



*The Evolution of
Passenger Ships:
A Risk Perspective*

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Incorporating **THE SALVAGE
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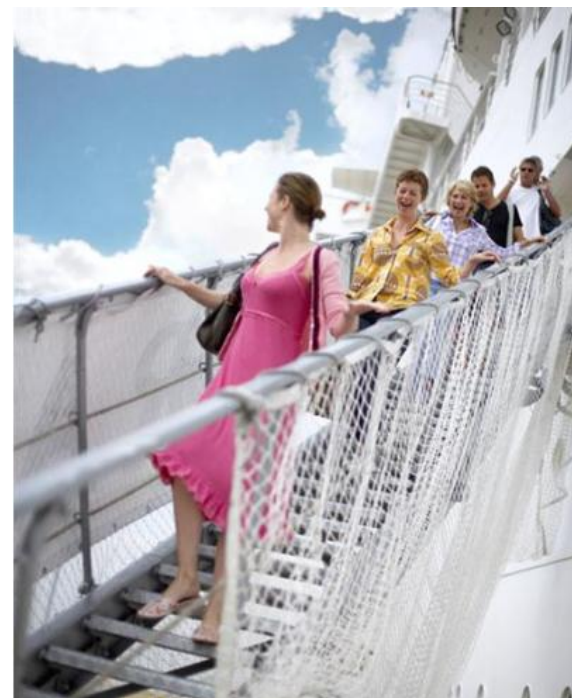
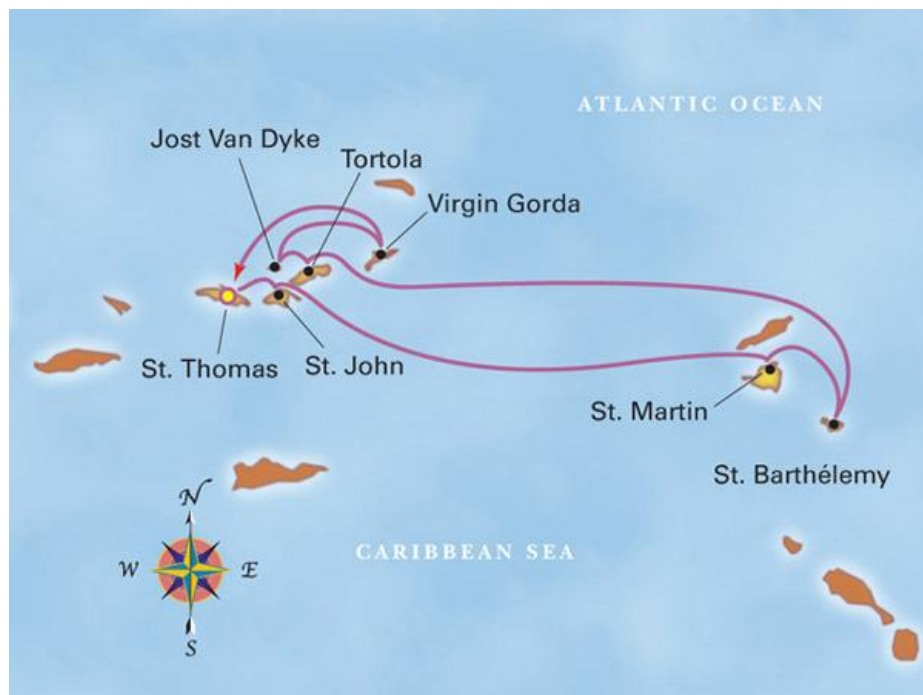


- What is a passenger ship?
- The evolution of passenger ships;
- Some numbers;
- Current status - what to look for;
- The future.

What is a Passenger Ship?



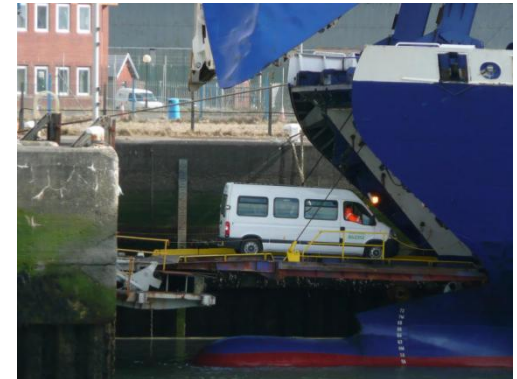
- A cargo ship with a very high value cargo;
- On a tight schedule;



What is a Passenger Ship?



- The cargo:
 - Not secured or lashed down;
 - Likes to be entertained, shop, eat and drink;
 - Young / old, large / small individual cargoes;
 - Some of the cargo likes to smoke;
 - Cargo reacts very badly to water and fire;
 - The cargo may be litigious;
 - May also include the cargo's own transport;
 - May be mixed with other cargo types;



What is a Passenger Ship?



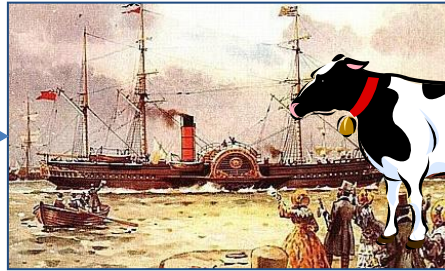
- Or more seriously.....
- The official (SOLAS) definition is:
- Passenger ship(PS): A ship which carries more than twelve passengers
(as defined in SOLAS I/2(f))
- Ro-Ro Passenger ship(RO-RO PS): A passenger ship with Ro-Ro cargo spaces or special category spaces
(as defined in SOLAS II-1/2.13)

Evolution of the Cruise Ship



1818

Black Ball Line
Packet Ships



1840

Transatlantic Liners



1873 - 1958

Great Ocean Liners



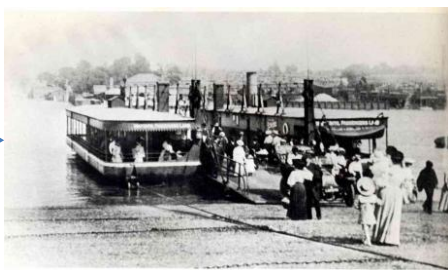
1980 +

Modern Cruise Liners

Evolution of the Ferry



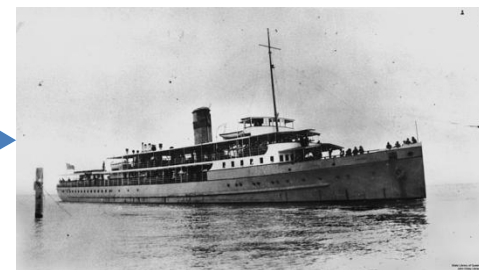
The Ark ?



1800's
Passenger Ferry



1833
Train Ferry



1970 +
Ro-ro



2000 +
'Cruise Ferry'

Some Numbers - Passenger Ship Statistics



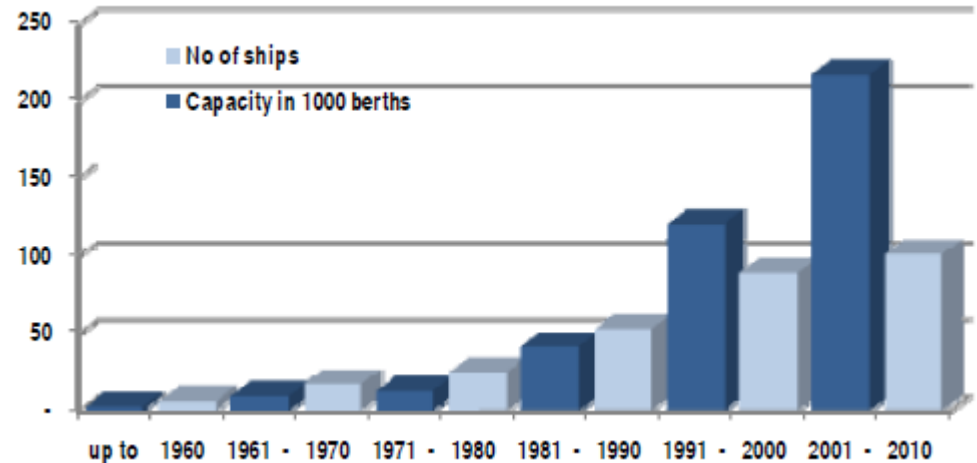
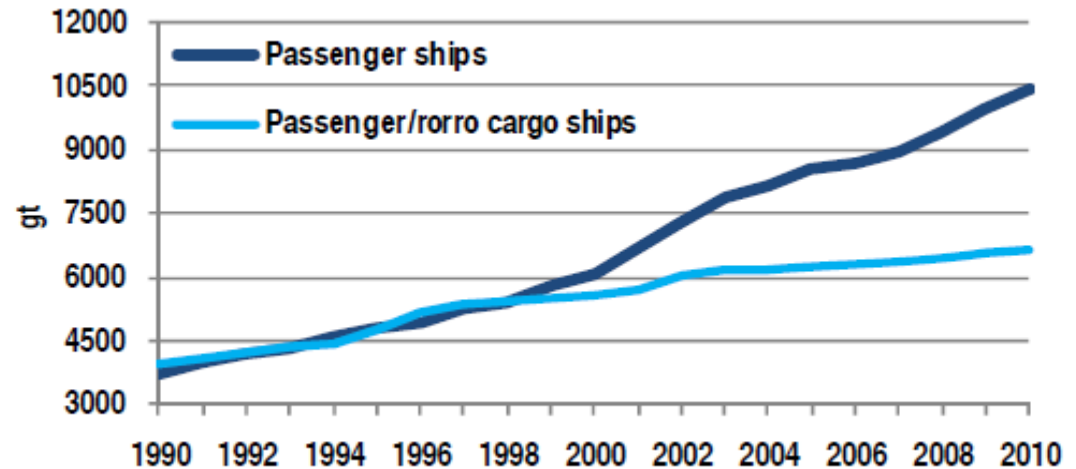
- Passenger Ship Fleet Size = 4131
 - Cruise: 461
 - Ferry: 2493
- Proportion of World Fleet = 6.3%

Source: *ISL Cruise Fleet Register / LR Fairplay / Equasis*

Some Numbers - Passenger Ship Statistics



- Growth in passenger ship size
- Age Profile of Cruise Fleet



Source: ISL Cruise Fleet Register / LR Fairplay

Some Numbers - Passenger Ship Statistics



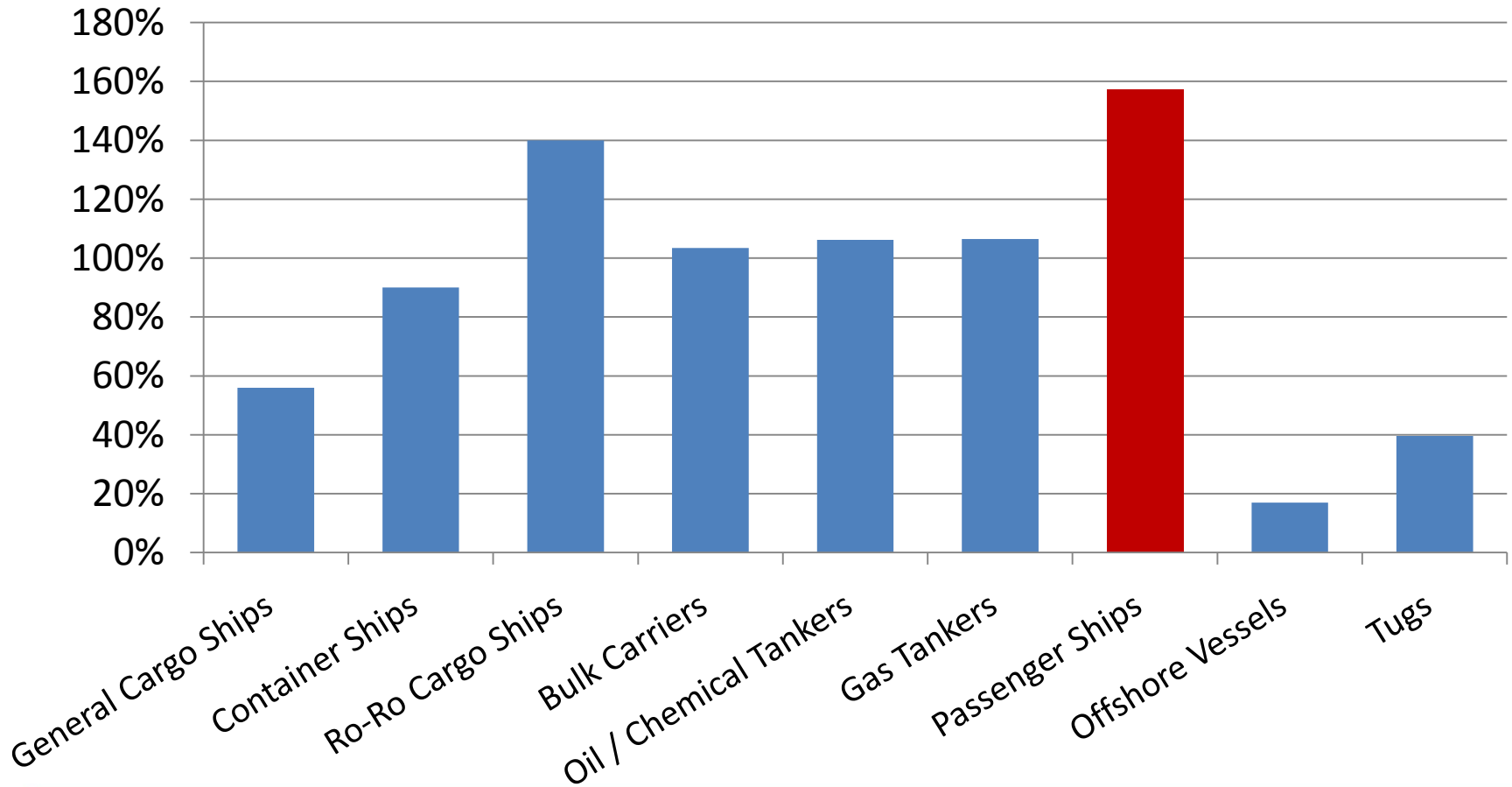
	Casualty Numbers	World Fleet Index	Casualty Index
General Cargo Ships	8.9%	15.9%	56%
Container Ships	9.0%	10.0%	90%
Ro-Ro Cargo Ships	4.9%	3.5%	140%
Bulk Carriers	21.2%	20.5%	103%
Oil / Chemical Tankers	24.1%	22.7%	106%
Gas Tankers	3.3%	3.1%	106%
Passenger Ships	9.9%	6.3%	157%
Offshore Vessels	0.9%	5.3%	17%
Tugs	3.6%	9.1%	40%
	100.0%	100.0%	

World Fleet Index = average of fleet GT and numbers
 Source: LMIU / Braemar Case Reports/ *Equasis*

Some Numbers - Passenger Ship Statistics



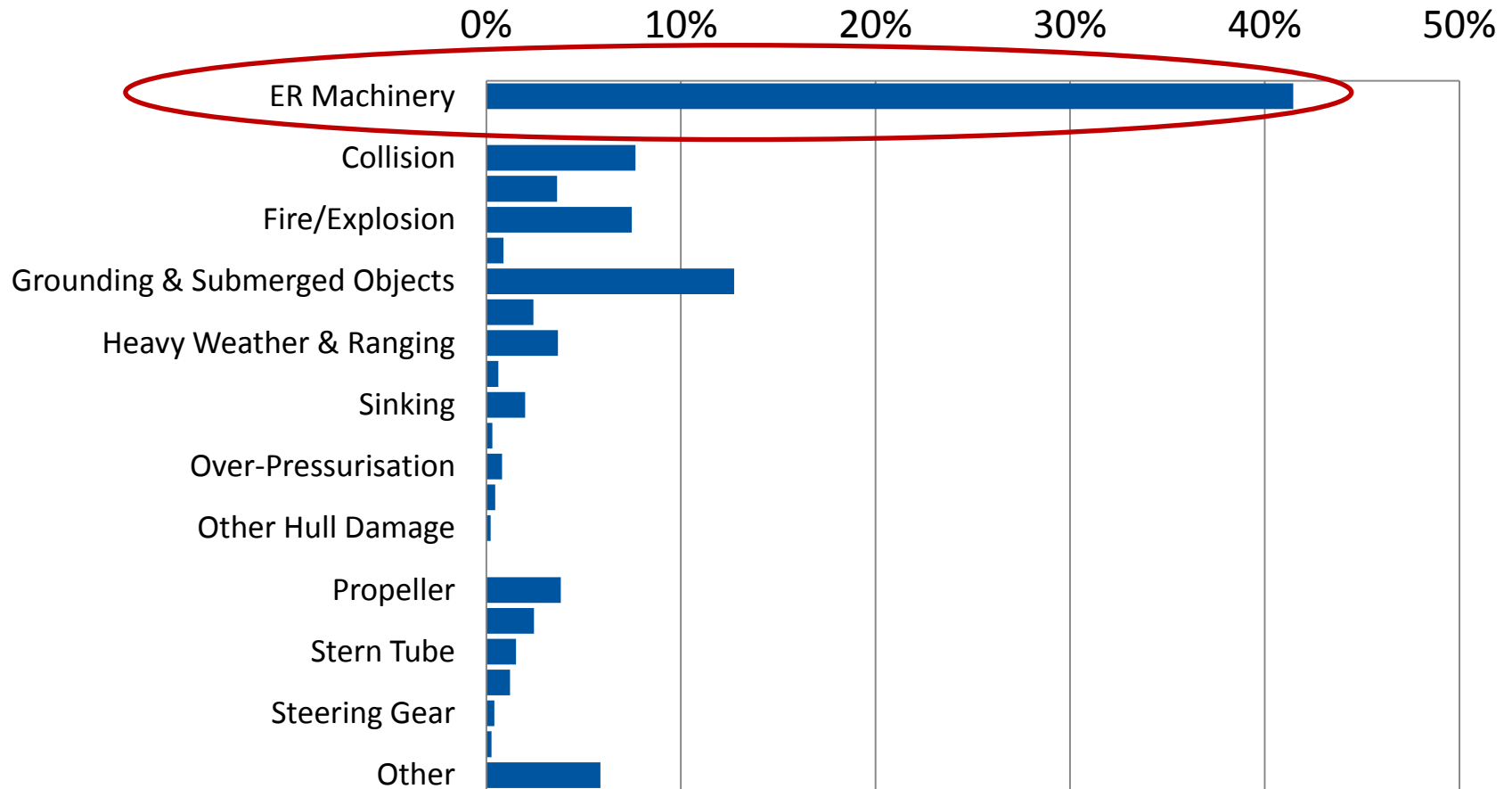
Casualty Index



Some Numbers - Passenger Ship Statistics



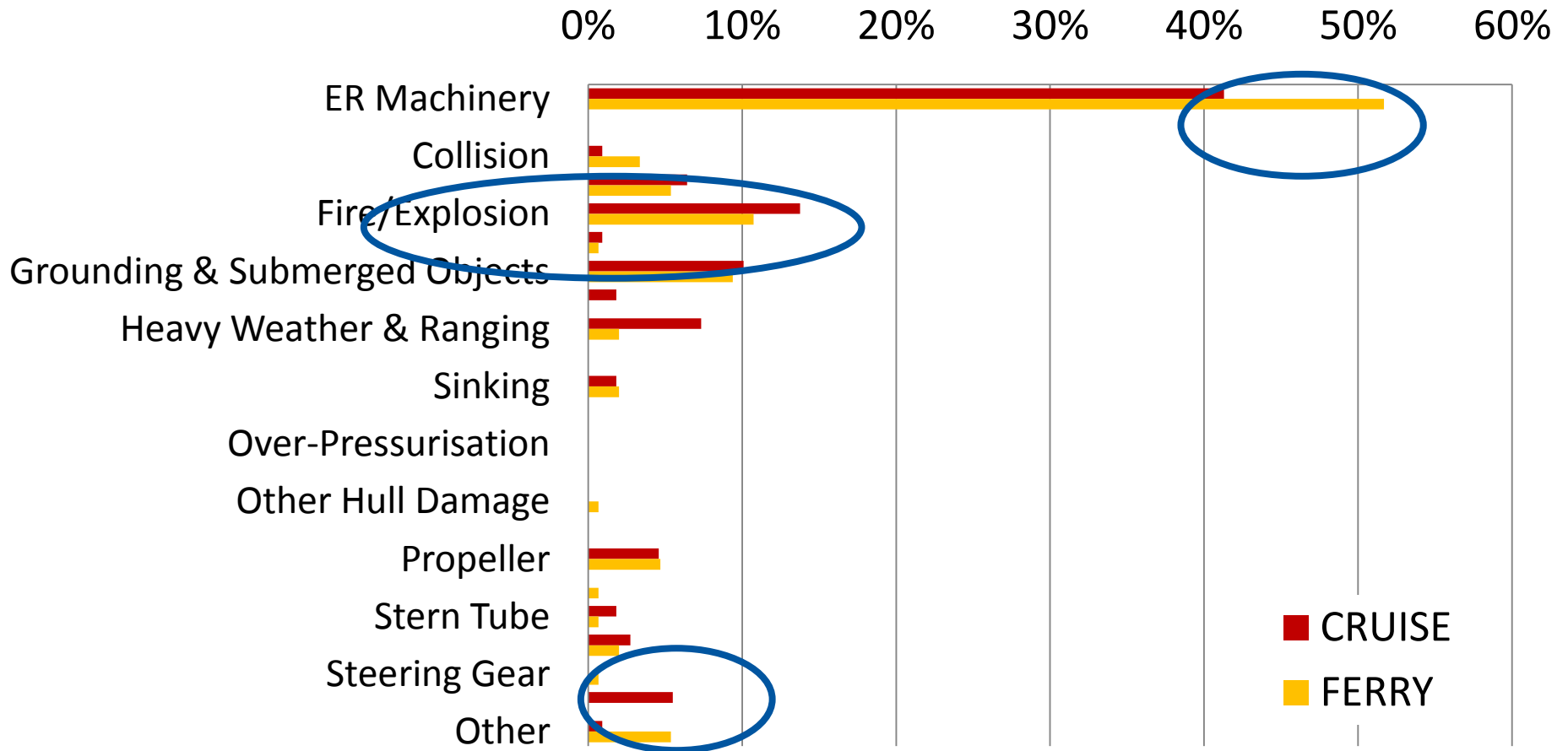
- Casualty Types – All Ship Types



Some Numbers - Passenger Ship Statistics



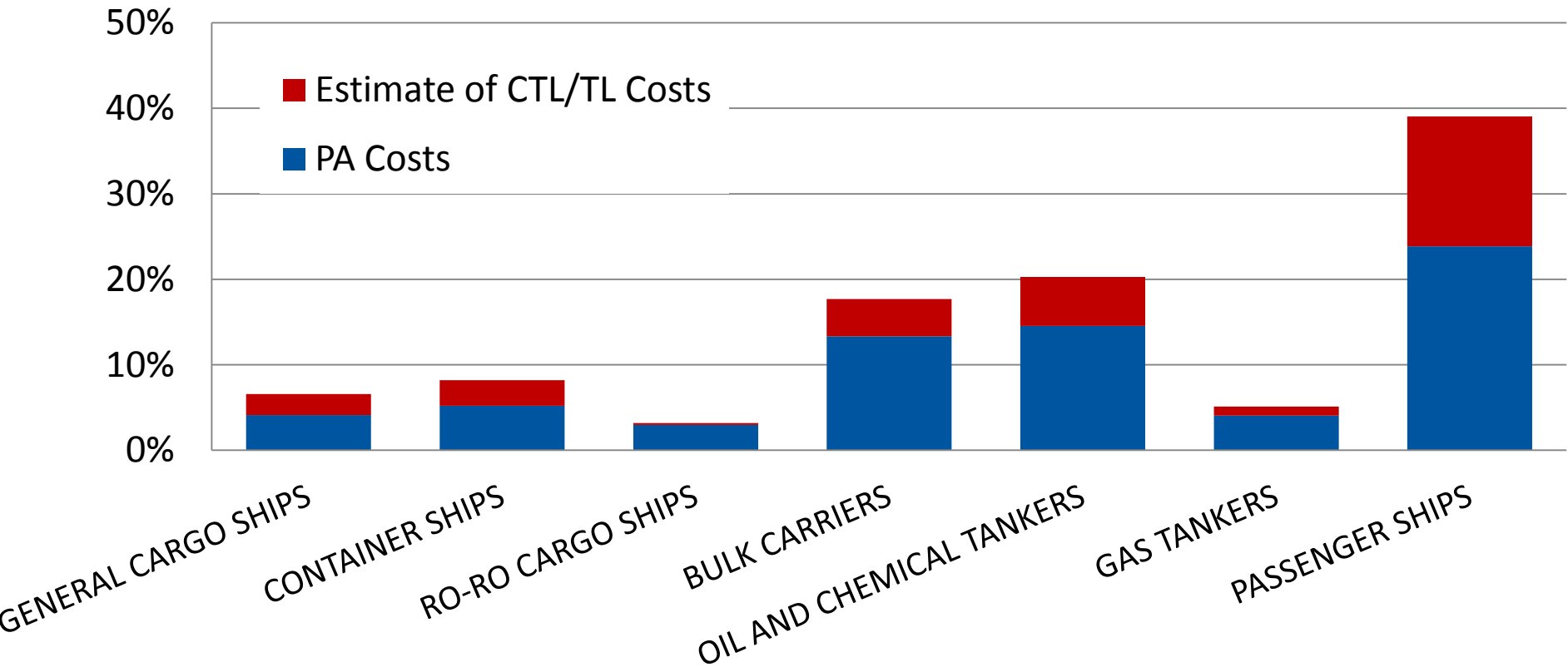
- Casualty Types – Passenger Ships



Some Numbers - Passenger Ship Statistics



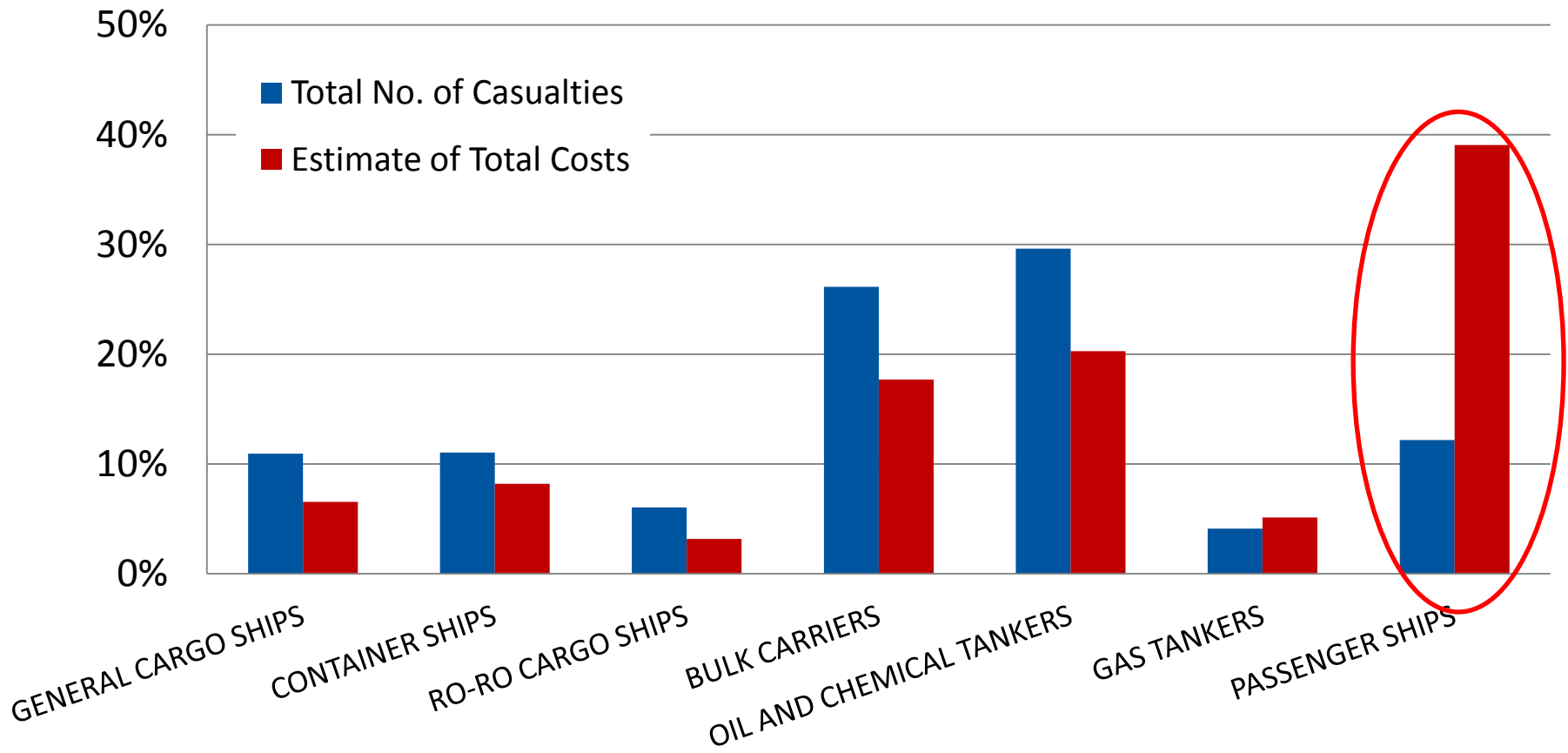
- Casualty Costs: CTL / TL vs Partial



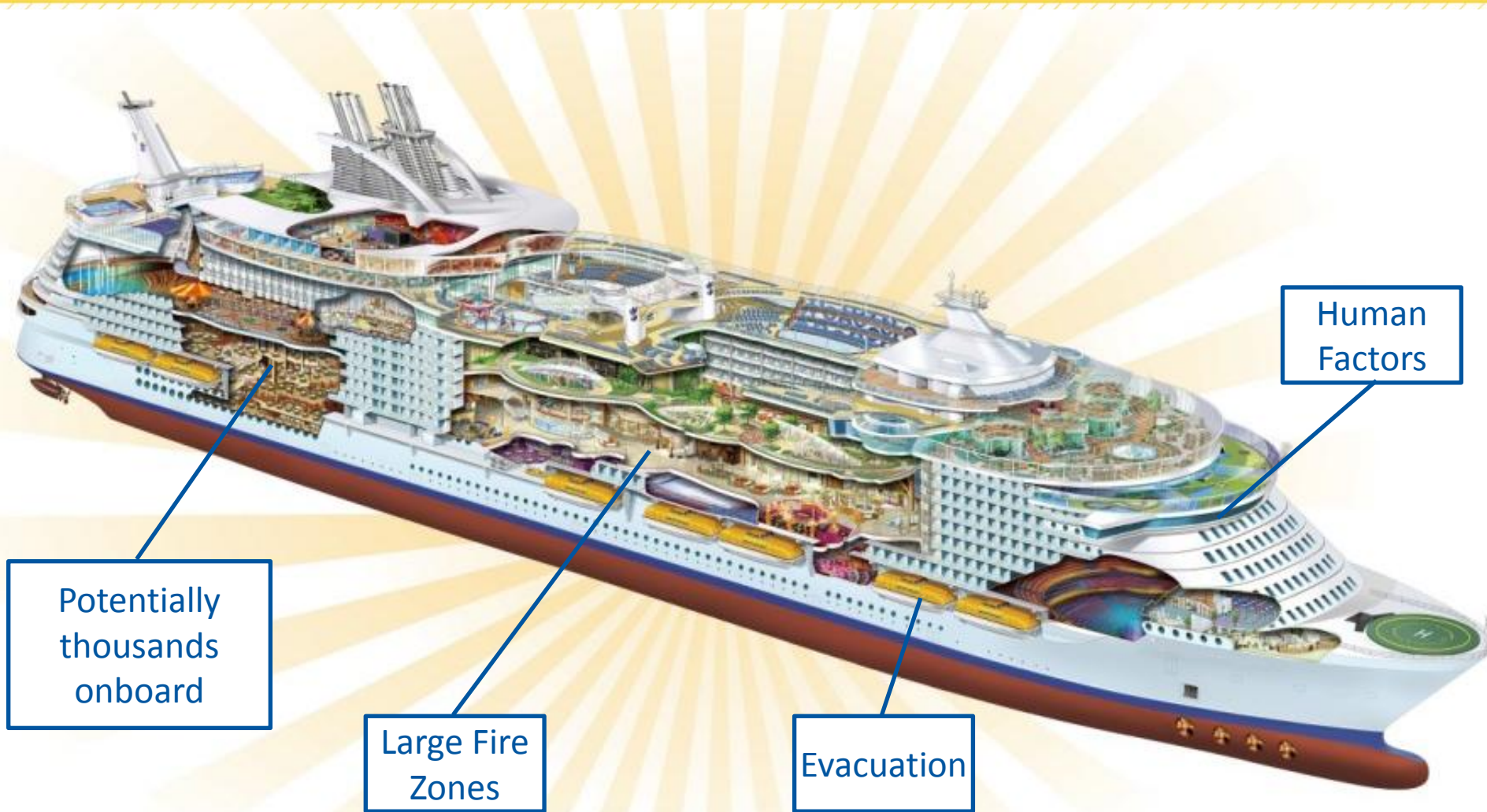
Some Numbers - Passenger Ship Statistics



- Casualty Costs vs. Casualty Numbers



Current Status – What to look for



Potentially
thousands
onboard

Large Fire
Zones

Evacuation

Human
Factors

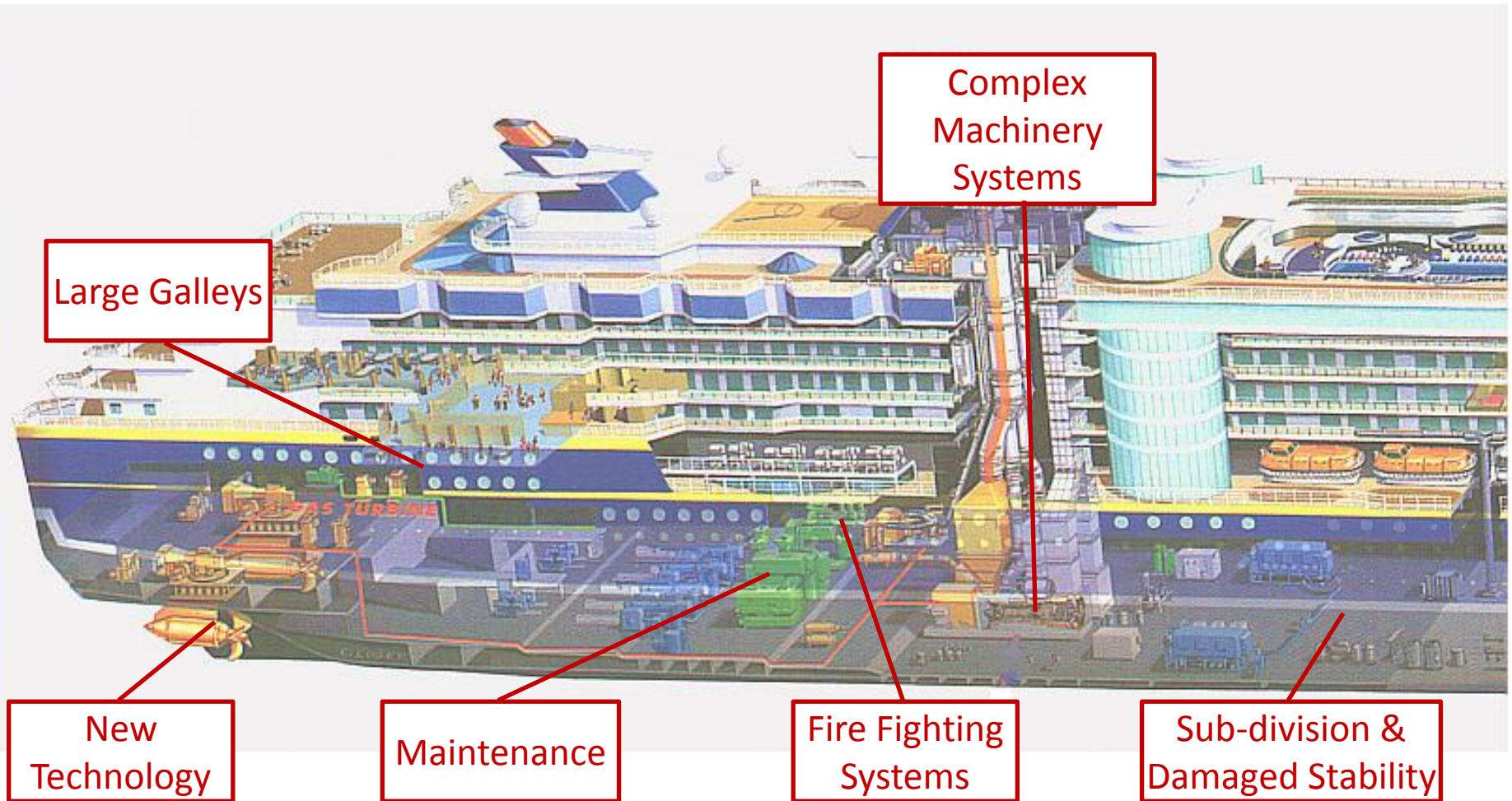
Current Status – What to look for



Mass Evacuation System



Current Status – What to look for





Bigger – Smaller – More Extreme

- **Bigger Ships**
- **Smaller Ports**
- **More Extreme Locations**



Bigger – Smaller – More Extreme?



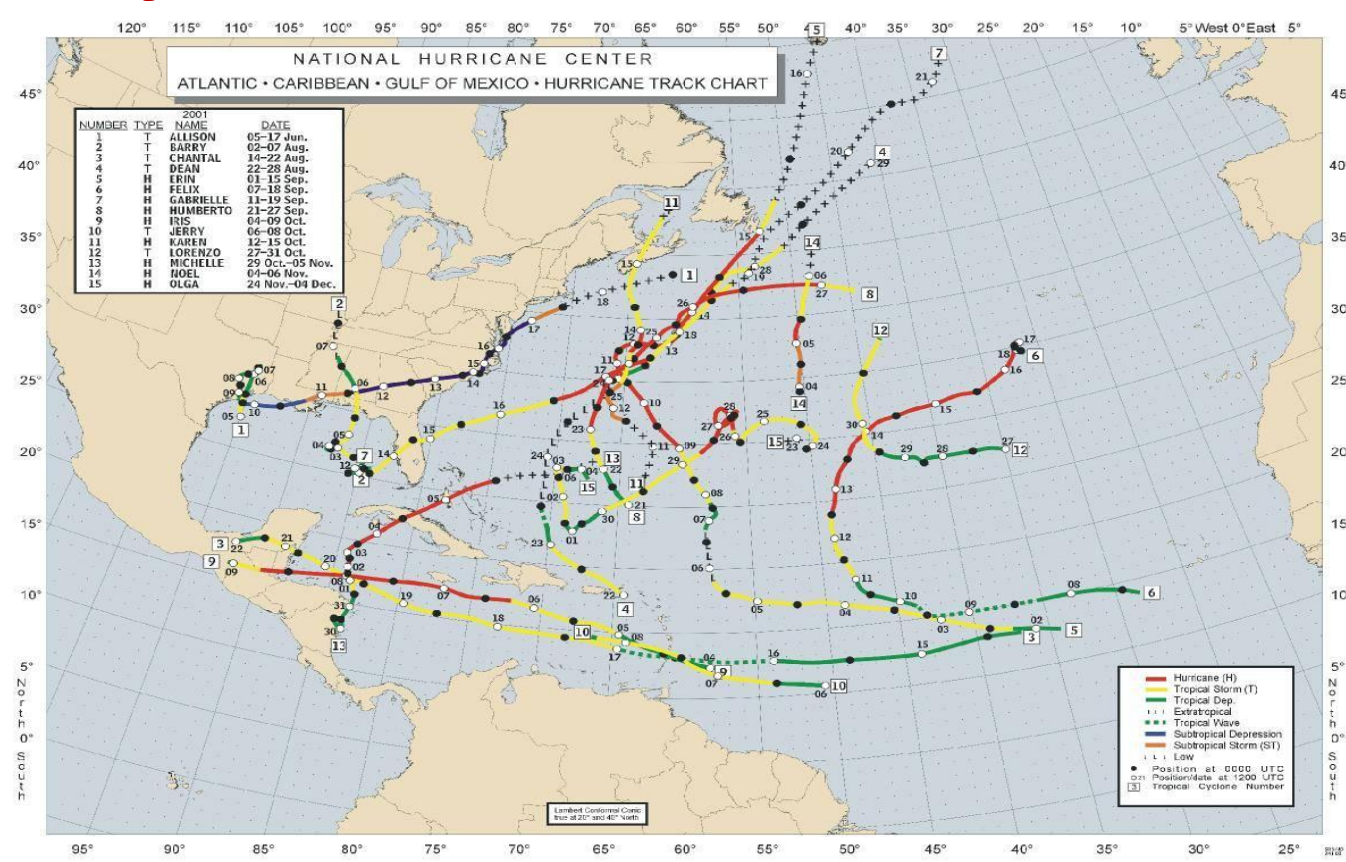


Heavy Weather





Heavy Weather – Hurricane Seasons





Survivability – Damage Control





Fire



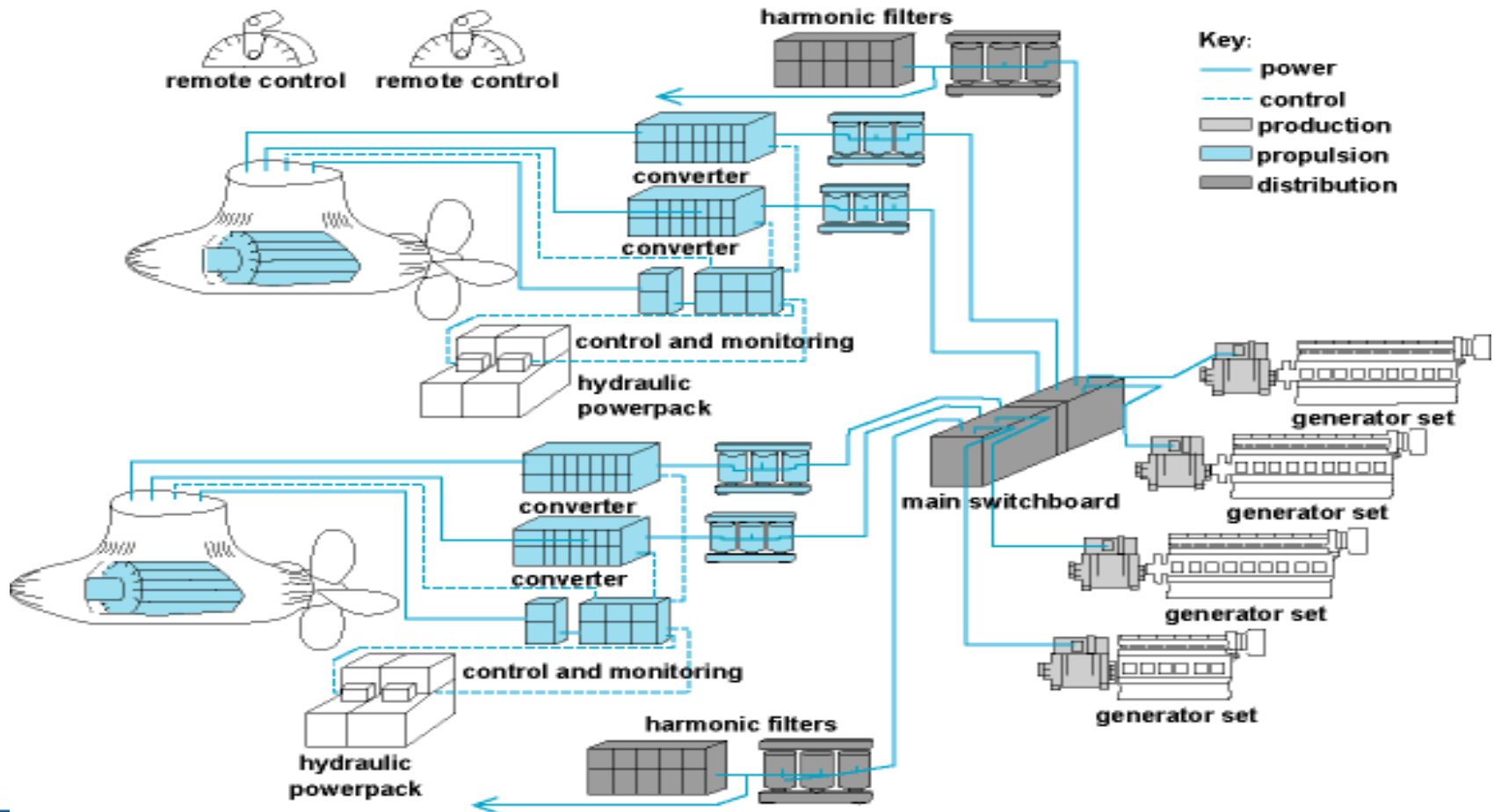


Complex Systems and New Technology





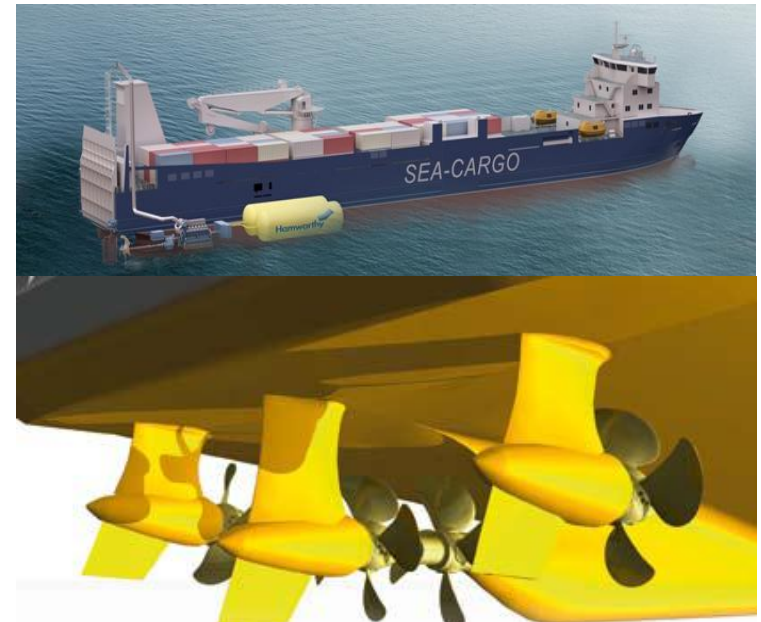
Complex Systems and New Technology



The Future – Near Term Evolution



- LNG as Fuel;
- New machinery arrangements;
- Space based design;
- Cruise industry growth;
- Bigger still.....?
- More niche vessels;



The Future – Long-term Evolution



- Cruise ships:
 - Floating ‘cities’?
 - Global travel.
- Ferries
 - Evolution of current designs?
 - Outmoded by alternatives?



Breaking News from Norway



Courtesy of www.shipwrecklog.com



- Very high value cargo – safety paramount;
- Highly evolved design & look to the past;
- Ship size and complexity increasing;
- Shortage of seafarers and standards a concern;
- High end designs, complex operations = high cost (capital and repair)
- Incidents tend to be more costly
- Thorough surveys and risk assessments recommended:
 - Cruise ships: Generally good technical management / operation
 - Ferries: Standards vary considerably – less revenue.

Merci Beaucoup



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