcium Hypochlorite in containers. These new guidelines can essentially be considered "IMDG Code plus precautions" in that they include selected provisions from the IMDG Code plus additional precautions consistent with the science basis established in 1999 by consulting scientists advising the IG. These new guidelines replace the Frequently Asked Questions (FAQs) produced by the IG clubs in 2010.

What is the loaded risk ?

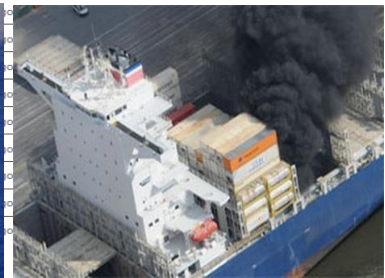
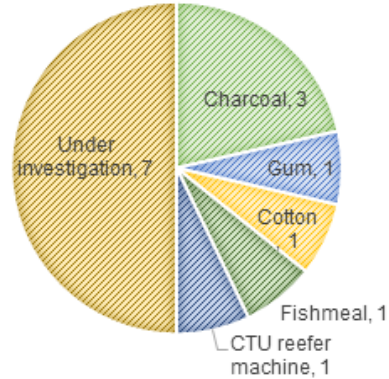
Severity	Medium	High	Critical
	Low	Medium	High
	Low	Low	Medium
	Likelihood		



Risk – likelihood of container fire

Cargo Incident Notification System

FIRES BY CARGO 01-08 2017



Risk – severity of harm

- Injury/death
- Environmental impact
- Liabilities and costs
 - Ship damage/total loss, loss of use
 - Salvage, GA, wreck removal
 - Cargo loss/damage
 - Time consuming/expensive litigation
 - Cargo waste disposal
- Business impact

"Due to the explosion four members of the team were injured, some critically, and one member was missing"



- *8000 m/t scrap*
- *350 m/t "hazardous" waste*
- *30,000 cbm contaminated FF water*
- *Total disposal cost over USD10m*

Container fires - risk mitigation

- Risk characteristics
 - What's actually occurring?
 - Where?
 - When?
 - Why?
 - How - behaviour upon occurrence?
- Risk mitigation issues
 - Severity & likelihood
 - Control weaknesses
 - Risk transfer – insurance/counter-party
 - Company and industry level



Container fires – risk characteristics

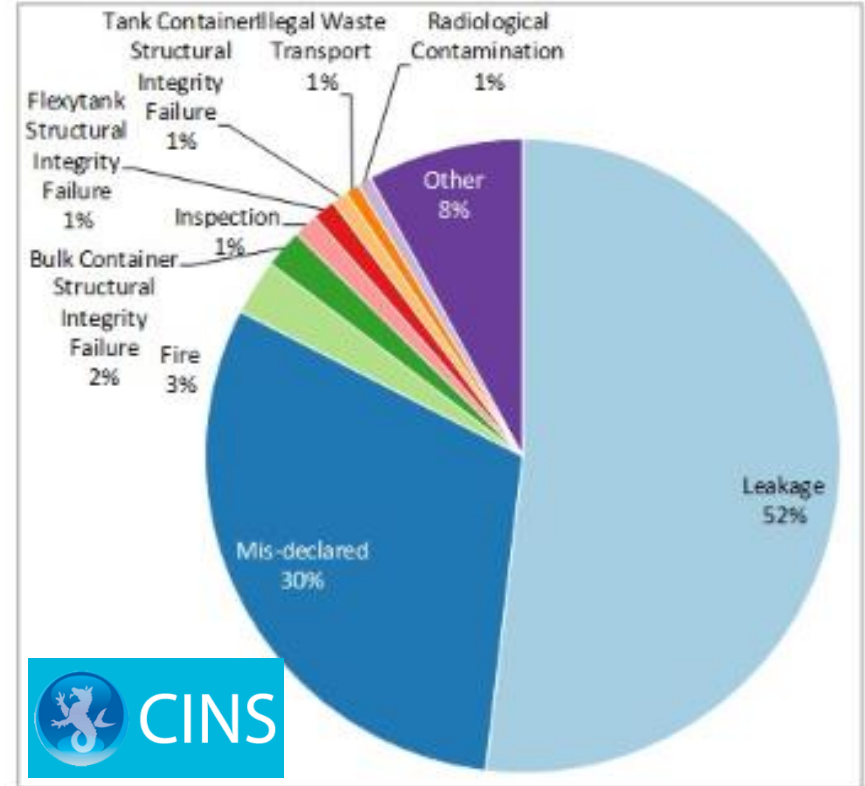
- What's happening – cargo misdeclaration
- Why – lack of policing
- Where are risks highest - from China/Asia
- When – occurring for some time and unlikely to change soon
- How is behavior upon occurrence – fast and catastrophic

Container fires – risk characteristics

Cargo misdeclaration



Chart 1: Analysis of Cargo Incident Type 2013 to 2015



Sig. Gard container fires 2014-17

Predominantly cargo misdeclaration

- 5 x suspected Calcium Hypochlorite misdeclared as “organic surface”; “calcium chloride”; “disinfectant”, “whitening agent”
- 1 x declared Calcium Hypochlorite
- 1 x “mobile phone accessories” (Li ion batteries not decl. as DG)
- 2 x “charcoal” not declared as DG
- 1 x “paints” not declared as DG
- 1 x “expandable polystyrene beads”
- 2 x unknown (1 household goods with aerosols not decl. as DG)

Cargo mis-declaration

Lack of policing - carriers must protect themselves

*Tianjin, August 2015, Over 165 people killed
Gov. report blamed **illegally stored hazardous materials***

2 In MSC.1/Circ.1442, as amended by MSC.1/Circ.1521, governments are urged to implement inspection programmes for Cargo Transport Units (CTUs) carrying dangerous goods and to report their findings to the Organization. The results have been duly submitted

6 The number of inspections performed has never exceeded 80,000, and currently represents something less than 4 per 100,000 packed containers moved.

17 It would appear that the inspection programme needs to be reconsidered. The following recommendations are made:

.1 while the substance of MSC.1/Circ.1442 applies to all cargo types packed in CTUs, the title appears to restrict application to cargo declared to be dangerous. It is recommended that the title be amended;

Container fires – risk characteristics

Behaviour : fast and catastrophic

- **6 minutes**
- **20 minutes**
- **27 minutes**



Container fires – risk mitigation issues

- Weaknesses in tackling misdeclaration
- Being alert and prepared is vital
- Risk transfer complexity
- Are ships equipped to cope?
- Tackling misdeclaration at industry level

Weaknesses in tackling mis-declaration

Container lines - banning is not a long term solution

IG/CINS Calcium Hypochlorite guidelines :

*"It is estimated that global production
...is about 400,000 tonnes per year*

*..there is an obvious desire to both
discourage mis-declaration by shippers and
to encourage shipping lines' confidence in
the carriage of properly declared Calcium
Hypochlorite under an acceptable method"*

Weaknesses in tackling mis-declaration

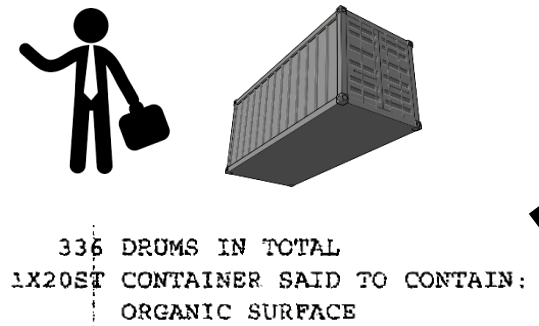
Container lines - sharing space

"In 2011 the Line created a search engine that now identifies in the order of 1,250 potential undeclared or misdeclared bookings each day"

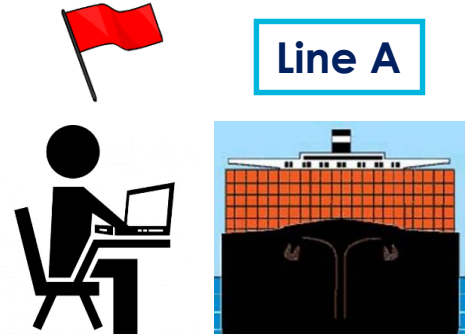
"Disturbingly, many bookings were simply withdrawn by the shipper; in all probability leading to a booking with a competitor line whose cargo management may be less advanced"

Weaknesses in tackling misdeclaration

Container lines - sharing space



NO BOOKING



CONFIRMED

Line B



AF signs deal with Line X which cuts 10-15% off time to book containers. AF said the system worked similar to online flight portal Skyscanner with live prices for container lines that can be selected immediately

Scale of the DG vetting challenge

- Volumes: 400m lithium ion batteries and over 15bn aerosols produced annually
- Fewer carriers vetting larger volumes
- E-Commerce: inferior/counterfeit products
- More recycled/used/waste goods
- More containers per ship: multiple misdeclarations

US Airforwarders Association:

*"It's like the **Wild West** where some companies...unwittingly sending hazardous material via air freight without the benefit of knowledgeable, trained shipping professionals"*



Mitigating container fire severity

Being alert & prepared is vital

"Firefighting is not the primary function of the crewmembers...for most crewmembers such a situation is a once-in-a-lifetime experience"

"The success of the fire-fighting effort was also attributed to a recent drill in which the crew members simulated a CH fire.."



"Further attempts at penetrating the container were made...placing fire nozzles inside and eventually containing the fire"

"No specific training in the use of container firefighting equipment is included in the mandatory shore-based crew training"

"The CO2 system failed...resulting in a near-explosion...which presented a serious risk to the crew ... Another consequence was that very little CO2 actually reached the cargo hold"

Mitigating container fire severity

Summon help immediately



Place of refuge - NIMBY

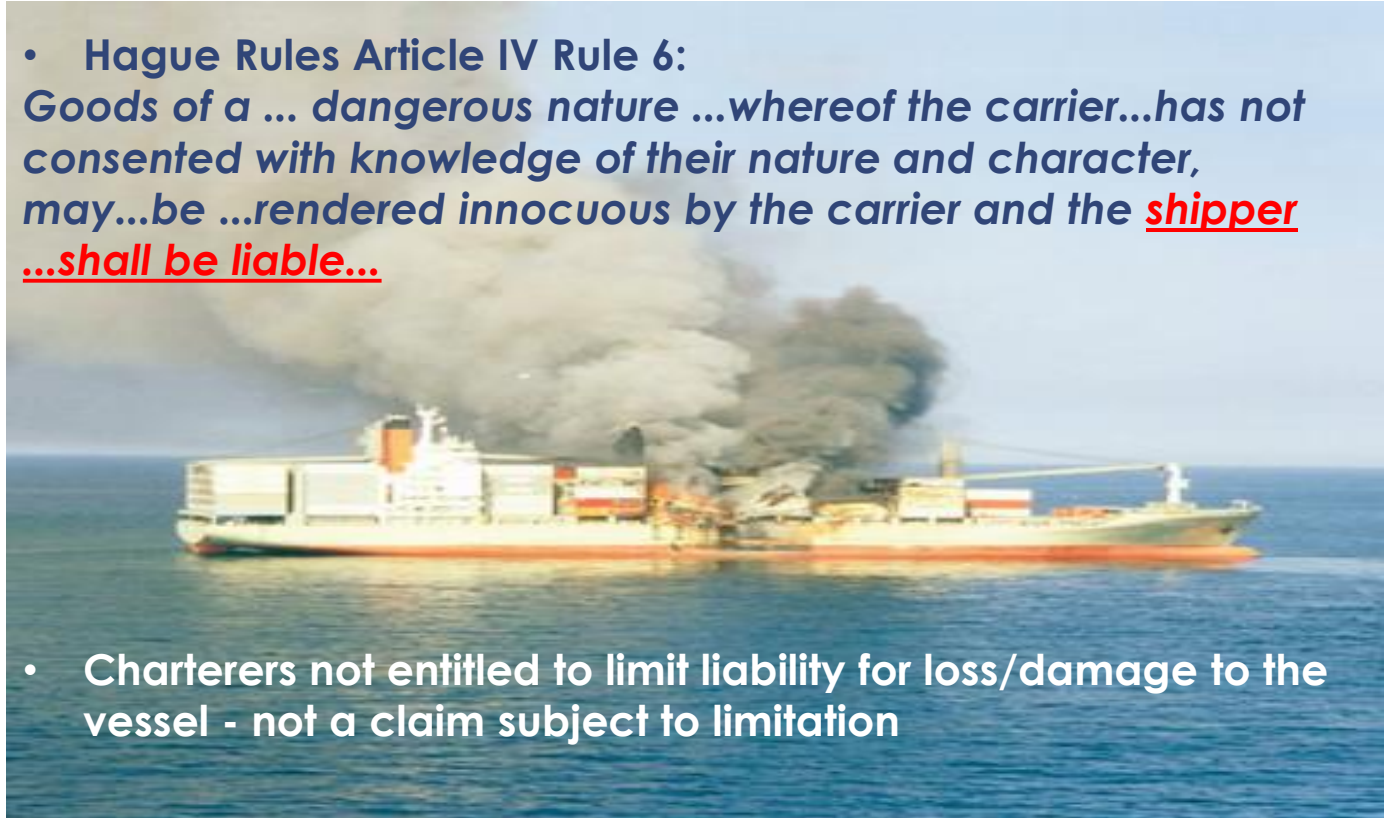


Risk transfer complexity

Indemnity claims against shippers/charterers

- Hague Rules Article IV Rule 6:
Goods of a ... dangerous nature ...whereof the carrier...has not consented with knowledge of their nature and character, may...be ...rendered innocuous by the carrier and the shipper ...shall be liable...

- Charterers not entitled to limit liability for loss/damage to the vessel - not a claim subject to limitation



Risk transfer complexity

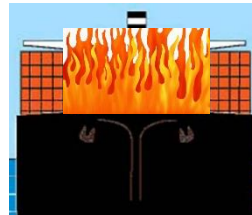
Vessel providing Line ships misdeclared container – fire defence?



335 DRUMS IN TOTAL
1X20FT CONTAINER SAID TO CONTAIN:
ORGANIC SURFACE



Line B



Line A



CLAIM

Line C

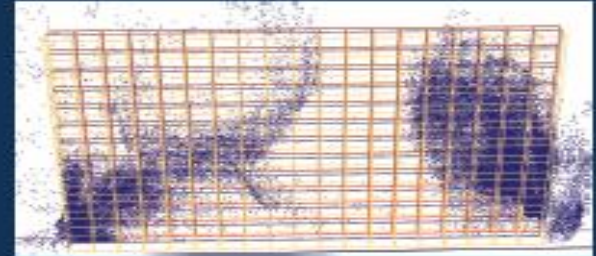


Ships equipped to cope?

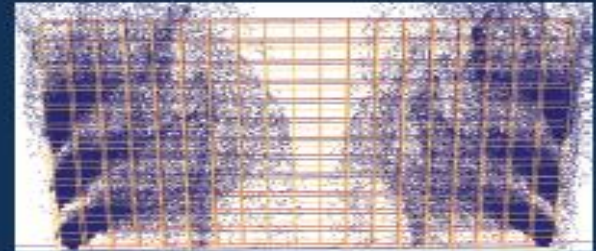
ABS 2016 FOC Guide :

"When ABS discussed the 2014 SOLAS amendments for fire fighting arrangements on all new ships constructed on or after 1/1/16 with owners and operators of container ships, it was clear that the SOLAS requirements may not be adequate for today's larger container carriers"

Two monitors at the deck edge,
on the deck



Six monitors at the deck edge,
differing vertical positioning



IUMI Position Paper

Firefighting systems on board container vessels



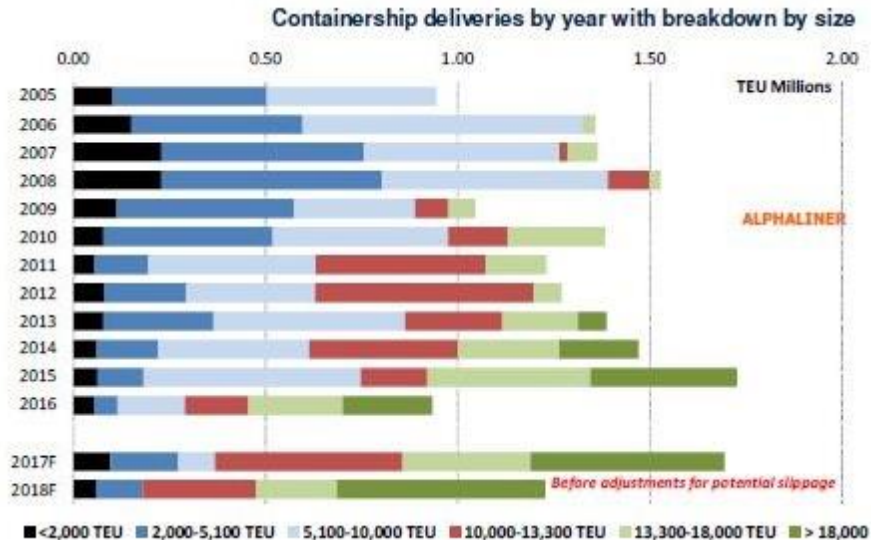
Inadequate existing firefighting regulations

- Smoke detection system may only activate when hold is full of smoke, by which time fire has spread
- Limited effectiveness of CO2 due to air inside containers
- Little to stop fire spreading to deck and practically impossible to cool deck with water

IUMI recommends that authorities, class and industry stakeholders engage in discussions to further improve fire detection, protection and firefighting capabilities

The future loaded risk

Law of averages



Asia to lead box trade expansion to over one billion teu by 2030

Container throughput grows more concentrated due to megaships and some ports are missing out, says OECD-backed think tank

February 2nd, 2017 18:00 GMT by Ian Lewis London



Home / Region / Americas

McKinsey predicts boxships of up to 50,000 teu in capacity

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Tackling misdeclaration at industry level

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- Port state policing - shipper prosecutions?
 - The role of terminals in preventing unsafe shipments?
 - More flag state accident reports & inspection campaigns?
 - Cost differential & bureaucracy for DG vs benign cargoes?
 - Carrier culture : desire to carry vs desire to avoid unsafe cargo?