1. perspective
   • tanker incident overview
   • identifying the problem

2. tanker industry’s answer
   • tanker officer training standards
The Business Environment – Oil trade increasing

World oil demand 1993-2007
(Million bls/day)

Source: IEA
The Business Environment – Oil trade increasing

World Oil Supply 1900-2005
(Million bls/day)

ROW
Middle East
Western Europe
USA

The Business Environment – Oil trade increasing
Tanker fleet development

- Assumptions for period until 2009:
  - Scheduled phase out for the period: **15.5 m dwt** including 4.2 m dwt that should already have been phased out earlier than 2007
  - Assumed removals 2007 – 2009: **29 m dwt** (including conversion + other demolition)
The Business Environment – Pollution reducing

Tonnes spilt per billion tonne-mile transported

Data source: ITOPF/Fearnleys
Reported tanker incidents reducing – until 2007
(with human error cases increasing?)
Study on incidents of explosions on chemical and product tankers

Inter Industry Working Group - 25 yrs, 35 incidents (fire & explosion in cargo spaces)

1. the most significant contribution to the incidents in question was a failure to follow cargo operation guidelines and procedures (at both shipboard and ship management level). This would point toward a failure within the companies’ safety culture;

2. manning levels were not considered a material factor. Questions were raised however, regarding crew’s competence and training in a number of cases;

3. the incident investigation reports reviewed did not indicate any contradictions or discrepancies within the existing International Safety Guide for Oil Tankers and Terminals (ISGOTT) or the ICS Tanker Safety Guide (Chemicals) or between these guides and SOLAS;

4. industry practices such as chemical spraying or steaming were contributory causes to a number of incidents, with static electricity noted as a possible ignition source in association with such practices;

5. in-tank pump failure was identified as a causal factor in at least one incident and other mechanical sources of ignition, such as from rotating equipment within a cargo tank, might have been the cause in a small number of incidents;

6. establishing and maintaining known tank atmospheres have been shown to be problematic and this has been a contributory factor in many of the incidents;

7. confusion over the exact nature of a particular cargo, due to provision of the wrong Material Safety Data Sheets (MSDS) information, contributed to one incident
Tanker Incident Overview – identifying the problem

Regulatory Response

- Joint Industry Group Proposals to Expand & Enhance T/E requirements
- STCW currently under review by IMO
Oil Company Response

- Currently STCW does not supply the level of comfort required
- Tanker Endorsements do not supply the level of comfort required

Major Casualties within the Tanker Industry confirm the exposure to risk when inappropriate levels of familiarity, expertise & experience are held within the ship-board management team. (TOTAL)

Officer Matrix Requirements (“Time with Company” and “Time in Rank”)

- TOTAL
- KOCH
- DOW
- Conoco Phillips
- Chevron
- Shell

Contradictory and Confusing; who will be next?
Tanker Officer Training Standards (TOTS)

INTERTANKO initiative which:

1. Addresses increasing trend in tanker accidents
2. Provides a coordinated response to oil companies which:
   1. Demonstrates an enhanced level of competency on board (via training and verification process – the essence of TOTS)
   2. Eases compliance with Officer Matrix Requirements

• It is NOT a replacement Tanker Endorsement
• It is NOT an alternative Tanker Endorsement
Tanker Officer Training Standards (TOTS)

- Joint Working Group of the:
  - INTERTANKO Vetting Committee
  - INTERTANKO Human Element in Shipping Committee
  - Endorsed by INTERTANKO Council (March 2007)

- In partnership with:
  - Warsash Maritime Academy
    - Simulator Training/Verification
  - Malaysian Maritime Academy
    - Engineering Skills/Modules
  - MARLINS
    - CBA Verification

But, verification can be run by any externally accredited Maritime Training Centre
Four Elements of the TOTS

1. TOTS: Training Record Books:
   - Time in Rank
   - Time with Company
   - TMSA Compatible

2. TOTS: Computer Based Assessment (CBA)
   - Time in Rank

3. TOTS: Company Verification (CBA)
   - Time with Company

4. TOTS: Ship Specific Practical Simulator Verification/Training
   - Tanker Type Specific
   - Time in Rank Specific
   - TMSA Compatible
1. TOTS: Time in Rank

Three levels of training record book established:

1A. Command Module
1B. Senior Engineer Officers
1C. Junior Officer Tanker Module (Deck and Engine)
1. TOTS: Time in Rank

1A. Command Module

- A.1 Ship Handling & Characteristics
- A.2 Pilotage
- A.3 Mooring Equipment & Operations
- A.4 Passage Planning/Navigation
- A.5 Navigating in Restricted Visibility
- A.6 Heavy Weather Navigation
- A.7 Emergencies, Drills & Fire Fighting Equipment
- A.8 Ship/Shore Interface
- A.9 Ship to Ship Transfer
- A.10 Helicopter Operations
- A.11 Pollution Prevention & Environmental Protection
- B.1 General Tanker Section
- B.2.1 Flammability Composition Diagram
- B.3 Fixed & Portable Gas Detections Systems
- B.4 Enclosed Spaces/Tank Atmosphere Evaluation
- B.5 Familiarisation prior Cargo Operations
- B.6 Cargo Information Personnel Safety – Health

C. CHEMICAL TANKERS
D. PRODUCT TANKERS
E. CRUDE OIL TANKERS
1. TOTS: Time in Rank
1B. Senior Engineer Officers

A.1 Engine Room Operations during manoeuvring
A.2 Engine Room Operations during special circumstances
A.3 Watchkeeping in the Engine Room
A.4 Operation, monitoring and trouble shooting machinery
A.5 Electrical, Electronic and Control Operations
A.6 Maintenance and Repair
A.7 Control of operations and Care of personnel onboard
B.1 Management of the Engineering Department
C. EMERGENCIES, DRILLS & FIRE FIGHTING EQUIPMENT
C.1 Emergencies, Drills & Fire Fighting Equipment.
D. POLLUTION & ENVIRONMENT PROTECTION
D.1 Pollution & Environment Protection
E. GENERAL TANKER SECTION
E.1 General Tanker Section
F. FLAMMABILITY COMPOSITION DIAGRAM
F.1 The Flammability Diagram (Ref: ISGOTT 5th Edition)
G. FIXED & PORTABLE GAS DETECTION SYSTEMS
G.1 Fixed and Portable Gas Detection systems
G.2 Enclosed Spaces/Tank Atmosphere Evaluation
H. FAMILIARISATION PRIOR CARGO OPERATIONS
H.1 Familiarisation prior cargo operations
H.2 Cargo Information-Requirements-Precautions-Personnel Safety-Health Data
1. TOTS: Time in Rank
1C. Junior Officer Tanker Module (Deck and Engine)

A. GENERAL SHIPBOARD OPERATIONS (DECK)
A.1 Ship Handling & Characteristics (Deck)
A.2 Pilotage (Deck)
A.3 Mooring Equipment & Operations (Deck)
A.4 Emergencies, Drills & Fire Fighting Equipment
A.5 Pollution Prevention & Environmental Protection
B. NAVIGATION (DECK)
B.1 Passage Planning/Navigation/Chart Correction
B.2 Navigating in Restricted Visibility (Deck)
B.3 Heavy Weather & Ice Navigation (Deck)
C. GENERAL TANKER SECTION
C.2.1 Flammability Composition Diagram
C.3 Fixed & Portable Gas Detection Systems
C.4 Enclosed Spaces/Tank Atmosphere Evaluation
C.5 Familiarisation Prior Cargo Operations (Deck)
C.6 Cargo Information-Precautions-Personnel Safety
D. CHEMICAL TANKER SUPPLEMENT
E. PRODUCT TANKER SUPPLEMENT
F. CRUDE OIL TANKER SUPPLEMENT
G. GENERAL SHIPBOARD OPERATIONS
G.1 Engine room operations during Manoeuvring
G.2 Watchkeeping in the Engine Room (Engine)
G.3 Operation, monitoring troubleshooting Machinery
G.4 Maintenance and Repair
G.5 Control of Operations and Care of Persons
H.1 Management of the Engineering Department
I. POLLUTION & ENVIRONMENT PROTECTION
1. TOTS: Training Record Books

1. TOTS: Time in Rank

Human Element addressed in each record Book:

- Situational awareness
- Planning & Decision making
- Communications
- Teamwork
- Emotional climate
- Stress
- Managing Stress
- Commercial Organisational Pressures & Morale
- Fatigue
1. TOTS: Time with Company
Plus, one generic record book
1D. Generic Record Book Module

Template Training Book: Companies to develop as Company Specific

Guidance includes:
- Company operating systems
- ISM Procedures
- Company Security Requirements
- Occupational Health & Safety
2. TOTS: Time in Rank

- CBA (CD-ROM) to verify candidates understanding of “Time in Rank” tasks
  - CBA = ~2000 Questions: Total Dataset
  - 18-20 CBA assessments per Record book

- TOTS Time in Rank Certification follows the Candidate
3. TOTS: Time with Company

• CBA based company verification process to verify candidates understanding of “Time with Company”
  – Tailor made Company Specific

• If the Officer changes company they must re-train for Time in Company
4. TOTS: Ship Specific Practical Simulator Verification and Training (1)

- Simulator courses designed to meet TOTS standard
- Can be run by any externally accredited Maritime Training Centre
- Trains & Verifies tanker type knowledge with 6 courses in three areas...
4. TOTS: Ship Specific Practical Simulator Verification and Training (2)

- 6 TOTS Specific Model Simulator Courses

4A Chemical Tanker Simulator Model Training Course
4B Chemical Tanker Simulator Model Verification Course

4C Product Tanker Simulator Model Training Course
4D Product Tanker Simulator Model Verification Course

4E Crude Oil Tanker Simulator Training Course
4F Crude Oil Tanker Simulator Verification Course
• FAQ and detailed summary brochure near completion
• TOTS Working Books: first completed, following three final revision
  – CD-ROMs for CBA under production
• Meetings with OCIMF, Chevron and SIRE Focus Group (Chevron, BP, Shell, Total, ExxonMobile) – positively received
• Target date for launch is 22\textsuperscript{nd} April, Istanbul Council meeting
thank you

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