GUY CARPENTER

Port of Tianjin: August 2015 Loss Event and Market Impact

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Tianjin: Overview and Market Challenges

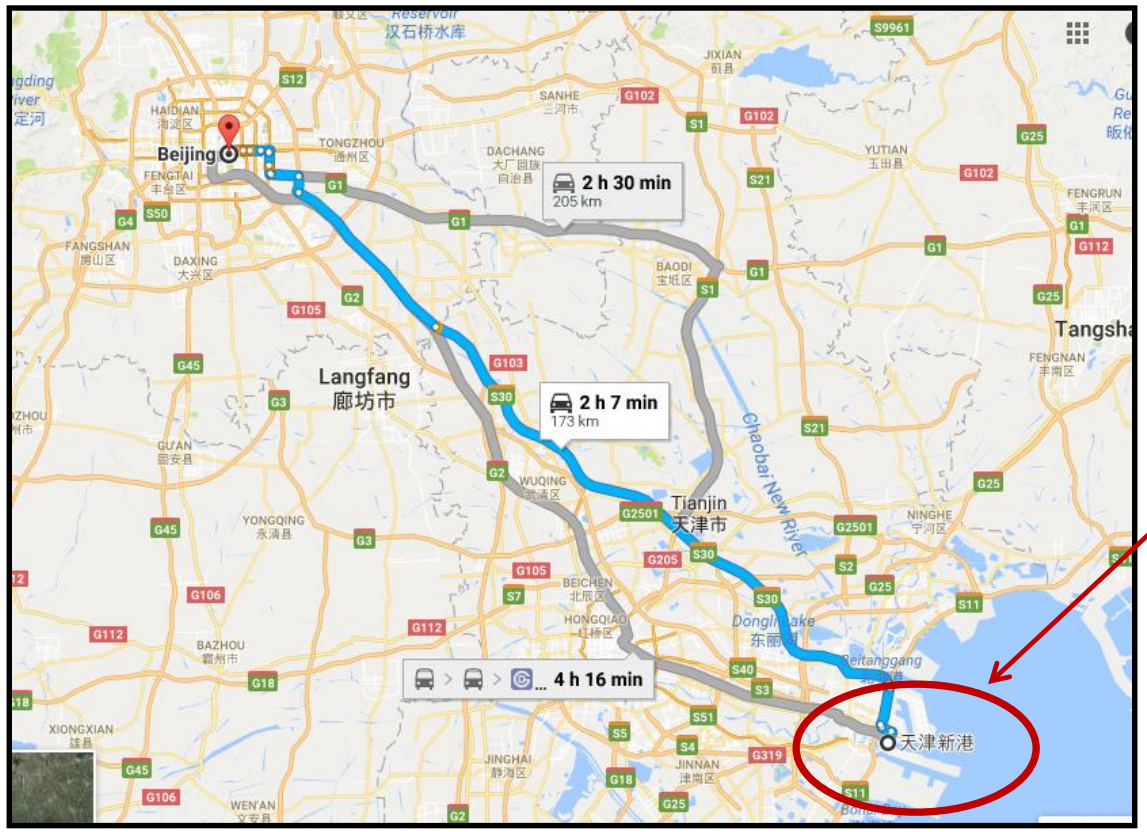
Today's Agenda

- Overview of Port of Tianjin
- Loss Event: August 12, 2015
- Post-Loss Reaction
- Lessons Learned?

Tianjin: Overview and Market Challenges

Port Specifics: Location

- Location
  - Northern China on the Bohai Bay
  - Primary maritime gateway to Beijing (100 miles / 170km northwest)



Tianjin: Overview and Market Challenges

Port Specifics: Size, Scope, and Activity

- Size and Scope
  - Over 50% of Fortune 500 have presence in Tianjin
  - 40% of China's cars imported through port
- 2015 Activity (per American Association of Port Authorities)
  - Container traffic: 13,881,000 TEUs, 10th most in world
  - Cargo volume: 440,430,000 tons, 8th most in world
    - Ranked as high as 3rd most active in early part of decade

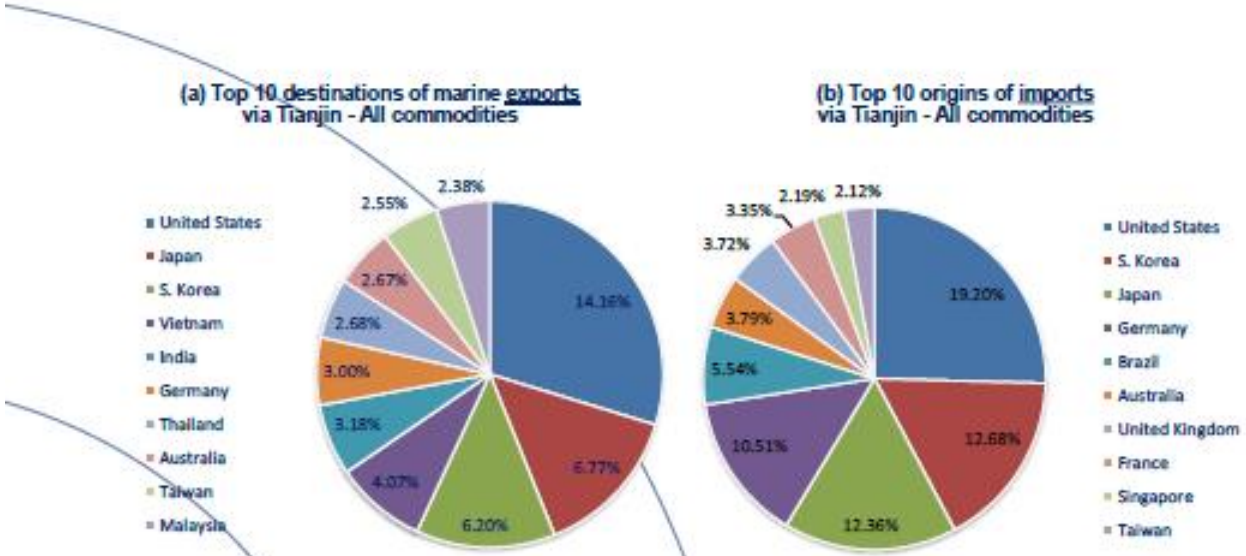


Figure 12 - Top 10 destinations of marine exports and imports via Tianjin - All commodities (Source: Guy Carpenter's ITDB)

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Event Summary

- August 12th, 2015: two explosions at a plant warehouse owned by Ruihai Logistics
  - Expected to have been caused by detonation of 800 tons of ammonium nitrate
  - Second explosion registered as 2.9 earthquake

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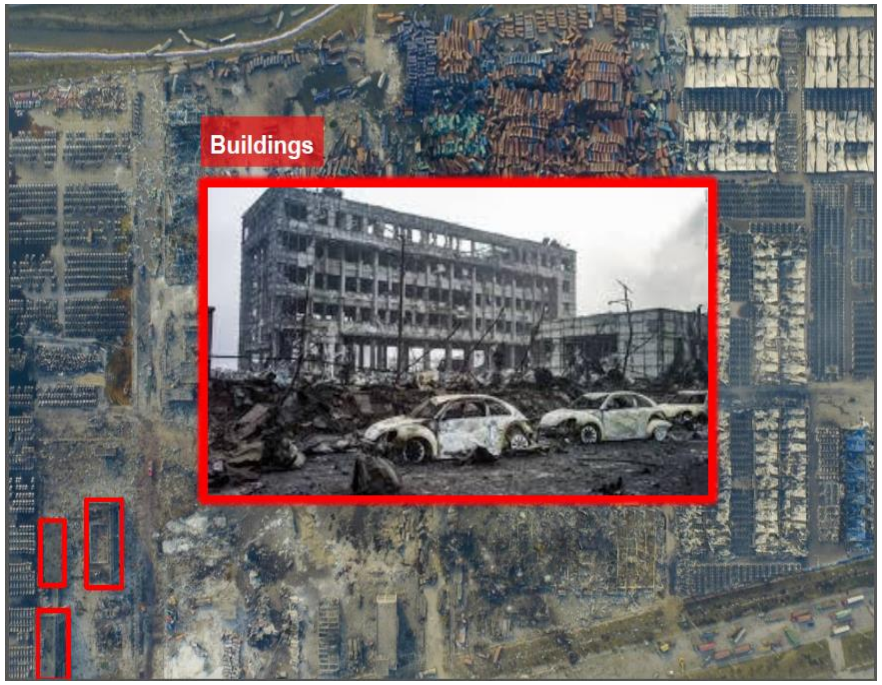
Event Summary: Container Storage and Buildings



Up to 20,000 containers estimated to be in port at time of explosion

Property damage included apartment buildings, warehouses, and even the Donghai Road light rail station

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Event Summary: Vehicle Storage

Asia: Sales volume totaled 152,000 units, a year-on-year decrease of 9% or 15,000 units. In ASEAN, sales volume decreased to 99,000 units, a year-on-year decrease of 8% or 8,000 units due to a continued sluggish economy in Thailand. In North Asia, market growth has slowed down since beginning of this fiscal year in China, where sales volume decreased to 53,000 units resulting in a year-on-year decrease of 11% or 7, 000 units. These negative factors affected the decrease of total sales volume for the region.

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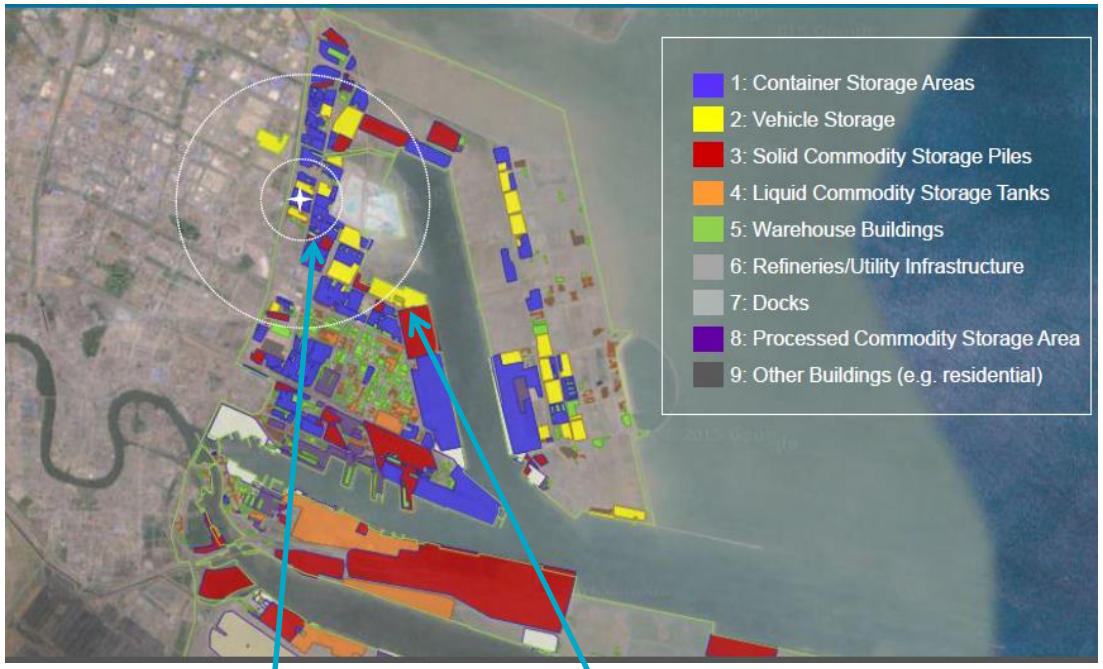
Event Summary: Exposure at Time of Loss



1 km radius

3 km radius

Port Land use		Total Area (Sq km)	<1km damage as % port total	<3km damage as % port total
1: Container Storage Areas		4,363,059	16%	41%
2: Automobile Storage		1,855,610	11%	54%
3: Solid Commodity Storage Piles		3,185,550	2%	16%
4: Liquid Commodity Storage Tanks		4,536,287	0%	2%
5: Warehouse Buildings		6,186,790	2%	12%
6: Refineries/Utility Infrastructure		4,937,090	0%	0%
7: Docks		3,247,385	0%	0%
8: Processed Commodity Storage Area		1,395,429	0%	0%
9: Other Buildings		1,326,876	2%	9%

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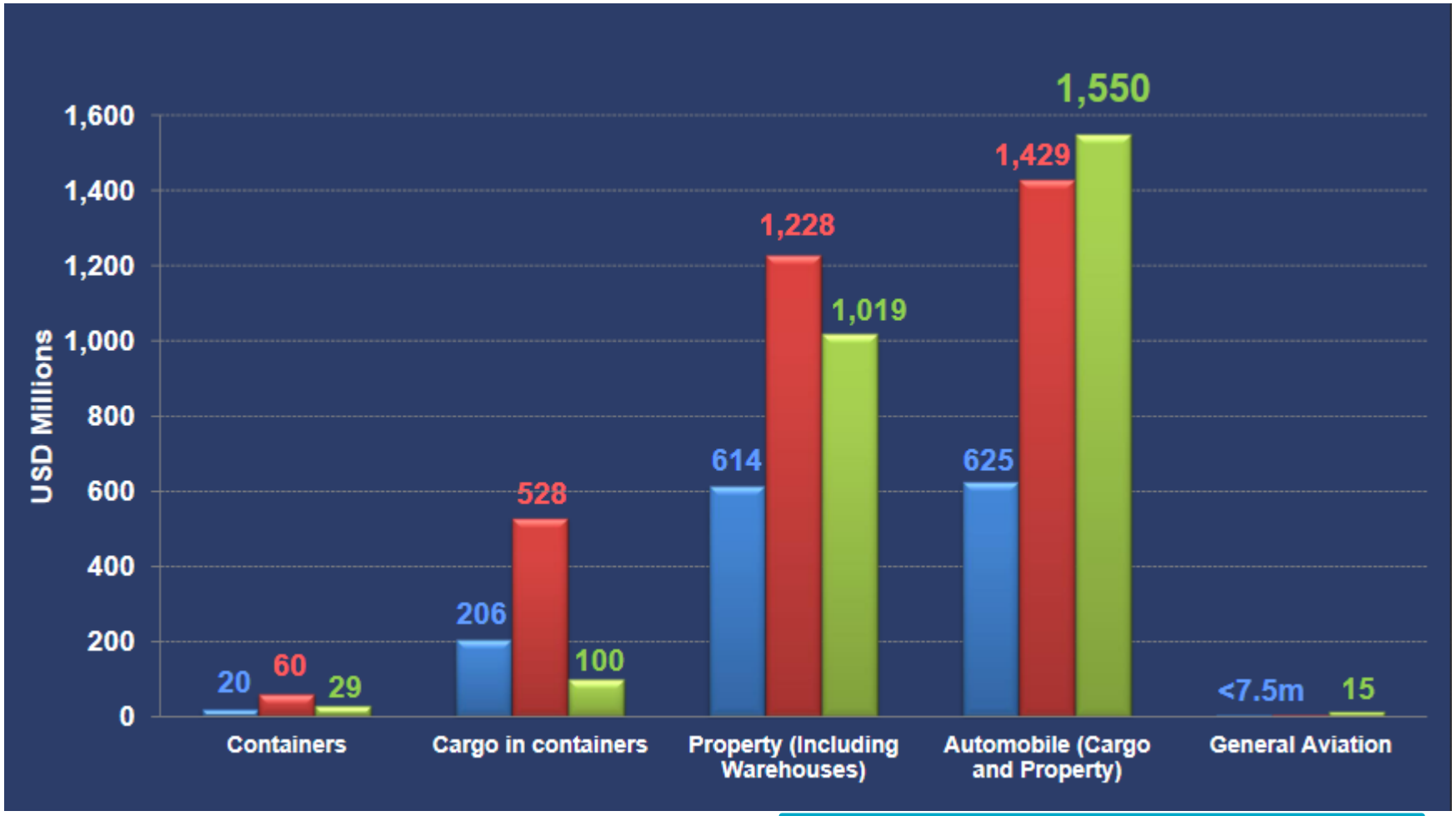
Loss Estimate: 8 Months Post-Event



Total Loss: $2.7bn

Source: Guy Carpenter Presentation to BMUSF

Key (all numbers in USD 000s):

Blue – Low Estimate (Sept. 2015)

Red – High Estimate (Sept. 2015)

Green – Revised Estimate (April 2016)

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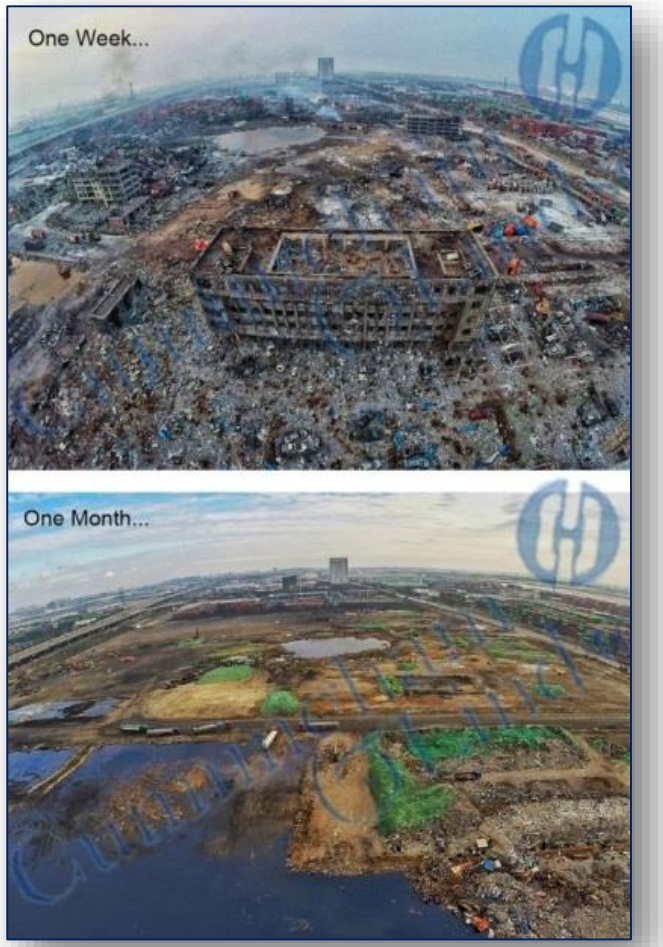
Post Event

+1 month



March 2016

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Post-Loss Reaction: First Six Months Following

- **Dieter Berg, IUMI**

  "[Tianjin] demonstrates the persistent growth of accumulation of values in port and storage areas, particularly in highly industrialized regions . . . To evaluate worst case scenarios we need to fully understand the value of the goods in the port and all potential exposures before we can calculate adequate premiums."

  Maritime Executive (Feb. 4th, 2016)

- **Nick Derrick, IUMI**

  "Tianjin port covers an area of around 125 sq km, but only a small part of the port was affected by the explosion. Cargo insurers need to understand what the dollar loss might have been if the entire port had been affected, perhaps by a natural catastrophe such as an earthquake or tsunami."

  Navigate PR Ltd (September 15th, 2015)

- **Chris Folkman, RMS**

  "The cargo industry should use the event as a catalyst to achieve a more robust understanding of its exposure, how it accumulates, and how vulnerable it might be to future losses."

  RMS Website Blog (November 18th, 2015)

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Post-Loss Reaction: Nearly Two Years Later

- What are (re)insurers saying today?
- Have the lessons from Tianjin been heeded?
  - Risk accumulation
  - Greater understanding of real exposure?
- How are accumulation issues being addressed in the (re)insurance market?
  - Is there a particular focus on specific commodities?
  - What about other sectors within the Marine class?

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Post-Loss Reaction: Nearly Two Years Later

"On April 27, Madrid Maersk, a 20,568 TEU container vessel and the first second generation Triple-E class vessel, called the ***Port of Tianjin*** in China. This was the first port on its maiden voyage."

Maritime Executive, May 2nd 2017

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Summary and Q&A

QUESTIONS?

GUY CARPENTER