



Cargo Tank Inspection

Class Aspects

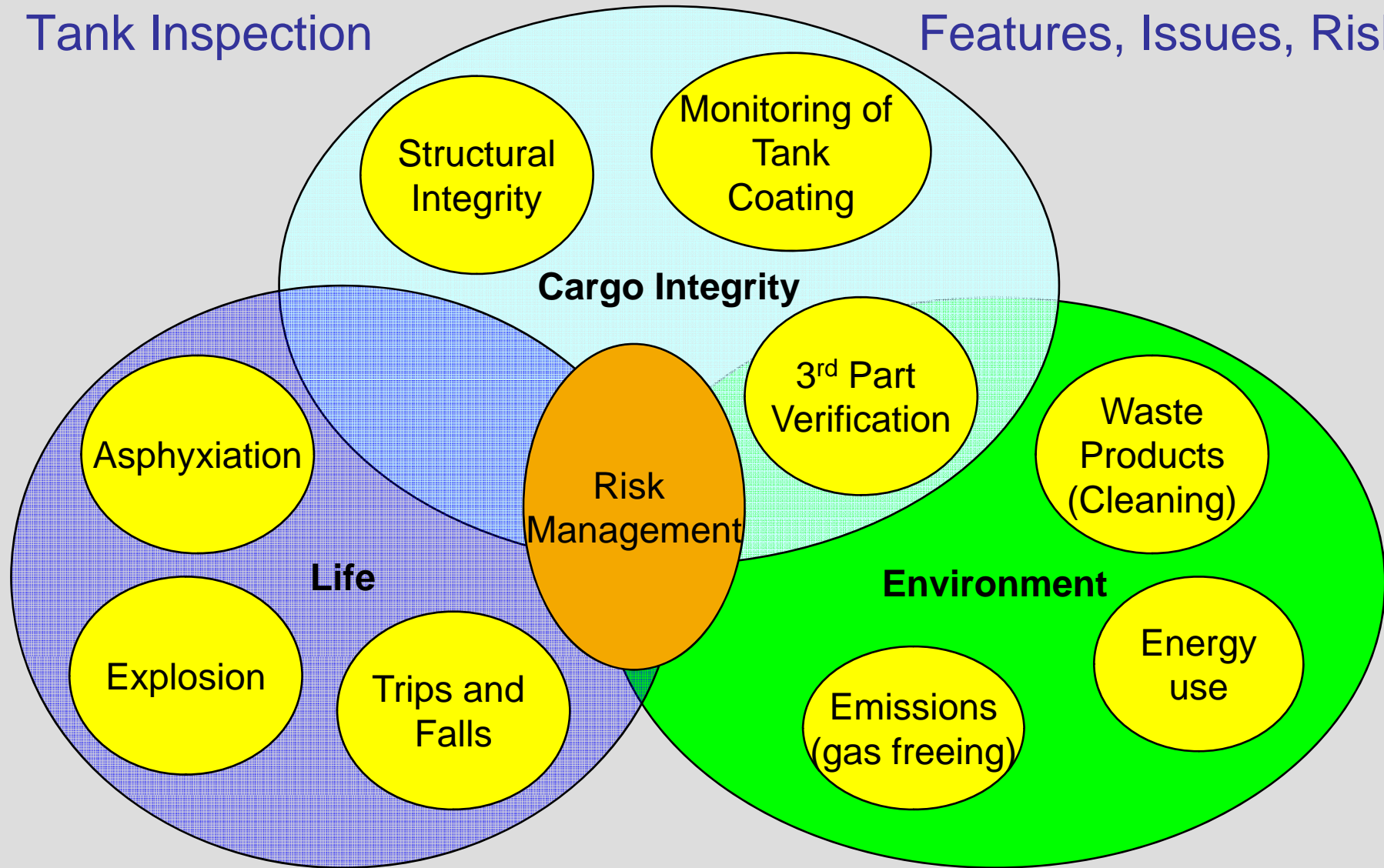
London
June 2009

Cargo Tank Inspection



Tank Inspection

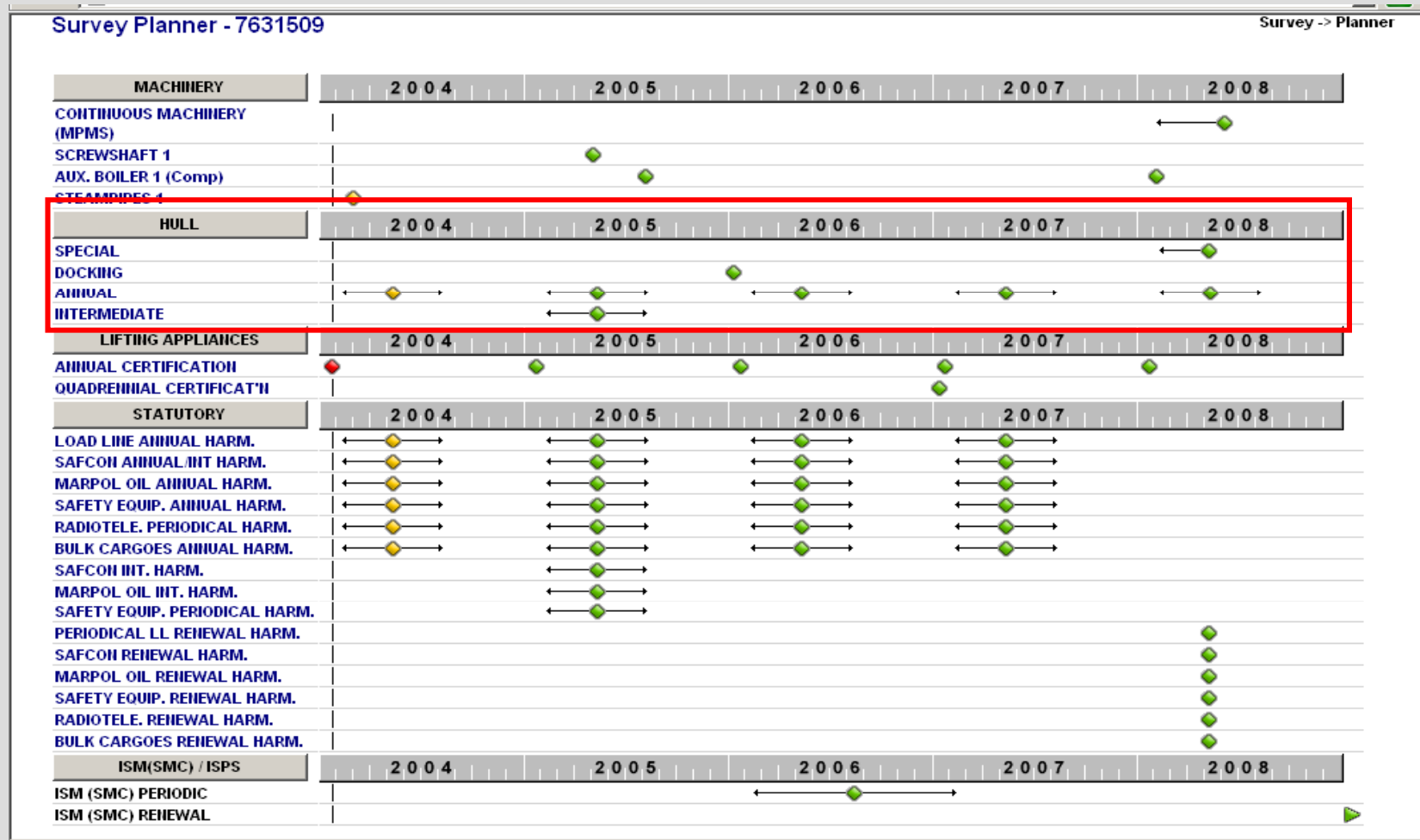
Features, Issues, Risks



Cargo Tank Inspection



Class Survey Schedule – from LR CD live



Cargo Tank Inspection



Special Survey

- **Purpose:**

*To establish the condition of the structure to confirm that the structural integrity is satisfactory in accordance with the Classification requirements, and will remain fit for its intended purpose for another five year period, **subject to proper maintenance** and operation of the ship and to completion of periodical surveys carried out at due dates*

- **Scope:**

Examination all cargo tanks with Close-up inspection as deemed necessary (i.e, depending on condition)

- **Close-up inspection:**

Implies inspection of items within the close visual range of the surveyor

Key Features of Class Surveys

- Independent of inspections carried out by the crew
- Survey (ESP) based on the monitoring of two principal criteria:
 - The condition of the coating
 - The extent of structural corrosion
- Scope of survey inspection is increased on ships which are found to be deteriorating
- Key stage gates in the increase of survey scrutiny are
 - Coating in a “less than good” condition
 - Structure found substantially corroded

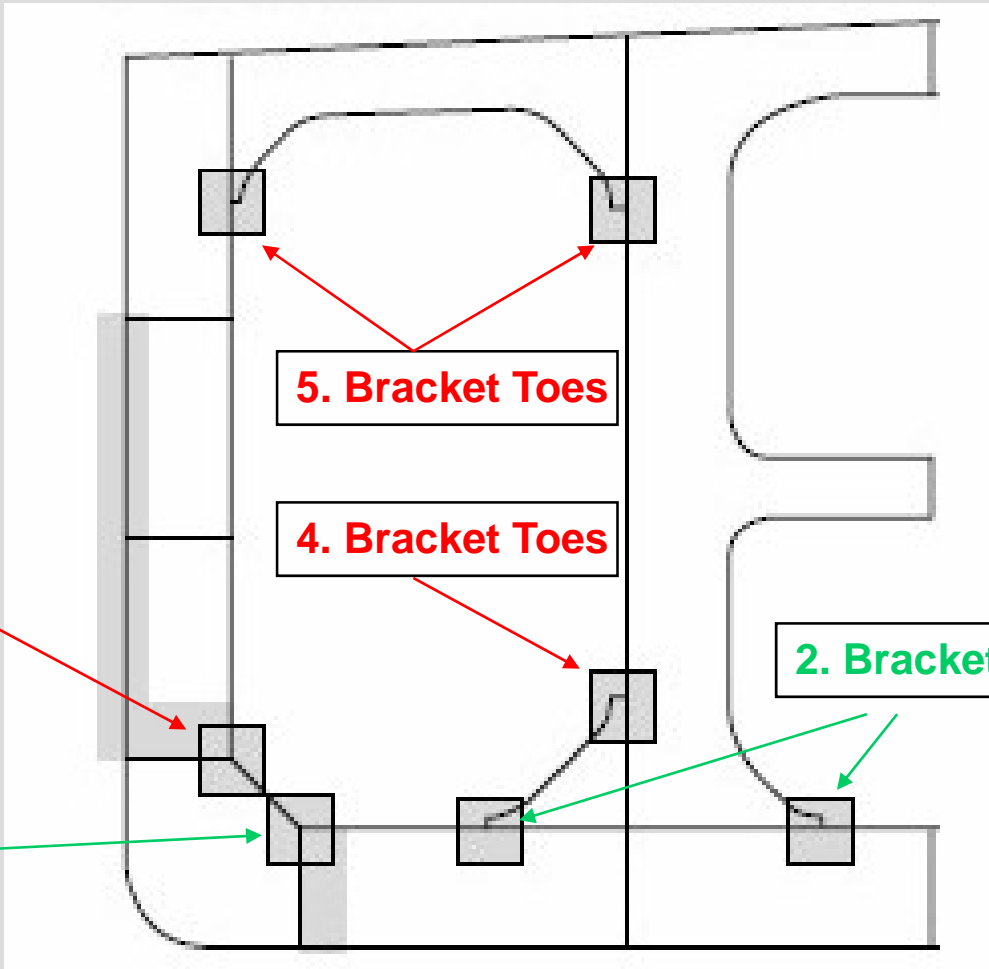
Midship section 160K-450K Tanker – Critical Areas

Steel Grades
A + AH

SG 1.025

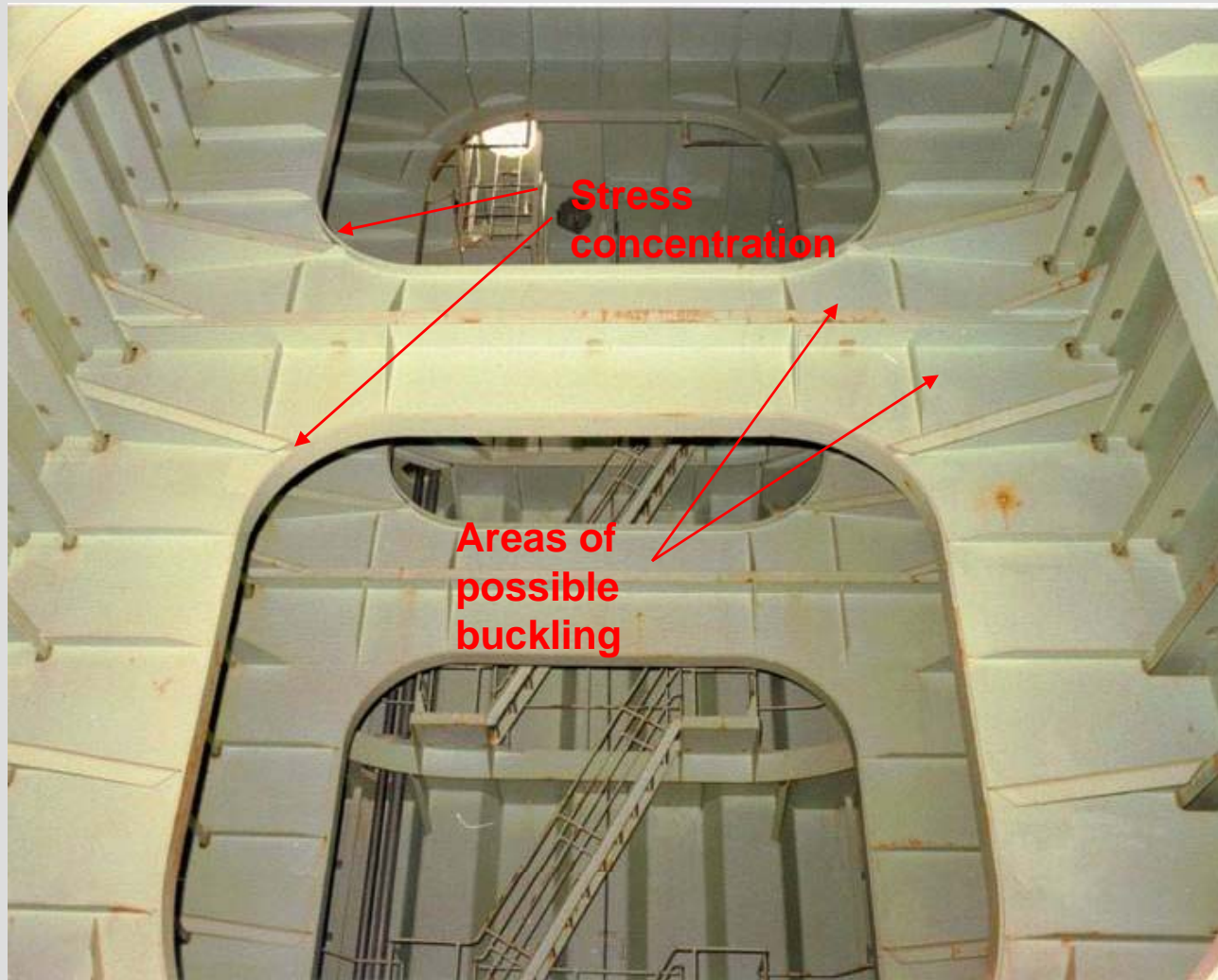
**3. Upper Hopper
Knuckle
Full Pen. Weld**

**1. Lower Hopper
Knuckle
Full Pen. Weld**



Tanker Structures Co-Operative Forum

Cargo Tank Inspection



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Training

- Classroom course
 - Hull Inspection Course
- Distance-learning course
 - Hull Inspection Distance Learning Course on CD-ROM
- Covers
 - Background information on health and safety, inspections, defects and coatings
 - Specific inspection issues for different types of ships



Cargo Tank Inspection

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Some observations on requirements for inspection

- **Desirable to reduce the overall number of inspectors exposed to personal risk of injury**
- **Consider defining scope and purpose of inspections to reduce variability**
- **Improve consistency of inspections by using qualified staff**
- **Scope for Class using crew inspection data is limited by statutory regulation**

Class Cycle for Cargo Tank Inspection

- **5 years: All cargo tanks**
- **7.5 years: Cargo tank inspection depends on findings at 5 years**
- **10 years: All cargo tanks**
- **12.5 years: All cargo tanks**
- **Subsequently every 2.5 years: All cargo tanks**

NB: additional cargo tank inspections may be required at annual surveys depending on condition of the tanks

Training

- Classroom course
 - Hull Inspection, Damage and Repair Course
- Covers:
 - How to identify different types of damage and defects using practical examples and case studies
 - How to understand the causes of damage and defects

MARINE TRAINING SERVICES

HULL INSPECTION: DAMAGE AND REPAIR TRAINING

This three-day course provides the skills returned to help you understand the different types of defects and damage that occur in the structure.

Benefit from learning the reliable inspection techniques that lead to a better understanding of the condition of your ship and how you can help protect your assets.



This course will equip you with reliable inspection techniques used by Lloyd's Register surveys worldwide.

Assessing damage and defects effectively
Identifying defects and damage to ship structure can often be difficult, and deciding if a repair is required is not always obvious. This course will equip you with reliable inspection techniques used by Lloyd's Register surveys worldwide. You will learn how to identify different types of damage and defects using practical examples and case studies, and gain an understanding of their causes. Upon successful completion of the course, you will:

- understand the classification and statutory requirements for hull structural integrity
- understand the requirements for maintenance of steel
- understand the basic structural concepts of a ship's hull
- appreciate the process of fatigue defects
- know how to inspect structure for damage and defects using specific, tried and tested techniques
- be able to identify specific types of defects and damage and understand their cause
- understand the need for thickness measurements
- understand the role played by coatings and anodes
- be able to quantify coating breakdown and anode wastage
- know the difference between various grades of shipbuilding steel
- be able to discuss repair techniques with confidence
- know different repair techniques for specific defects and damage to prevent re-occurrence

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Training

- Classroom course
 - Hull Inspection, Damage and Repair Course
- Distance-learning course
 - Hull Inspection Distance Learning Course on CD-ROM
- Tank Coatings Condition Guide
- Contents
 - How to assess coating condition
 - Contains sample images

TANK COATINGS CONDITION GUIDE

Category Detail	% Breakdown	Overall Rating	EXAMPLE 6
Spot Rust		Coating Condition	GOOD
Light Rust			
Edges			
Weld			
Hard Scale			
General Breakdown			
		Ship Type:	
		Structure:	
		Age:	
		Note:	GOOD close to FAIR Renewed anodes visible



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