Fires on Container Vessels – avoidable?

Lars Lange, IUMI Secretary General

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Kaiun Club, Kaiun Building, 2-6-4, Hirakawa-cho, Chiyoda-ku, Tokyo

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Fires on Container Vessels – avoidable?

1. The Situation

Fires on Container Vessels – avoidable?

A typical incident

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- One container on-board carries mis-/undeclared cargo which is dangerous / easy inflammable
- One container on-board catches fire due to unappropriate stowage / handling
- Detection of the fire happens too late
- Controlling or extinguising of the fire fails
- External help is not immediately available
- The fire spreads and major parts of the vessel and the cargo get destroyed

- ➢ Danger for crew‘s health and life;
- ➢ major damages to vessel and cargo;
- ➢ environmental risks

Fires on Container Vessels – avoidable?

CCNI Arauco 2016 in Hamburg

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Maersk Karachi 2017 in Bremerhaven

Fires on Container Vessels – avoidable?

A number of challenges to tackle at the same time

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1. Avoid misdeclaration of cargo
   - IMO CCC – correspondence group
   - Initiatives like CINS
   - Checks and control, e.g. NCB
2. Ensure appropriate handling and stowage on-board
3. Improve detection of fires in holds and on-board
4. Improve fire-fighting capabilities of the vessel
   a. CO_2 in the holds doesn't work for containers
   b. Fire-fighting equipment on deck is not sufficient
   c. Seafarers are no fire-fighters
5. Fire segregation on the vessel – design / fire compartments / deck house protection

➢ A holistic approach is needed

Fires on Container Vessels – avoidable?

Previous approaches were not successful

1. Submission MSC 83/25/5 in 2007: Revision of SOLAS Regulation II-2/10
   - Subsequent discussion in the FP Sub-Committee
   - Formal Safety Assessment, FP 54/Inf.2
2. MSC.1/Circ. 1472 in 2014: Equipment scenario had been enhanced for newly built container vessels with effect from 01.01.2016 onward: Defined number of mobile water monitors and at least one approved water mist lance

IUMI Position Paper:
https://iumi.com/opinions/position-papers

Fires on Container Vessels – avoidable?

2. „Proof it!“

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Container ship fire time line

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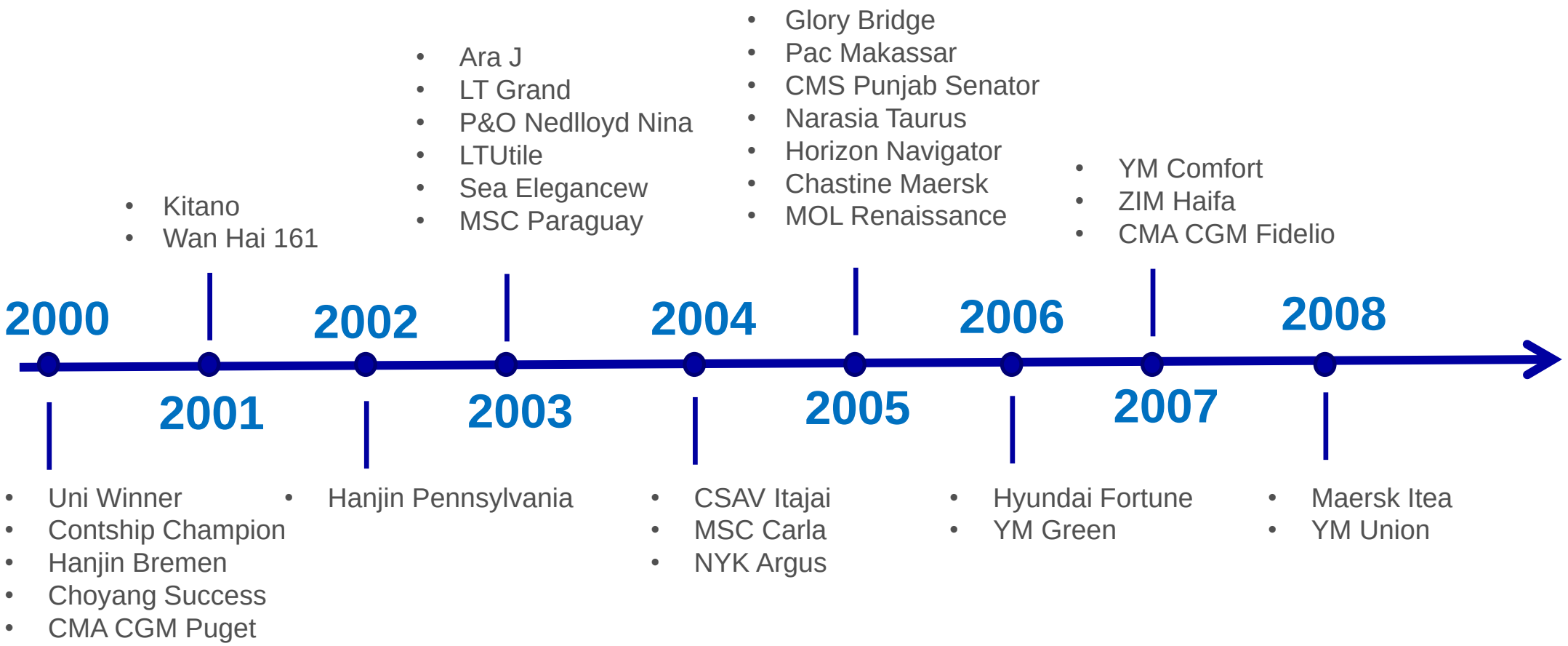
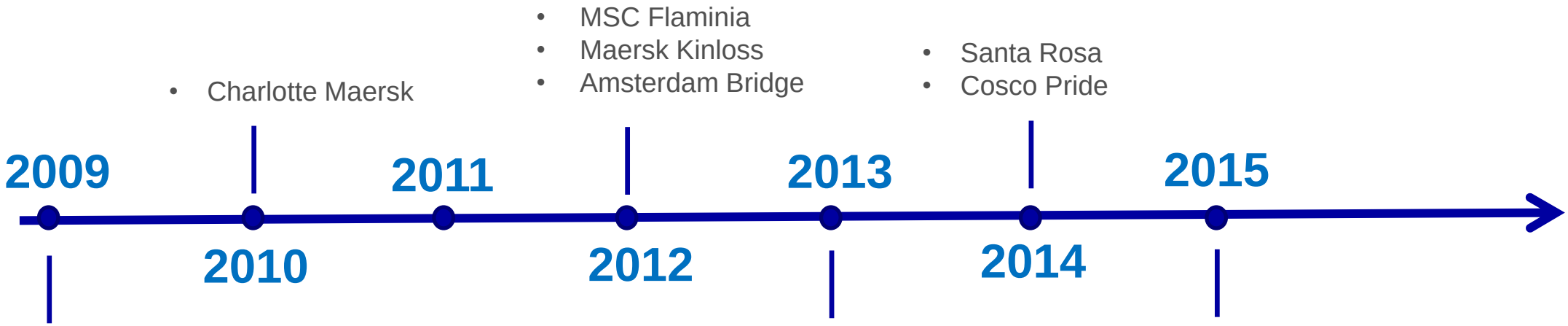


Container ship fire time line



- Hyundai Long Beach
- Iran Ilam / Sepitam
- MOL Prosperity
- MSC Ines
- Xin Los Angeles

- Charlotte Maersk

- MSC Flaminia
- Maersk Kinloss
- Amsterdam Bridge

- Eugen Maersk
- Hansa Brandenburg
- Maersk Kampala
- Atlantic Cartier
- CMA CGM Lilac

- Santa Rosa
- Cosco Pride

- Maersk Londrina
- Hanjin Green Earth
- Kamala
- Maersk Seoul
- Caroline Maersk
- UASC Alula
- UASC Barzan
- Mareno
- Cape Moreton
- Northern Volition
- MSC Katrina

Container ship fire time line

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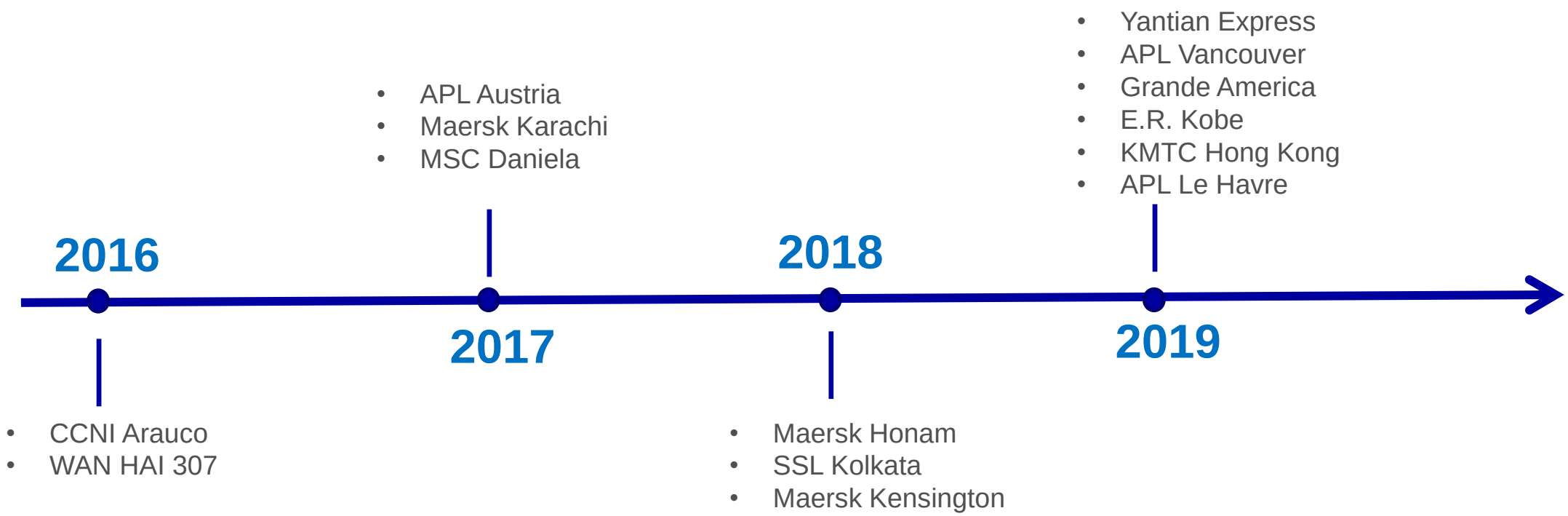
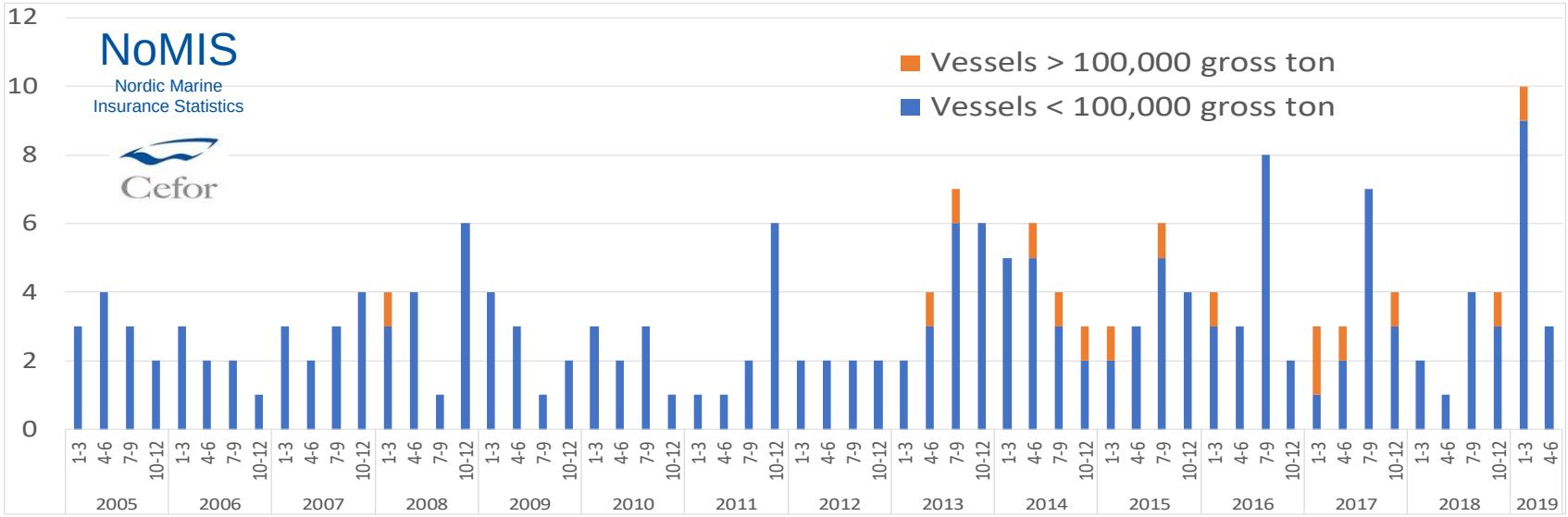
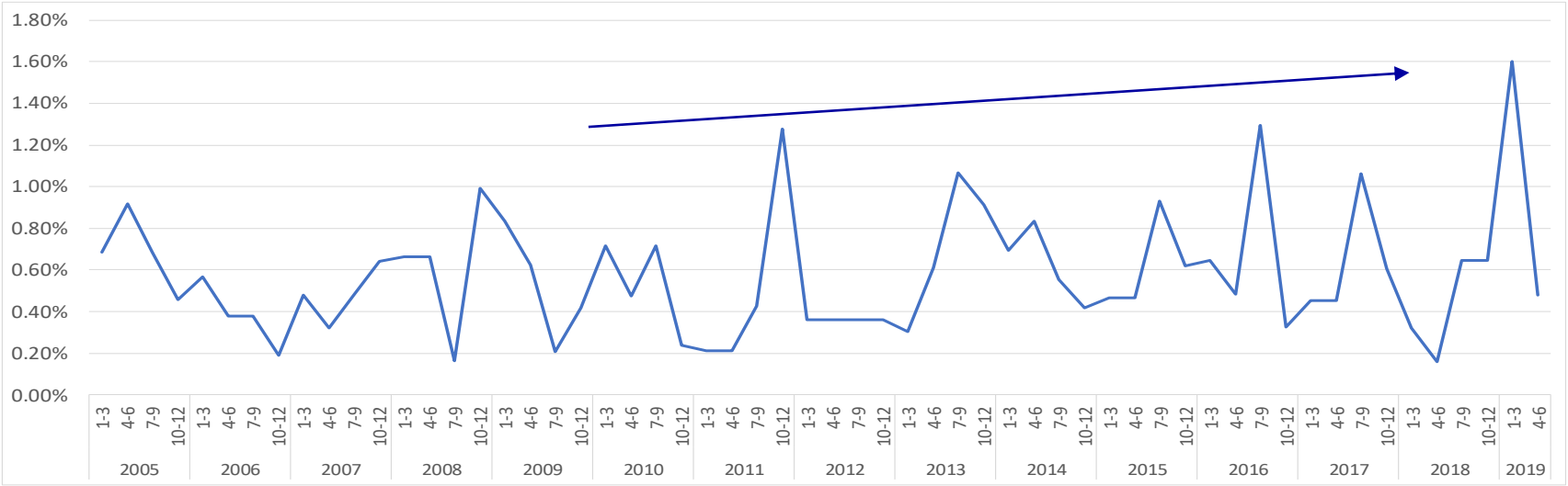


Fires on container vessels* – Numbers & Frequency (by quarter, NoMIS database)





* Including RoRo with container carrying capacity

Fire frequency on container* vessels

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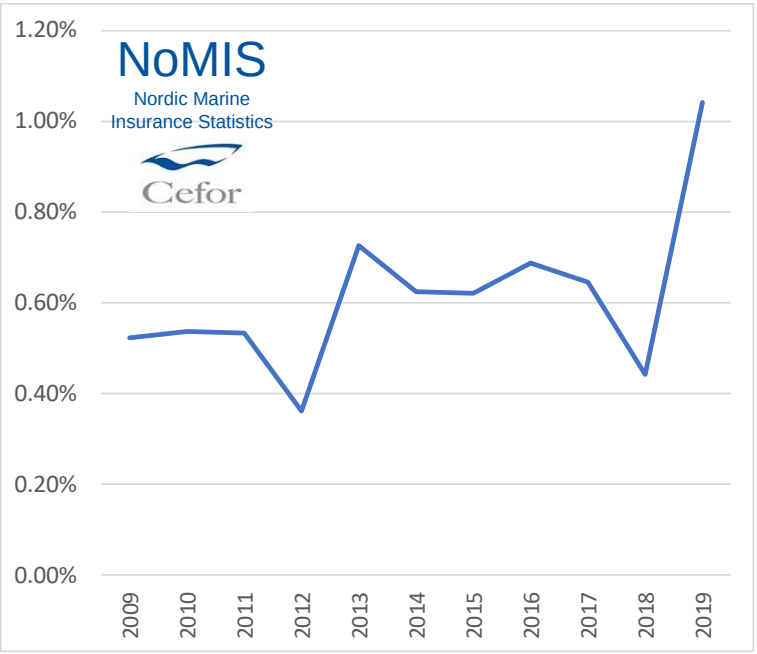
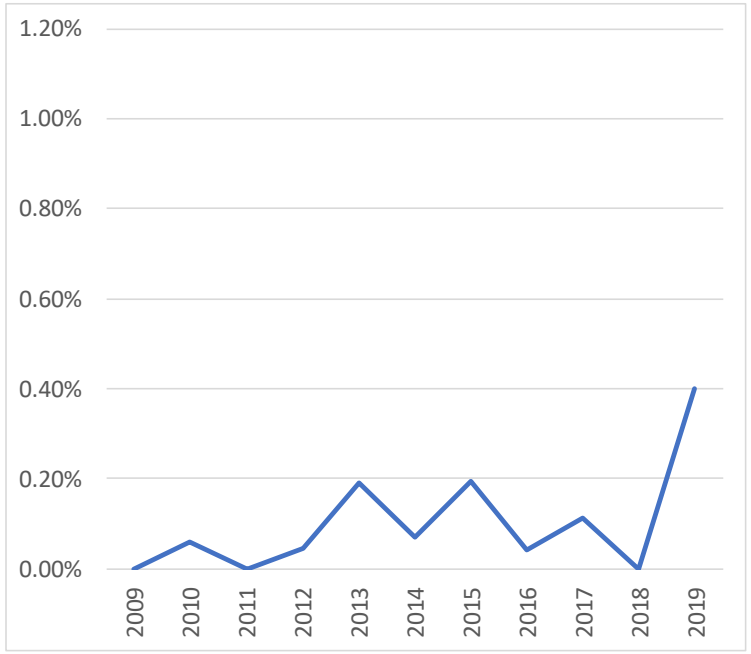
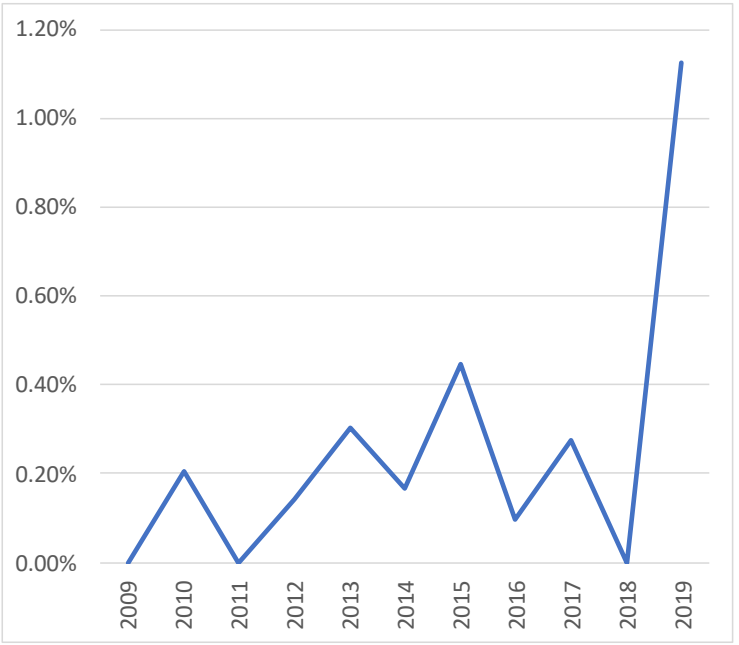
Frequency – all fire/ explosion claims



Frequency – Fires starting in cargo area** All sizes



Frequency – Fires starting in cargo area* Vessels > 50,000 gt



* Including RoRo with container carrying capacity

** by linking NoMIS data to vessels specified in https://iumi.com/news/news/iumi-presentation-at-imo-maritime-safety-committee_1559731776
About one third of these claims could be identified in the Cefor NoMIS database.

Source: https://cefor.no/statistics/analysis-with-special-focus/

Fires on Container Vessels – avoidable?

3. Solutions

Fires on Container Vessels – avoidable?

Way ahead (1)

IUMI would like to address these challenges short-term together with all relevant stakeholders

- Procedures to avoid misdeclaration and to ensure appropriate handling and stowing
- Regulation to improve detection
- Regulation to improve fire-fighting capabilities on-board
- Means to segregate a fire on-board – fire compartments

Fires on Container Vessels – avoidable?

Way ahead (2)

- Misdeclaration – IMO CCC and industry initiatives
- Improving detection, fire-fighting and segregation – IMO
  - It needs a level playing field for all
  - Can't be left to individual companies to improve
- Initiative to IMO MSC 102, May 2020
  - Cooperation with German flag state and IACS
  - Talks with as many further stakeholders as possible for support (e.g. Arendal conference, Tripartite Tokyo)
  - Draft paper shall be ready by mid Dec 2019 for sharing / comments / co-sponsoring

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Intended framework for IMO proposal

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- Refer to FP 54/Inf.2 (FSA introduced by Germany in 2009)
- "Without anticipating the discussion and decision making in the appropriate IMO Sub-Committee, the following key issues of a desirable revision of fire protection requirements are listed below:

    1. Definition of fire compartments under deck by means of the transverse bulkheads, including powerful water spray cooling system for hull protection.
    2. Establishment of fire compartments above the deck, in line with those under deck, by means of vertical water curtains (shields), effective up to Bft. 10.
    3. Fixed installed monitors at locations permitting a dual attack of each fire on deck.
    4. Fixed installed cooling systems for hatch covers and deck girders of the vessel.
    5. Alignment of pump capacity for the above services including draining of cargo holds.
    6. Advanced fire detection and localisation system under deck.
    7. Advanced fire detection system above the deck for each bay of containers.
    8. Improved protection of deck house and lifesaving equipment by means of water curtains.

- Concurrently, the equipment of large container vessels with a combined smoke detection and CO2 flooding system may be put into question."

That‘s it!

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