South and Central America Regional Marine Forum – Quito

October 2018

OCIMF

Welcome and Safety Briefing

Gonzalo S Mera Truffini – YPF – Regional Champion

Safety Moment

https://www.youtube.com/watch?v=5Gtio4V1L3o

Welcome and Introduction

Rob Drysdale – Director (OCIMF)

OCIMF Milestones

Key Events in the History of OCIMF

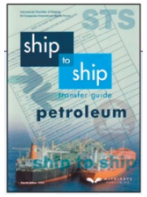
1956/57 and 1967/75: Suez Canal Closed

1967: Grounding of Torrey Canyon

1970: OCIMF was formed

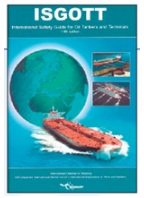
IMO

1971: Consultative status at IMO

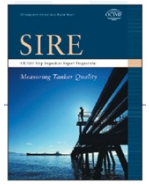


1975: First OCIMF guideline published

1977: London branch office established



1978: ISGOTT published



1993: SIRE Programme Launched

2000: SIRE Inspector Training and Accreditation

2004: TMSA Programme Launched

2010: OVID Programme Launched

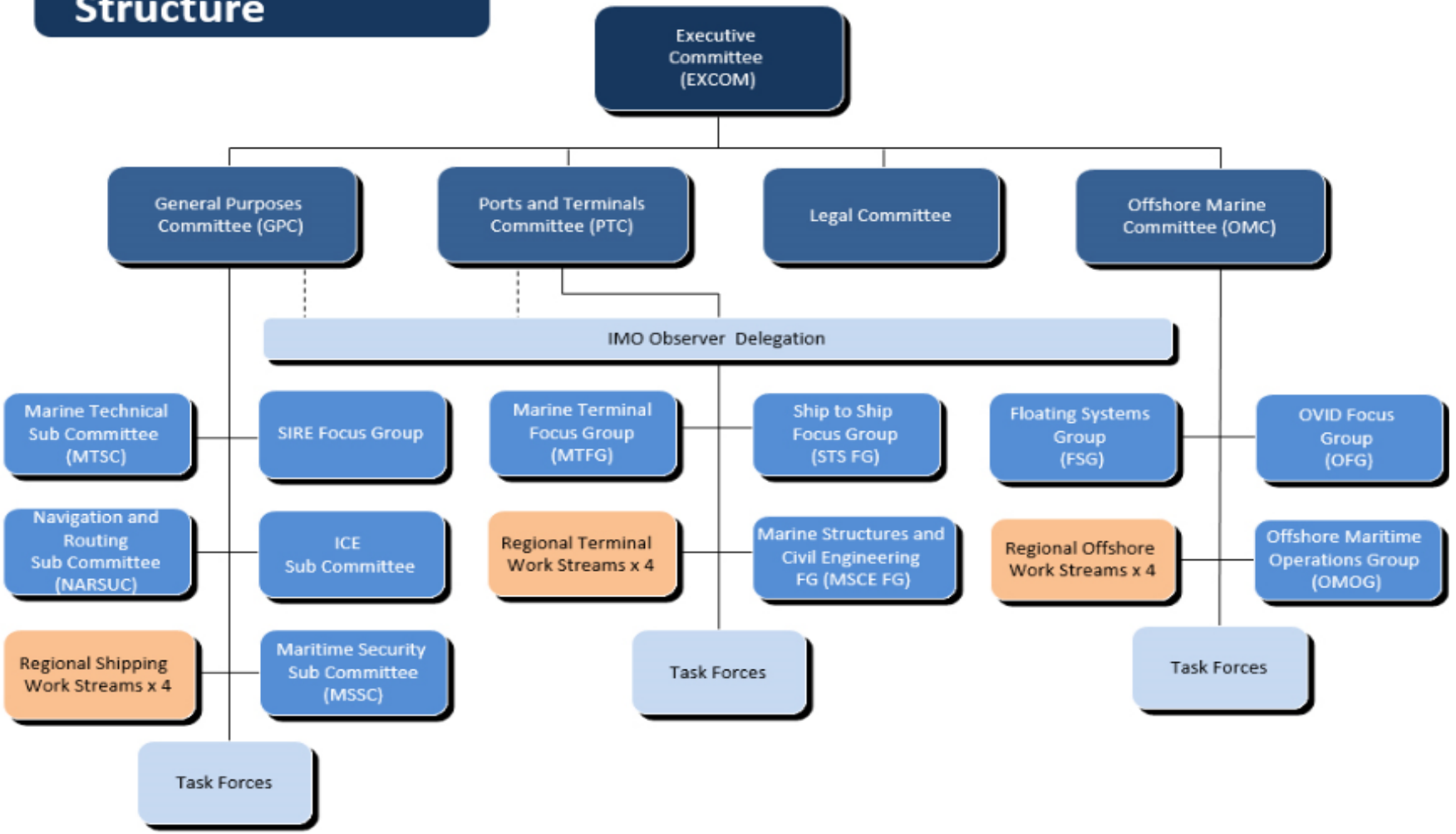
2013: MTIS Programme Launched

Seatrade AWARDS

2016: Pilot for Maritime Trade Information Sharing Centre – Gulf of Guinea (MTISC-GoG) ends

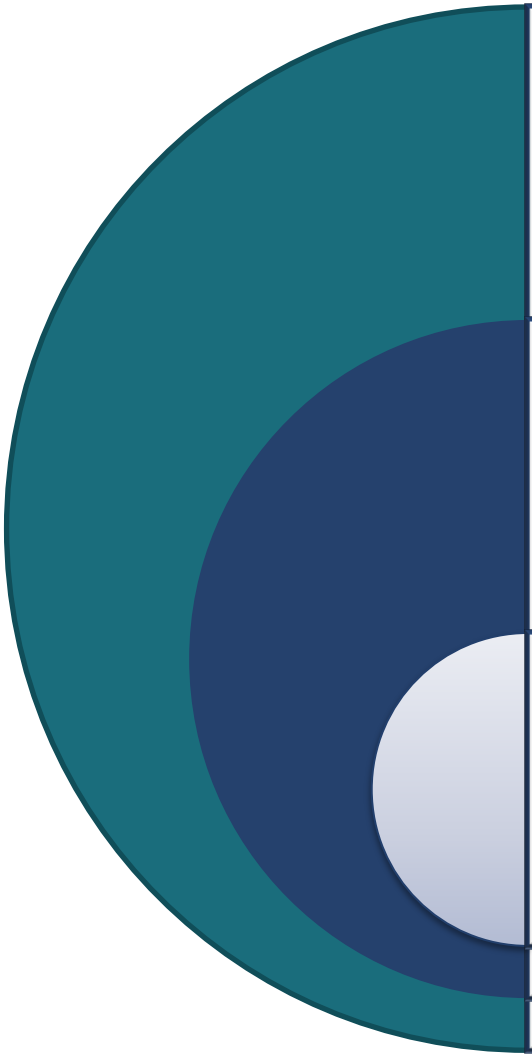
OCIMF Structure

OCIMF Committee Structure



OCIMF Objectives

In fulfilling its mission, OCIMF will:



Engage	• Identify and seek to resolve Safety, Security and Environmental issues affecting the industry through engagement with OCIMF Members and external stakeholders
Promote	• Develop and publish Guidance, Recommendations and Best Practice by harnessing the skills and experience of members & the wider industry. • Provide tools and facilitate exchange of information, to promote continuous improvement in safe & environmentally sustainable operations.
Advocate	• Contribute to the development, and encourage the ratification and implementation of international conventions and regulations. • Influence industry adoption of OCIMF guidance, recommendations & best practice.

Regional Marine Forum Objective

- Engage with OCIMF and non OCIMF members
- Encourage industry to utilize and be aware of the work of OCIMF
- Learn from one another
- Review regional challenges

Critical Success Factors

- Actively participate
- Make sure your voice is heard and your points communicated
- Ask Questions
- Network

Anti-Trust/Competition Law Guidance - DO NOT

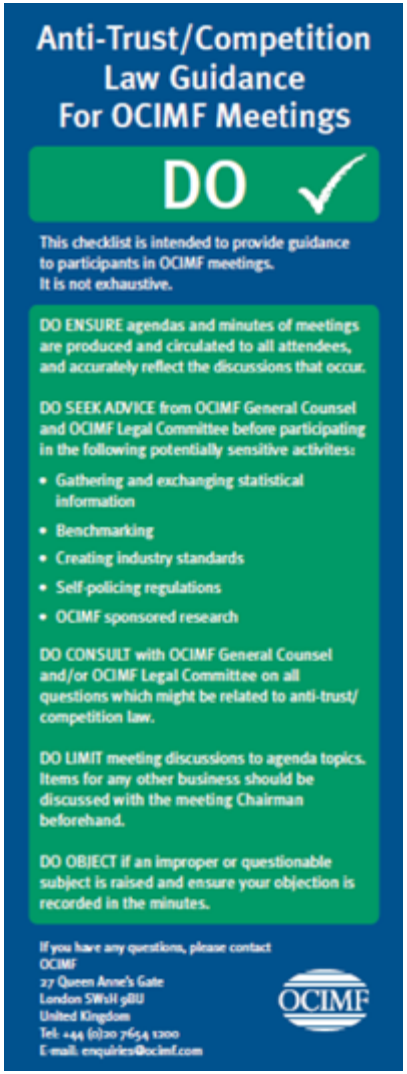
Discuss the following topics:

- Prices/Freight Rates, Production, Capacity or inventions
- Sales/purchases, Costs, Future business plans
- Matters relating to individual customers/suppliers
- Employee compensation, benefits, remuneration etc.

Make any agreement on, or take a decision to conduct the following activities:

- Fix Sale or purchase prices
- Fix other terms of sale or purchase
- Restrict capacity or output
- Refrain from supplying a product or service
- Limit quality competition or research
- Divide Markets or customers
- Exclude competing companies from a market
- Blacklist or boycott customers or suppliers

Anti-Trust/Competition Law Guidance – DO



Limit meeting discussions to agenda topics, Items for any other business should be discussed with the meeting Chairman beforehand.

Object if an improper or questionable subject is raised and ensure your objection is recorded in the minutes.

Seek Advice from OCIMF General Counsel and OCIMF Legal Committee before participating in the following potentially sensitive activities:

- Gathering and exchanging statistical information
- Benchmarking
- Creating Industry Standards
- Self-policing regulations
- OCIMF sponsored research
- Consult with OCIMF General Counsel and OCIMF Legal Committee on all questions which might be related to anti-trust/competition law

Formalities & Agenda

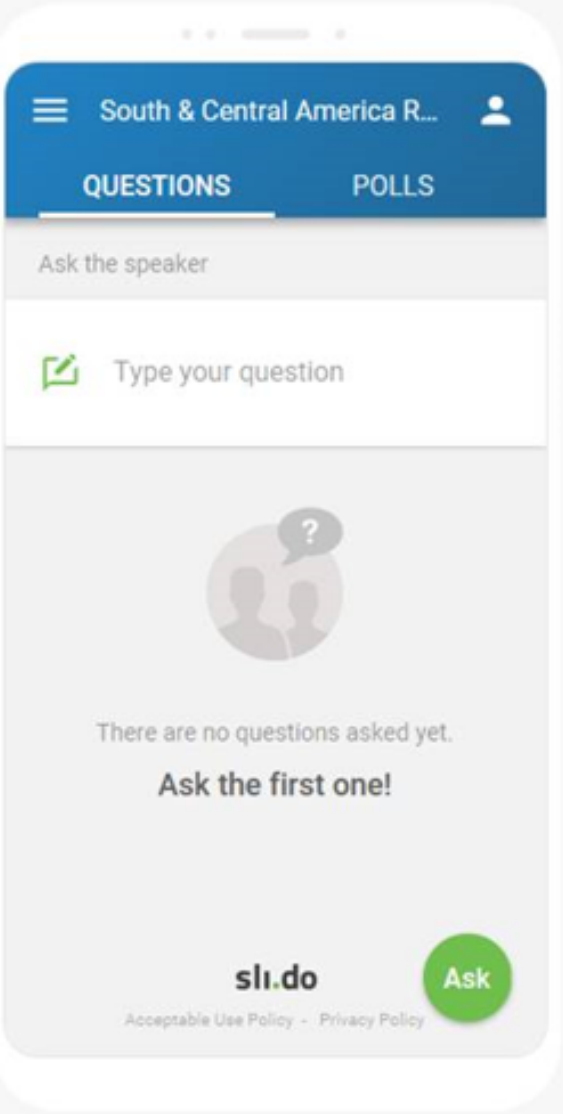
Rob Drysdale – Director

1 – join to network – Swissotel_Quito
2 – open Internet browser
3 – Enter www.Swissotel.com
4 – Type user ID and password as below

User name / ID = **Swissotel**

Password = **Quito2018**

Q&A Sessions - Slido



How to join your event

1. Open a browser on any laptop, tablet or smartphone
2. Go to **slido.com**
3. Enter the event code **#SCARMF2**

Tip: Try sending a few questions to see how it works in action.

Customize code

How to introduce Slido

Meeting Practicalities

Business Cards

Sign Attendance Sheet

Cell Phones - *Respectful*

Group Photo

Agenda

Time	Activity
09:10-10:40	New OCIMF Publications
10:40-11:00	Coffee Break
11:00-12:30	OCIMF Programmes / Working Groups
12:30-13:30	Lunch
13:30-15:00	Best Practice and Lessons Learned
15:00-15:20	Coffee Break
15:20-Close	OCIMF Updates

A Voice for Safety

New OCIMF Publications and Working Groups

Cargo Guidelines for F(P)SO's First Edition 2018

Tony Wynne – Technical Adviser (Nautical)

Cargo Guidelines for F(P)SOs

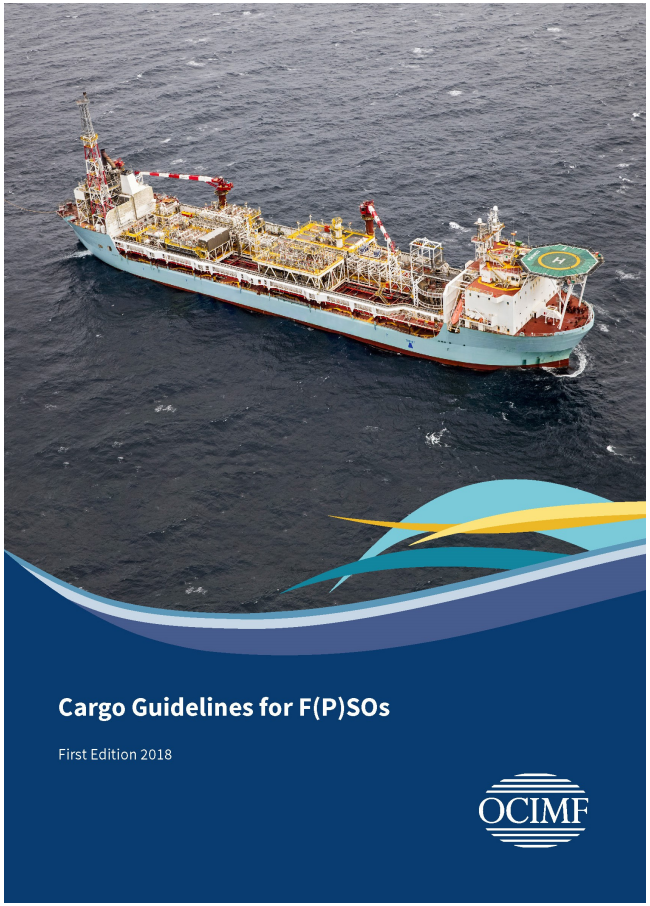
The Cargo Guidelines for F(P)SOs is a new OCIMF publication.

This new publication provides recommendations, best practice and guidance on the safety of cargo handling and associated operations on board F(P)SO facilities

This new publication offers guidelines for safe cargo handling and associated operations on board F(P)SOs. It supplements existing guidance in the International Safety Guide for Oil Tankers and Terminals (ISGOTT), by addressing activities and procedures that are either outside the scope of ISGOTT or are conducted differently on F(P)SOs, which often have multiple operations taking place at the same time.

The guidance is for F(P)SO operators, but will also be of interest to anyone involved in the design and management of F(P)SOs.

Published: July 2018.



Why a new Guideline?

The latest edition of ISGOTT contains a note that:

"The Guide is not intended to encompass offshore facilities including Floating Production Storage and Offloading Units (FPSOs) and Floating Storage Units (FSUs); operators of such units may, however, wish to consider the guidance given to the extent that good tanker practice is equally applicable to their operations."

Fundamental differences exist between the operation of an F(P)SO and a tanker:

Tanker	F(P)SO
Dry-docks every 5 years	Remains on station for several years
Loads cargo and discharges cargo sequentially; can use ballast voyages for in-tank maintenance activities.	May be required to concurrently undertake oil and gas processing, loading, water management, discharging and in-tank maintenance activities.

Existing industry guidance for conventional tankers is not always suitable for F(P)SOs because it does not address the safe management of the concurrent activities

Cargo Guidelines for F(P)SOs

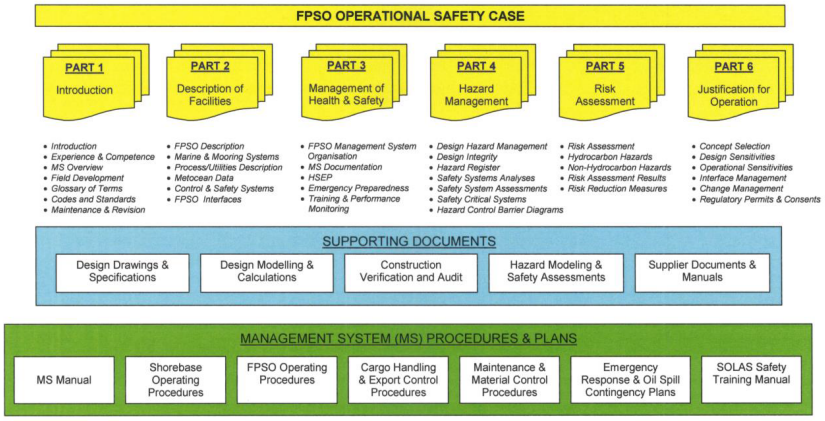
Contents

General Contents Overview

Section 1

Safety Management

- Trading tankers of 500 gross tonnes and above are required to comply with the International Safety Management (ISM) Code. The Code provides an international standard for the safe management and operation of ships and for pollution prevention.
- ISM does not typically apply to F(P)SOs and there is no equivalent international standard addressing their operation.
- In cases where ISM is not applicable, operators should develop and implement a safety management system (SMS) that demonstrates that risks are mitigated to a level that is as low as reasonably practicable.



General Contents Overview

Section 2

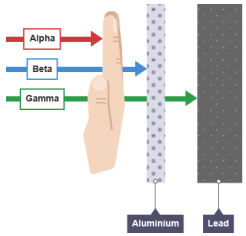
Hazardous Materials Associated with F(P)SO Operations

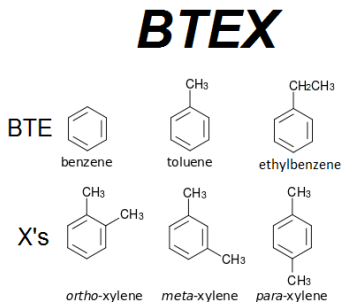
F(P)SO's continuously receive and manage hydrocarbons and associated hazardous materials.

Over time, the composition of the incoming stream may change with increased concentrations of hazardous elements such as:

- Hydrogen sulphide (H2S)
- Naturally occurring radioactive materials (NORMs)
- Mercury
- VOCs and BTEX

  Benzene, toluene, ethyl benzene and xylene (BTEX) found in crude oils are all considered 'volatile organic compound's (VOCs).
- Methanol
- Biocide chemicals





General Contents Overview

Section 3

General Hazards Associated with F(P)SO Operations

Many of activities, conducted in the process, or topsides areas of an F(P)SO can introduce hazards to the operation not typically experienced on tankers or offshore platforms.

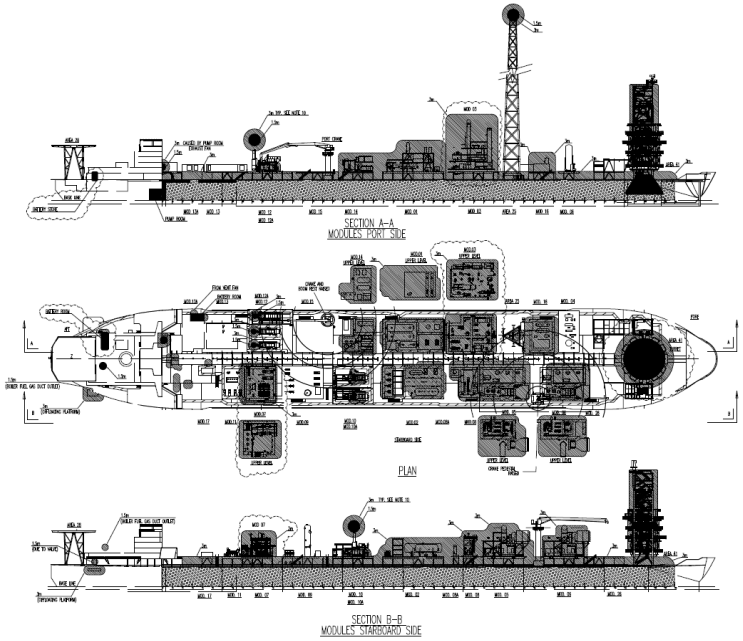
Identification of these hazards during design and offshore in the field, supported by appropriate risk analysis, should result in the development of appropriate prevention and mitigation measures.

Hazardous zones which have the potential to contain an explosive atmosphere should be identified and documented.

Zone 0 - In which ignitable concentrations of flammable gases or vapours:
- Are present continuously.
- Are present for long periods of time.

Zone 1 - In which ignitable concentrations of flammable gases or vapours:
- Are likely to be present under normal operating conditions.
- May be present frequently because of repair, maintenance operations or leakage.

Zone 2 - In which ignitable concentrations of flammable gases or vapours:
- Are not likely to be present in normal operating conditions.
- Are present for only a short period of time.
- Become hazardous only in case of an accident or an unusual operating condition.



General Contents Overview

Section 3
General Hazards Associated with F(P)SO Operations

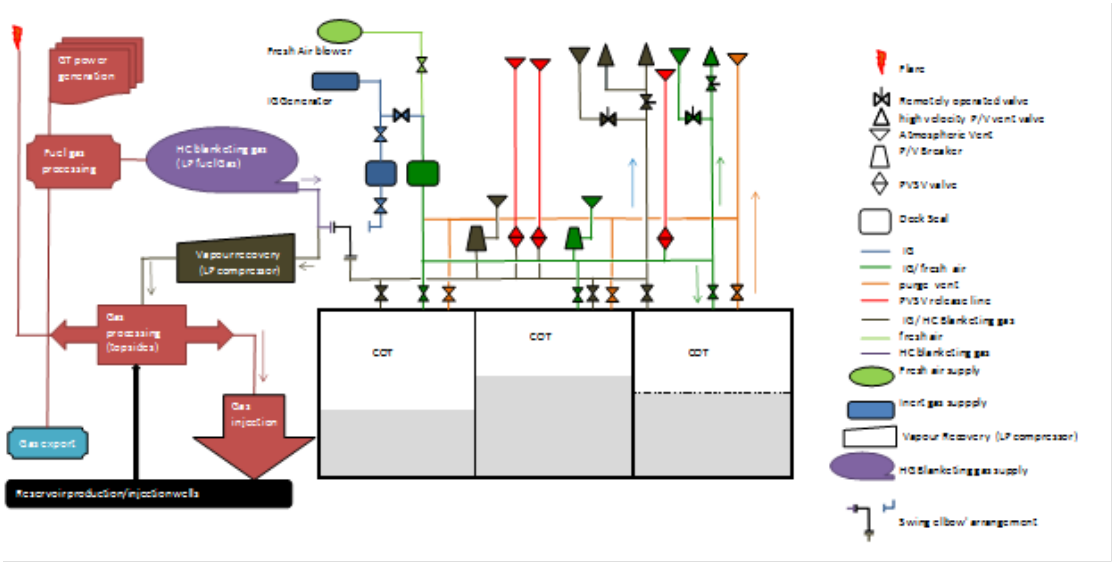
- Control of potential ignition sources
  - *Naked flames*
  - *Power generators and other deck mounted machinery*
- Communications equipment
  - *F(P)SO radio equipment*
  - *Radar equipment*
  - *Mobile telephones and tablets*
  - *Telemetry systems for Emergency Shutdown Systems*
- Use of tools
  - *Grit blasting and mechanically powered tools*
  - *Pressure washing equipment*
- Electrical power tools and equipment
  - Non-intrinsically safe portable electrical equipment (e.g. cameras, boroscope)
- Lifting equipment
  - *A control process for portable lifting equipment should be developed. It should contain a means of tracking the issue and location of the lifting gear in order to quickly locate lifting gear for inspection.*

General Contents Overview

Section 4
Storage Tank Atmosphere Control and Venting Arrangements

Storage tank atmosphere control

- Nitrogen
- Inert gas
- Hydrocarbon gas used for the gas blanketing of storage tanks
    - *Vapour recovery systems on F(P)SOs typically accompany the hydrocarbon blanketing gas systems and are part of the original design.*

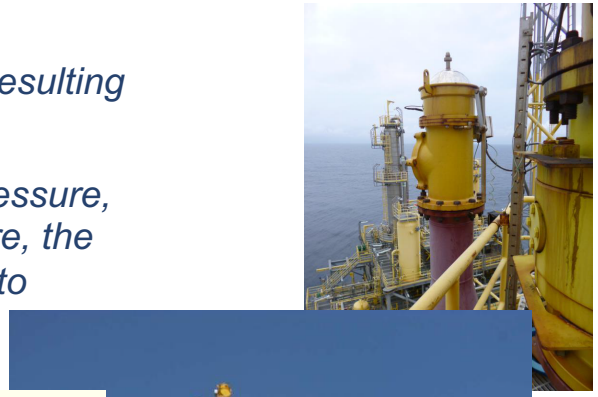


General Contents Overview

Section 4
Storage Tank Atmosphere Control and Venting Arrangements

Venting arrangements

- *An F(P)SO continually loads crude oil to the storage tanks resulting in the inert gas blanket within the tanks being compressed.*
- *When the atmosphere within the tanks reaches a certain pressure, below that which could cause damage to the vessel structure, the mixture of inert gas and hydrocarbons will be safely vented to atmosphere, unless a vapour recovery system is fitted.*



Subjects that have to be looked at during the design phase:

- Vent capacity
- Vent location
- H2S considerations
- Gas monitoring
- Pyrophoric iron sulphide

General Contents Overview

Section 5
F(P)SO Cargo Operations

Since an F(P)SO may typically be on station and in continuous service for the life of the oil field, often in remote locations, consideration should be given to the following:

- *In-tank integrity inspections.*
- *Computer based integrity predictive and monitoring tools.*
- *Underwater Inspection in Lieu of Drydocking (UWILD).*
- *Stress and stability considerations caused by cyclical loading.*
- *In-tank corrosion prevention, including cathodic protection and coatings.*

Storage tank alarms and overfill protection

- *Process shutdown*
- *Designated “crash tank”*

Simultaneous operations

- *The development of a SIMOPS matrix and the incorporation of it into the F(P)SO’s work management system will help safely manage routine and non-routine SIMOPS*

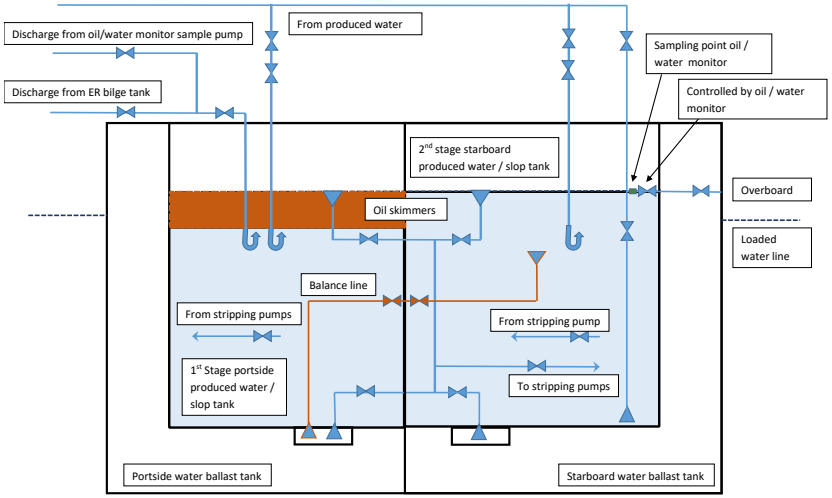
General Contents Overview

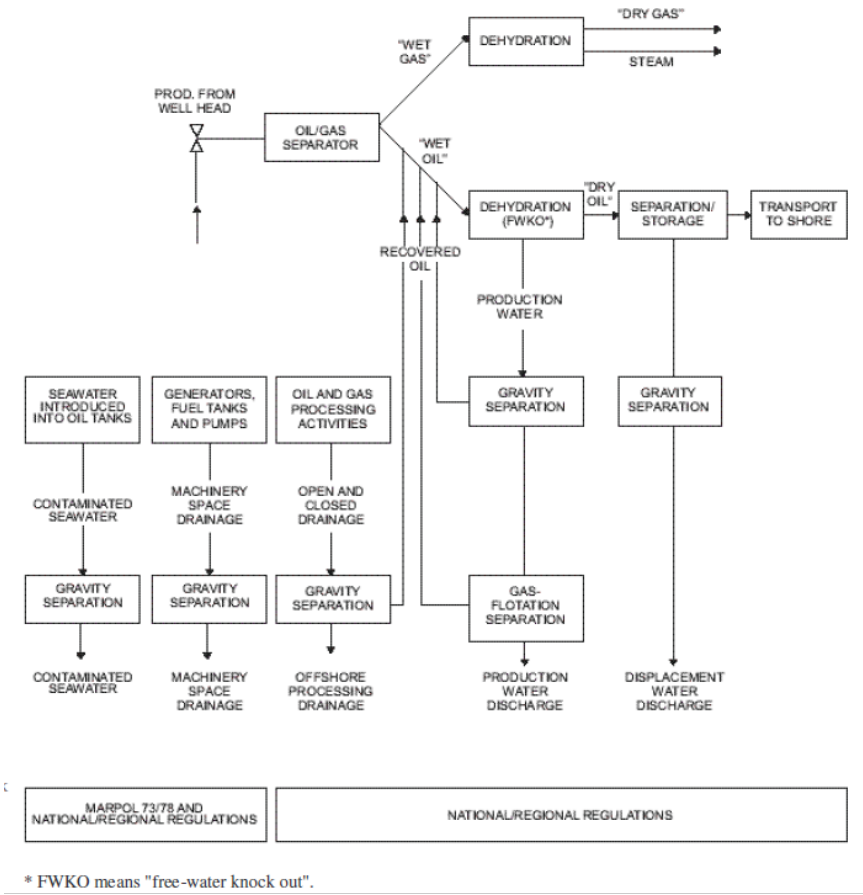
Section 6

Water Management

Compared with trading tankers, F(P)SOs have to deal with considerably more types of oil and water mixtures as part of the tank management of the facility.

- Processed well stream fluids
  - Off-spec crude oil
  - Off-spec produced water
- Water washing of storage tanks
- Open and closed drain systems
- Machinery space bilge water





General Contents Overview

Section 7
Crude Oil Washing (COW)

The reason for COW on F(P)SOs is not different from that of trading tankers.

What is different is . . .

- *Isolation philosophy*
- *Preventative maintenance measures*
- *Removal of tank cleaning machines*

General Contents Overview

Section 8
Tank Cleaning and Gas Freeing for Entry

Water washing and gas freeing onboard F(P)SOs should always be undertaken in accordance with the guidance contained in ISGOTT.

So, where do we differ from tanker operations?

- *There may be a build-up of 'muck' within storage tanks as a result of the continuous introduction of sediments originating from well fluids, sand, NORMs, completion fluids and tank corrosion.*
- *At the conclusion of the washing operations, the wash water can be processed in the produced water stream or via the F(P)SO's oil/water separator,*
- *Residual oil can be reintroduced into a storage tank stream.*
- *On F(P)SOs, it is best practice to use fixed devices to gas free storage tanks. However, portable units may be employed to maintain the gas free environment and these will typically be electrically driven.*

General Contents Overview

Section 9
Control of Work in Storage and Ballast Tanks

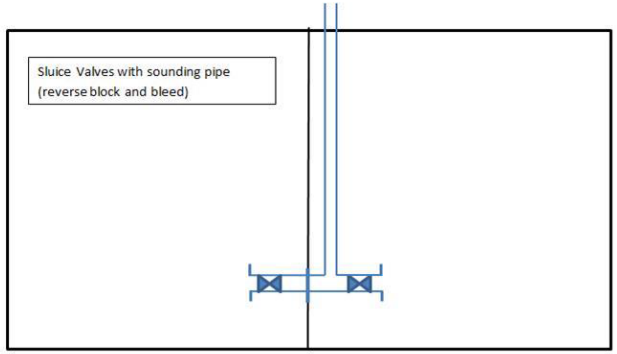
Preparation of tanks for entry

Enclosed spaces on F(P)SO's should be prepared in accordance with ISGOTT guidance and Sections 7 and 8.

Tank entry procedures

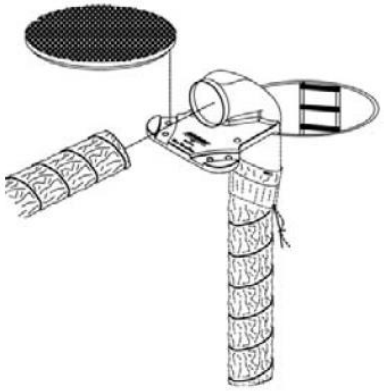
ISGOTT provides guidance for confined space entry and should be used as the base guidance for preparing and entering tanks on F(P)SOs.

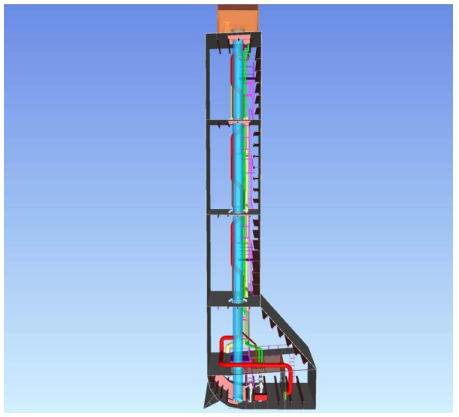
Isolation practices that are used on tankers may not provide the same level of protection aboard an F(P)SO and wherever practicable, positive isolations should be used.

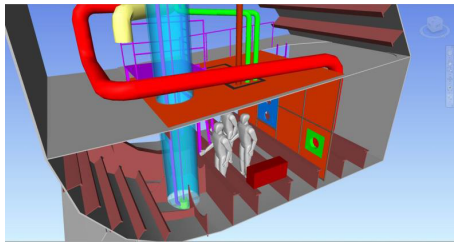


General Contents Overview

Section 9
Control of Work in Storage and Ballast Tanks







Tank entry procedures

- *Ventilation arrangements*
- *Lighting*
- *Access arrangements*
- *Emergency evacuation (3D modelling)*

Hot work inside tanks

- *By cleaning the complete tank*
- *By cleaning the area above, below and on either side of the work space, utilising fire blankets to contain weld or burn spatter and molten material*
- *By working in a habitat with a positive pressure*

General Contents Overview

Section 9
Control of Work in Storage and Ballast Tanks

Tank inspections

- *Inspection of tanks by man entry*
- *Inspection of tanks with mini ROVs and drones*

De-mucking of tanks

- *Typical sediments found are:*
  - *Wax*
  - *Sand*
  - *Oilfield Scale*
  - *NORMs*
  - *Heavy metals*
  - *Sulphur*
  - *Calcium Naphtenate*
  - *Other solidified/calcified deposits*
- *Removal of sediments by:*
  - *Air vacuum eduction system*
  - *Slurry pumping system*
  - *Portable winch and sludge baskets/bags*

General Contents Overview

Appendix A Example of a SIMOPS decision making matrix

SIMOPS Decision Matrix for Storage tank Management Normal Producing Operations Assumed		Tank Cleaning/Gas Freeing	Maintenance COW	Confined Space Entry	Vertical Tank Entries	Producing	Night Ops	Internal Hydrocarbon Transfers	Helo Operations	Flare Boom - Cold Venting	Hot Work (Classed Area) [1]	Abrasive Blasting/Coating [1]	Fire System Inoperable	Safety Device Testing	Engine Driven Equipment & Vehicles [1]	Work over water/Work at Heights	Hydrocarbon Source (Break containment) [1]	Rigging [1]	Routine Crane Activities	Heavy/Critical Crane Activities [1]	Heavy lift over wellbay [1]	Major construction activities	Drilling completions - Workover, Wireline [1]	Rig Skid	BOP Movement	Coiled Tubing Unit [1]	Electrically Fired Explosives Operations [2]	Well Testing/Pressurizing(other than test separator)	Well Stimulation [1]	Diving Operations	ROV Operations	Ballast Operations	Derrick Barge Lift	Life Boat/FRC Testing	Tanker Loading (Buoy)	Tanker Loading (Tandem)	Load/Unload Supply Vessel
OPERATIONS	Tank Cleaning/Gas Freeing	-	A																																	
	Maintenance COW	1	A	B																																
	Confined Space Entry	2	A	R1	C																															
	Vertical Tank Entries [1]	3	R2	R1	R2	D																														
	Producing	4	R1	A	R1	A	E																													
	Night Ops	5	A	A	R1	A	A	F																												
	Internal Hydrocarbon Transfers	6	A	A	R2	R1	A	A	G																											
	Helo Operations	7	A	A	A	A	A	R2	A	H																										
	Flare Boom - Cold Venting	8	A	A	R2	R2	A	A	A	R2	I																									
	Hot Work (Classed Area) [1]	9	P	P	R2	R2	R1	A	R2	A	p	J																								
	Abrasive Blasting/Coating [1]	10	R1	A	R1	R1	R1	A	R1	A	p	A	K																							
	Fire System Inoperable	11	P	P	R2	R2	P	A	P	R2	p	p	P	L																						
	Safety Device Testing	12	P	A	R1	R1	A	R2	A	A	R1	R1	R1	A	M																					
	Engine Driven Equipment & Vehicles [1]	13	R3	A	R1	R1	R1	A	R1	A	R1	A	A	R2	R1	N																				
	Work over water/Work at Heights	14	A	A	A	A	A	R2	A	A	A	A	A	A	A	A	O																			
	Hydrocarbon Source (Break containment) [1]	15	A	A	R2	R2	A	R1	A	A	A	R1	R1	P	P	R1	A	P																			
	Rigging [1]	16	A	A	R2	A	A	A	A	A	A	R1	R1	R2	R1	R1	A	A	Q																	
	Routine Crane Activities	17	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	R																
	Heavy/Critical Crane Activities [1]	18	A	A	R1	A	A	R2	R1	R1	R1	A	A	R2	A	A	R1	R1	A	R1	S															
	Heavy lift over wellbay [1]	19	R1	A	R1	A	A	R2	A	A	A	A	A	P	A	R1	R1	R1	R1	R1	R2	T														
	Major construction activities	20	R2	A	A	A	A	R1	A	A	R1	A	A	A	A	A	A	R2	A	A	A	A	U													
	Drilling completions - Workover, Wireline [1]	21	A	A	R2	A	A	A	A	R1	A	R1	R1	P	R1	R1	A	R1	P	R2	R2	P	R2	V												
	Rig Skid	22	R2	A	P	A	A	R1	R1	A	A	A	A	A	A	A	A	A	A	R1	P	P	R1	P	W											
	BOP Movement	23	R1	A	R1	A	A	R1	R1	A	A	A	A	P	A	A	A	A	A	R1	R1	R1	R1	P	P	X										
	Coiled Tubing Unit [1]	24	R1	A	R2	A	A	A	A	A	A	R2	R1	P	R2	R1	A	R1	P	R2	P	P	R2	R2	P	A	Y									
	Electrically Fired Explosives Operations [2]	25	P	P	P	P	R1	R1	P	P	P	R1	A	p	R1	A	P	A	P	P	P	P	P	R2	P	P	R2	Z								
	Well Testing/Pressurizing(other than test separator)	26	R2	A	R2	A	A	A	A	A	A	A	A	p	R1	R1	A	R1	P	R1	R1	R1	R1	R1	A	A	A	R2	AA							
	Well Stimulation [1]	27	A	A	R2	A	A	A	A	A	A	R2	A	p	R2	R1	A	R1	R1	A	A	R2	A	R1	A	R2	R1	P	A	BB						
MARINE	Diving Operations	28	R2	A	R2	A	A	R2	A	A	p	A	A	A	A	A	R1	A	A	R1	R2	R1	R1	R1	A	A	A	P	A	A	CC					
	ROV Operations	29	R2	A	R2	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	A	R1	DD			
	Ballast Operations	30	R1	A	R1	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	P	R1	A	A	A	A	P	A	A	A	A	EE			
	Derrick Barge Lift	31	R2	A	A	A	A	R1	A	R1	R2	A	A	A	A	A	R1	A	A	R1	R2	R1	A	A	A	A	A	P	A	A	R2	R1	A	FF			
	Life Boat/FRC Testing	32	A	A	R2	R2	A	P	A	R1	P	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	A	P	A	A	R1	A	A	A	GG		
	Tanker Loading (Buoy)	33	A	A	R1	A	A	A	A	A	A	A	A	p	A	A	A	A	A	A	R1	R1	A	P	A	A	A	P	A	A	A	A	A	A	A	HH	
	Tanker Loading (Tandem)	34	A	A	R1	P	A	A	A	A	P	P	A	p	A	A	R1	A	A	A	P	R2	R1	P	A	A	A	P	A	A	P	R1	A	R2	R1	P	II	
	Load/Unload Supply Vessel	35	A	A	R1	R1	A	A	A	A	R2	A	A	A	A	A	R1	A	A	A	R1	A	R1	A	A	A	A	P	A	A	R1	A	A	R1	A	A	R1	JJ
	Flammable Liquid Transfer - Supply Vessel	36	A	A	R1	A	A	R1	A	A	R2	P	P	p	R1	R1	R1	A	A	A	R1	A	R1	A	A	A	A	P	A	A	R1	A	A	R1	A	A	R2	R1

[1] within 85 feet (26 m)

[2] Radio silence required

P	SIMOPS Prohibited	R1	OIM/PIC Approval
R	SIMOPS Restricted	R2	Ops Supt. Approval
A	SIMOPS Allowed		

A Voice for Safety

Static Towing Assembly

Filipe de Santana – SCRAMF2 – Quito, Ecuador

OCIMF

Background

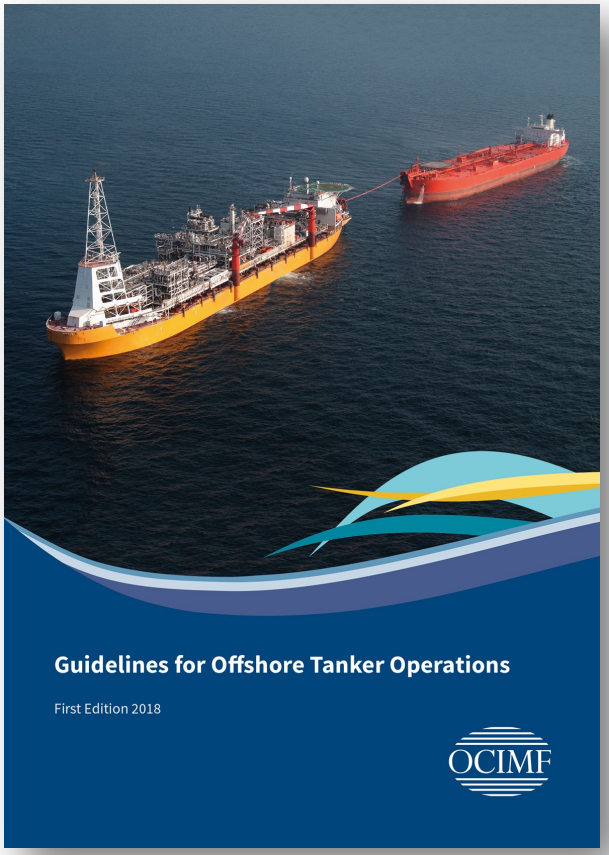
- The majority of the incidents presented were explained by failure at station keeping procedures.
- Identified a gap in the guidelines with respect this phase of the operation.
- Workgroup was established for development of an information paper to be set between SLOM and OCIMF.

Background

Static Towing Operational Aspects

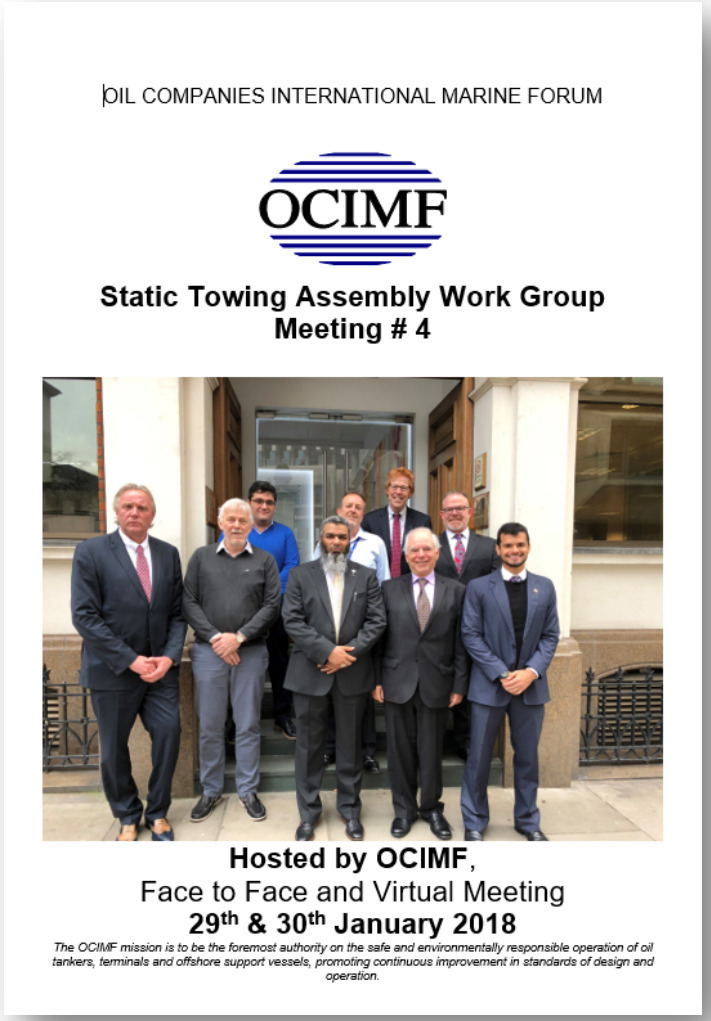
- Station keeping ⇒ operational factors;
- Safe operating positions and sectors;
- Pull-back tugs ⇒ operational considerations;
- Competence of offshore operations personnel;
- Communication requirements for operations;
- Etc…

Guidelines for Offshore Tanker Operations, 1st Edition



What about the **link between tugboat** and **assisted vessel**?

Static Towing Assembly Work Group

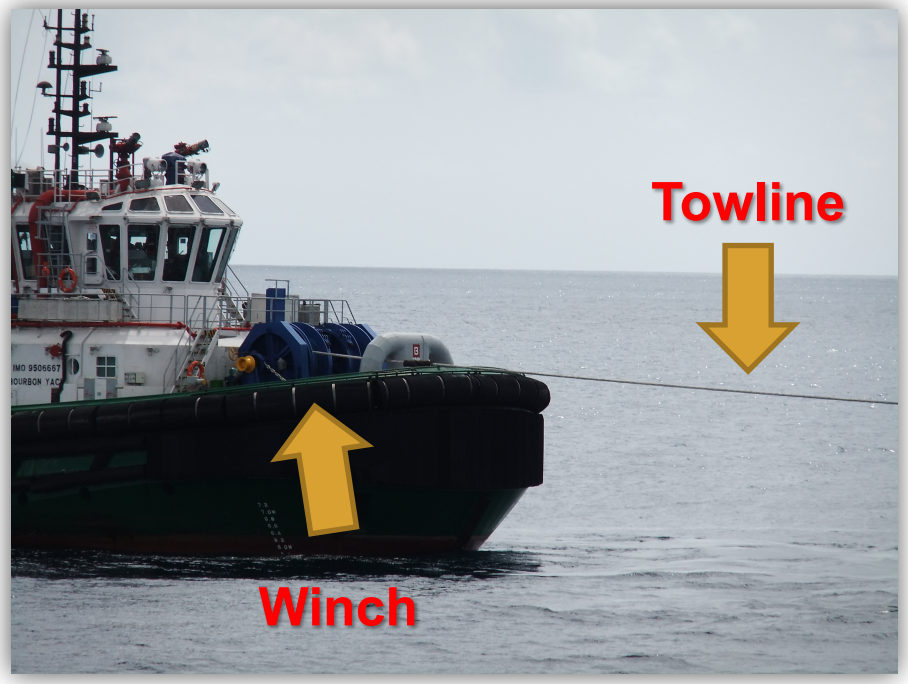


- Launched July 2017.
- Members include tug operators and rope manufacturers.
- Recommendations on static towing assemblies.
- Recommendations will be validated by a technical study.
- Expected completion date Q1 2019.
- Last meeting Houston August 2018.
- Next meeting London October 2018.

OCIMF

SLOM
Sociedad Latinoamericana de Operadores de Terminales Marítimo Petroleros y Monoboyas

Static Towing Assembly Components



Pennant

Static Towing Assembly Information Paper

1. Introduction

2. Static towing philosophy
    a. Challenges
    b. Reference study - ASD bow towing

3. Configuration and composition of the towline assembly:
    a. Towline
    b. Joining shackles
    c. Stretchers
    d. Pennants

4. Hazards to assembly
    a. Heat build up
    b. Cyclic loading
    c. Line rotation/twisting/torque
    d. Chafing

5. Methodology of towing weak link

6. Emergency release systems

7. Tug winches
    a. Standard with band brake
    b. Render recovery
    c. Brake rendering capacities

8. Management of towline assembly
    a. Risk assessments (safety of operations)
    b. Inspection, maintenance, testing and retirement criteria
    c. Measures to mitigate against chafing
    d. Effects from metocean conditions
    e. Catenary curves
    f. Girting preventive equipment

Challenges

- No industry standard on size and suitability of towline assemblies.
- Unknowns around the suitability of HMSF.
- Chafing at both the tug bow staple and the tanker chock.
- Tug suitability and design.
- Training and Competency of tug operator affects directly on how the assembly will perform.

Challenges are even greater when towing from the bow:

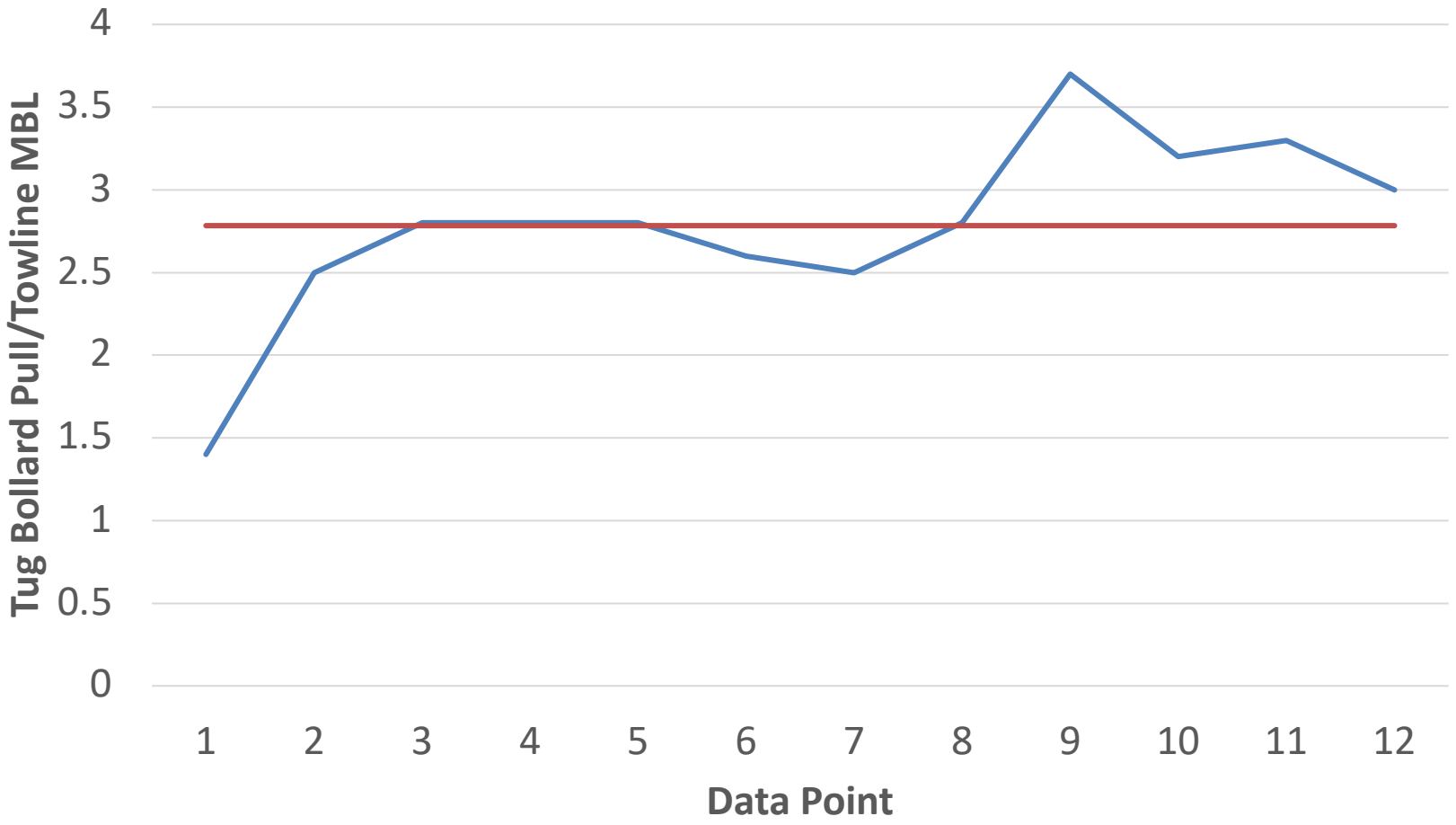
- Safety of personnel ⇒ restricted working area on tug bow.
- Bow winch ⇒ capacity/design limits.

STATIC TOWING QUESTIONAIRE

- **Main objective:** to understand industry's current practices

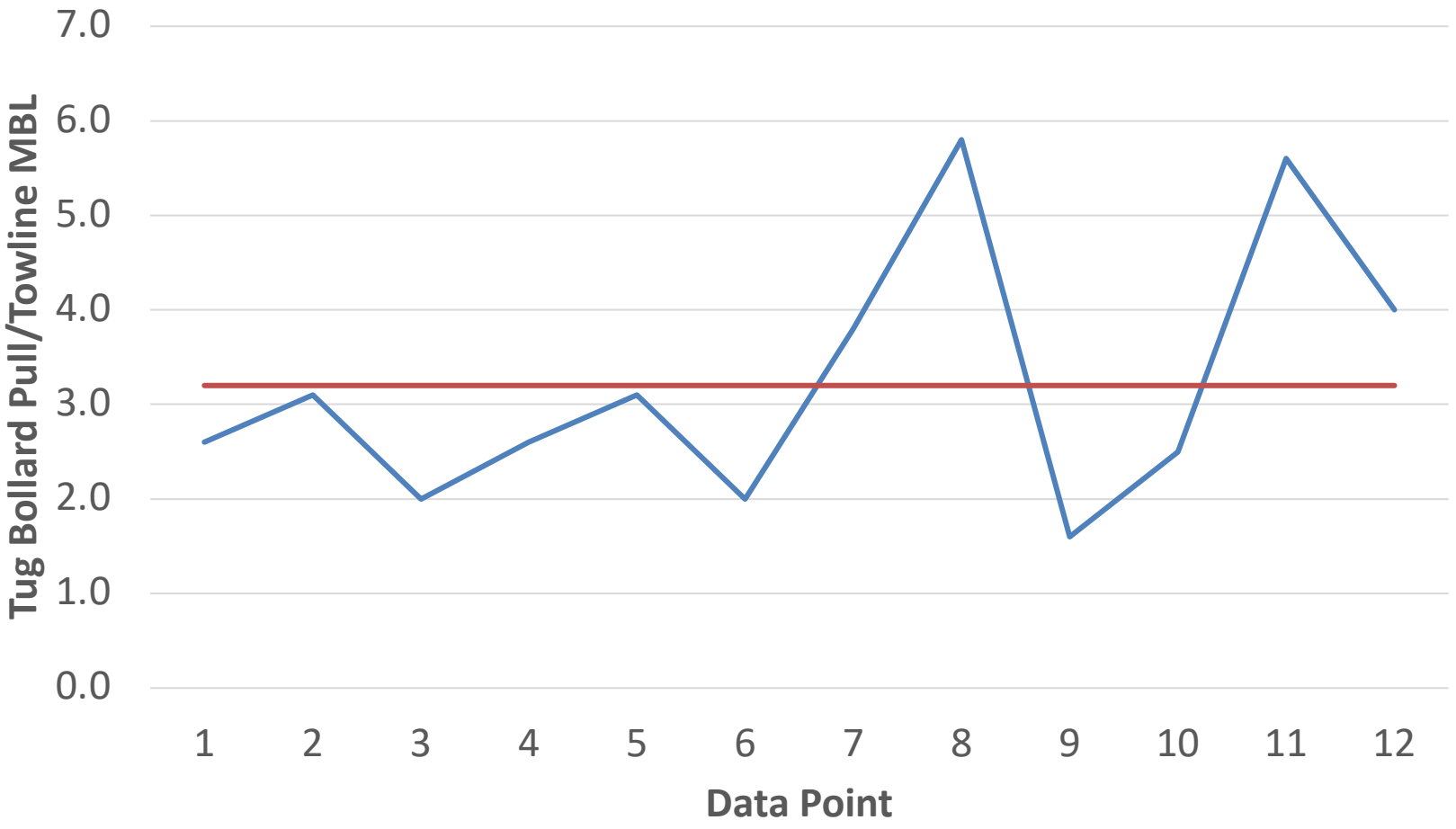
- **Questions related to:**
  - Type of tugs (ASD, AHTS and/or other)
  - Bollard pull of tug
  - Bow towing and/or stern towing
  - Tug winches
  - Normal length of towline (between tanker and tug) during static towing operations
  - Towline specifications (material, overall length, diameter, MBL, jacketed)
  - Stretcher specifications
  - Pennants specifications
  - Connecting shackles (type, MBL, safety factor)
  - Use of cow hitches or eye to eye
  - Chafing protection used
  - Weak link
  - Load and length monitoring

Relationship between tug BP and towline MBL (Wire)



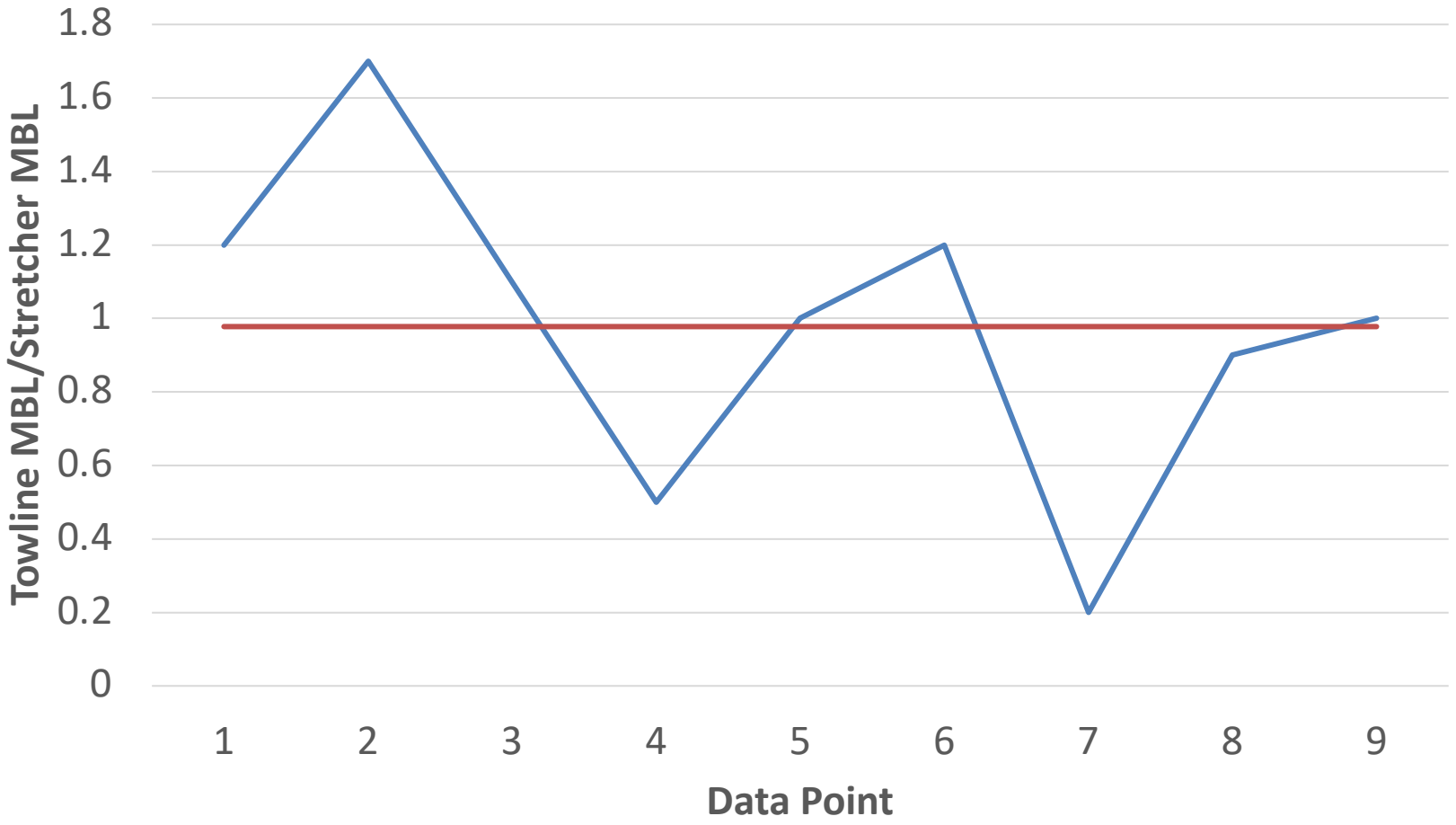
Average = 2.7 x

Relationship between tug BP and towline MBL (HMPE minus to 2 x 8.7)



Average = 3.2 x

Relationship between towline MBL and stretcher MBL



Average = 1.0 x

STA WG Survey Results

Summary

- **Data points =** 25 Terminals
- **Bow Towing vs Stern Towing**
  - Bow towing = 9 Terminals, 36%, ASD
  - Stern Towing = 16 Terminals, 64%, ASD, AHTS & Conventional
- **Wire vs HMSF Towlines**
  - Wire = 13, 52%
  - HMSF = 12, 48%
- **With vs Without Stretchers**
  - With stretchers = 9, 35% ⇒ 5 bow, 4 stern | 4 HSMF, 5 Wire
- **Wire vs HMSF Pennants**
  - Wire Pennants = 13, 52%
  - HMSF Pennants = 10, 48%
- **Type of tug**
  - AHTS = 9, 36%
  - ASD = 12, 48%
  - Conventional = 4, 16%

STA WG Survey Results

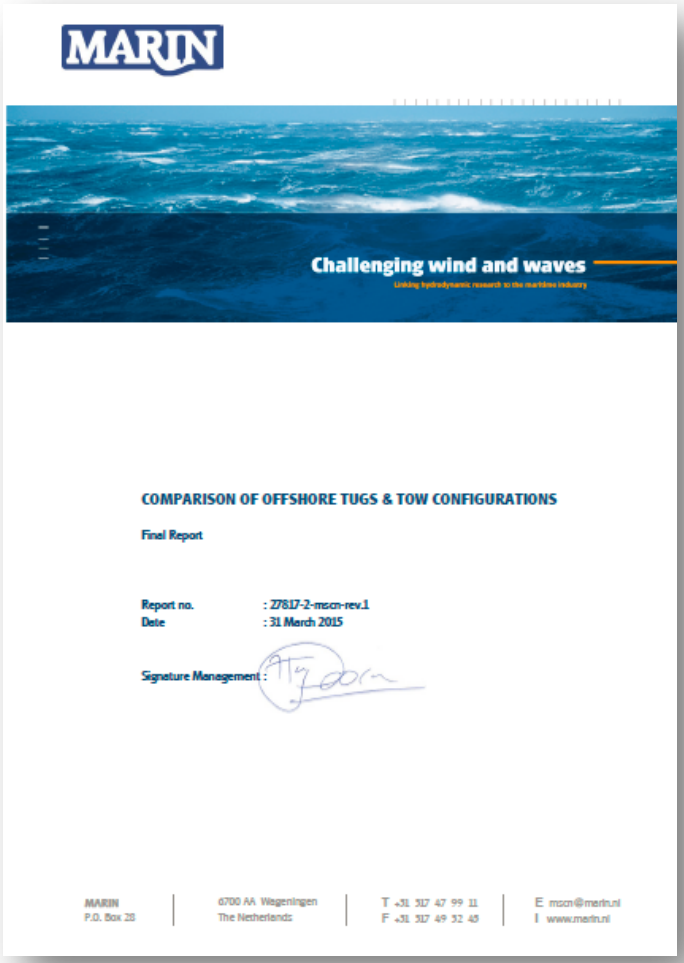
Summary

- **MBL Relations per Section**
  - Towline = wire 2.7 x tug BP | HMSF 3.2 x tug BP
  - Shackle = 1.4 x towline MBL
  - Stretcher = 1.0 x towline MBL
  - Pennant = 1.0 x towline MBL

- **Towing Length**
  - HMSF Towlines with Stretcher = from 110 to 250 m towing length
  - HMSF Towlines without Stretcher = from 200 to 400 m towing length

- **Weak links**
  - Break = 5, 20%
  - Pennant = 7, 28%
  - Stretcher = 1, 4%
  - Shackles = 3, 12%
  - None = 9, 36%

Reference Study



Comparison of Offshore Tugs & Tow Configurations

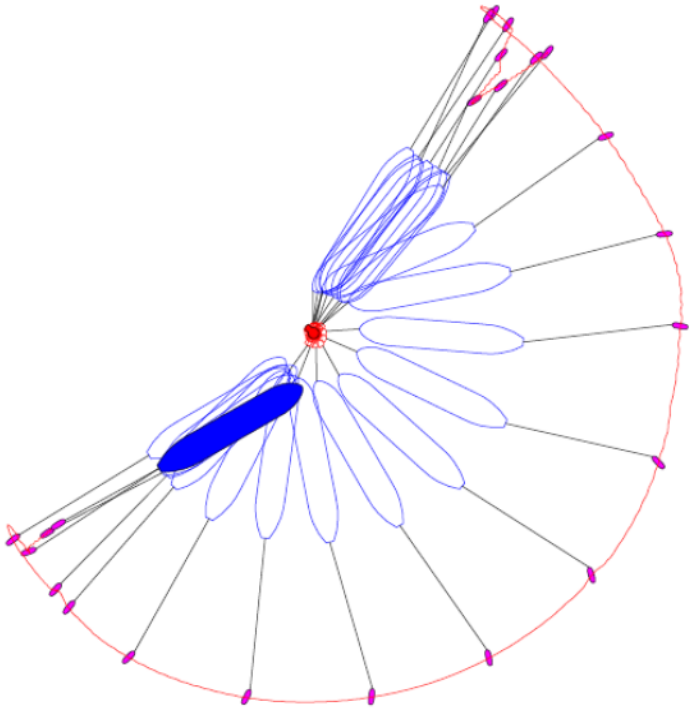
- ASD Towing over the bow is the recommended method ⇒ validated through simulation studies.
  - More controlled station keeping;
  - Easier to operate and more stable;
  - In case of a breakdown there is no risk of girting;
  - Smaller heel angles;
  - Tug less likely to ship water on deck, minimizing potential for down flooding and reducing crew exposure.

- **Towline length is a crucial factor.**

Towline

Length

- **Longer towlines** provides a **more stable tow force** ⇒ weight dampening.
- But **make harder** for the **tug to keep up with the rate of turn** of assisted vessel during squall conditions.
- Wire:
  - **ASD bow towing**:
    - Without a stretcher ⇒ ideal length around 300 m.
    - With a stretcher ⇒ lengths around 225 – 250 m performs equally well.
  - **AHTS stern towing** ⇒ 450 m is better in terms of load stability, but for arrivals and handling of a squall 300 m is preferred.
- HMSF were not assessed in the first study ⇒ it will be conducted a new simulation study.



Towline

MBL

- When **determining towline MBL**, consider the **tug maximum steering force** which is generally **around 1.3 x the tug BP**.
  - Example: 70t BP = 91t steering force. 3 x 91t = 273t towline MBL as opposed to 210t towline MBL when considering the tug BP only.

Towline

Diameter

- Related to the MBL, but not only.

- **Risk factors must be considered:**
  - How do we define the environmental and operational risk factors?
  - How do you ensure that the product is suited against those risk factors?

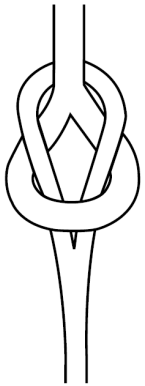
- **Risk factors include:**
  - Wear and tear.
  - Heavy load amplitudes.
  - Cyclic loading over an extended period of time.
  - Internal heat build up of the product.

- **Load amplitudes will shift the risk factor.**
  - How many cycles can the product withstand?
  - What is the acceptable amount of motion for this application?
  - How much stretch does the system need?

Configuration and Composition of the Assembly

Connection Methods

- **Cow hitch** : European preferred ⇒ reduces MBL by 15%



- **Eye to Eye**: USA preferred ⇒ reduces MBL by 10%

Source: Samson Ropes.

- **Soft shackles**

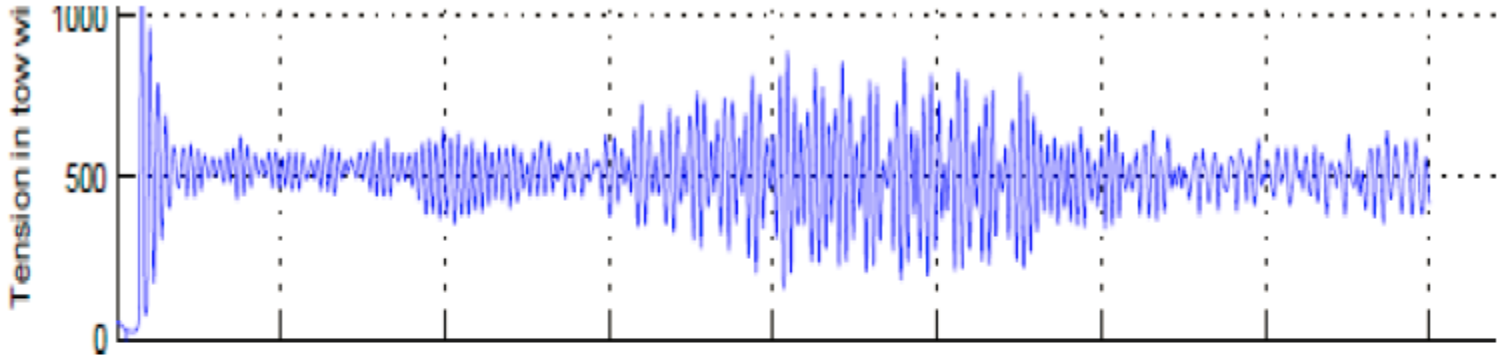
- **Hard shackles**

Stretchers

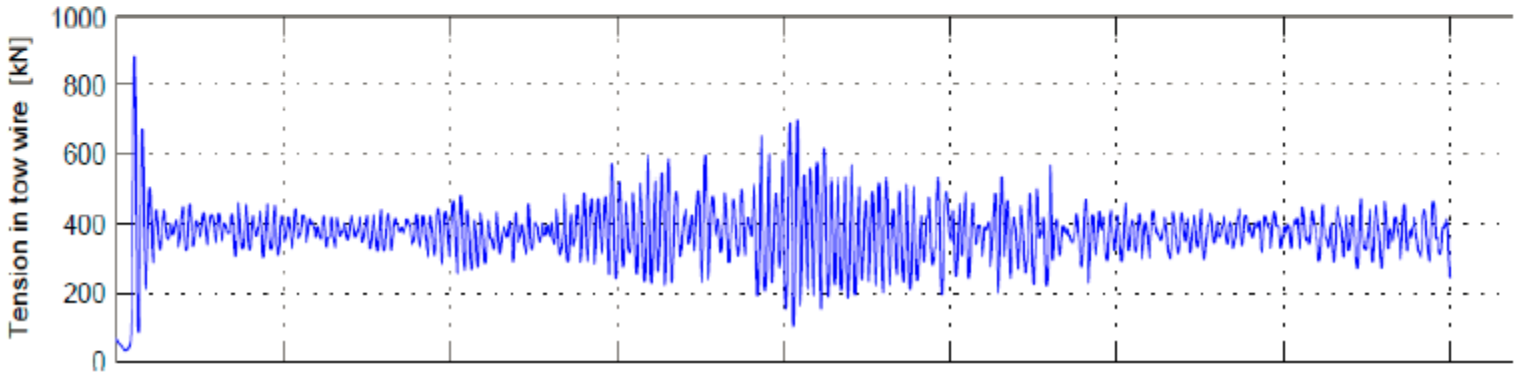
For wire towlines:

- MARIN study does suggest that ‘use of a **225m – 300m tow wire** with a **20m stretcher** (80mm diameter) **will reduce peak loads** on the tow wire and mooring hawser **without the tow wire being too long** for the tug to keep up with the tanker rate of turn in a squall. **Stretchers reduce peak loads by 10 to 20%.**

Scenario 1
225m
without
stretcher



Scenario 1
225m +
stretcher



Stretchers

For HMSF towlines, stretchers are recommended:

- To reduce the load amplitude which increase the effects of fatigue. Natural harmonics of the line will depend on the wave period and the forces applied.
- To reduce the effects of peak loading.
- To improve the performance of Render/Recovery winches, where used. Render/Recovery winches can be too slow to react to peak loading. Stretcher allows the R/R winch time to react.
- Stretcher MBL should be not less than the towline MBL.
- Longer is not better. 15 - 20m is most likely the optimum length.

Be aware of the stored energy in a stretcher.

Configuration and Composition of the Assembly

Stretchers

- **No clear criteria** on which should be the **length of the stretcher**.
- **Stretchers lengths** across the **industry vary** from **20m to 50m** (no standardization).
- In order to **determine the optimum line/stretcher combinations**, a **simulation study** will be conducted:
  - Simulator model will have to be calibrated with real life tests;
  - **Field data will be required** ⇒ Especially **wave and weather** info, **ship positions**, **engine settings**, **tow line tensions**.

What real time data can we obtain from your operations?

Pennants

Wire pennants:

- More chafing/abrasion resistant;
- More difficult to handle ⇒ ergonomic risks;
- Sharp ends when broken.

HMSF pennants:

- Lighter and easier to handle by the crew.
- No sharp ends when broken.
- Difficult to protect against chafing in the chock.
- Grommet construction ⇒ More surface area ⇒ less contact pressure and shear tension on the pennant surface ⇒ less external abrasion damage.

Methodology of Towing Weak Link

- **Dynamic conditions** may result in **loads that exceed the strength of the towline** assembly and cause it to part ⇒ It is recommended that a **weak link is designed into the towline assembly** to ensure that it will be a known component that fails first.
- In all cases, the **weak link** should be the **winch brake rendering first** (80% of the towline MBL).
- For obvious reasons, the **main towline** or **ship fittings should never be the weak link**.
- The following configurations are recommended:
    - HMSF towing assemblies made up of an HMSF towline + synthetic stretcher + HMSF grommet pennant, joined by soft shackles ⇒ **the soft shackles should be the weak link**.
    - Wire towing assemblies made up of a wire towline + synthetic stretcher + wire pennant, joined by hard shackles ⇒ **the pennant should be the weak link.**
    - Mixed towing assemblies made up of an HMSF towline + soft shackle + synthetic stretcher + hard shackle+ wire pennant ⇒ **the pennant should be the weak link.**

Towline Parting Incident Case

- Tug BP 70t.
- 56mm jacketed (MBL 233t) – **one year old**.
- Crew reported **no snatch load**, **no chafe damage**, **no previous damage**.
- Tug pulling at 15% during time of breakage.
- 15 m of remaining rope sent to manufacturer for testing:
  - Residual strength test ⇒ parted at 88% MBL.
  - Results indicate that rope had no technical malfunction.

Towline Parting Incident Case

- It was noticed that the rope was very stiff and compressed.

- When the jacket was removed some local damage and abrasion was discovered close to the actual break area.

Towline Parting Incident Case

- Some discoloration was found.

Towline Parting Incident Case

- Serious friction and fusing damage was found on the jacket.

Towline Parting Incident Case

Main questions:

- Does the sharp lineation of strands indicate spike loading?
- Has the non use of a stretcher contributed to the failure?
- Was there chafing damage from the chock or digging into winch layers?
- Was the discoloration due to chemical contamination?

Recommendations from Manufacturer:

- Re-think the use of a stretcher.
- Use heavy duty HMSF protection in the staple/chock.
- D:d ratio ⇒ high local contact pressure.
- After a job, spool off the rope as much as possible and re-spool the rope under tension back onto the drum to reduce the risk of digging into the underneath layers.

Wrap Up

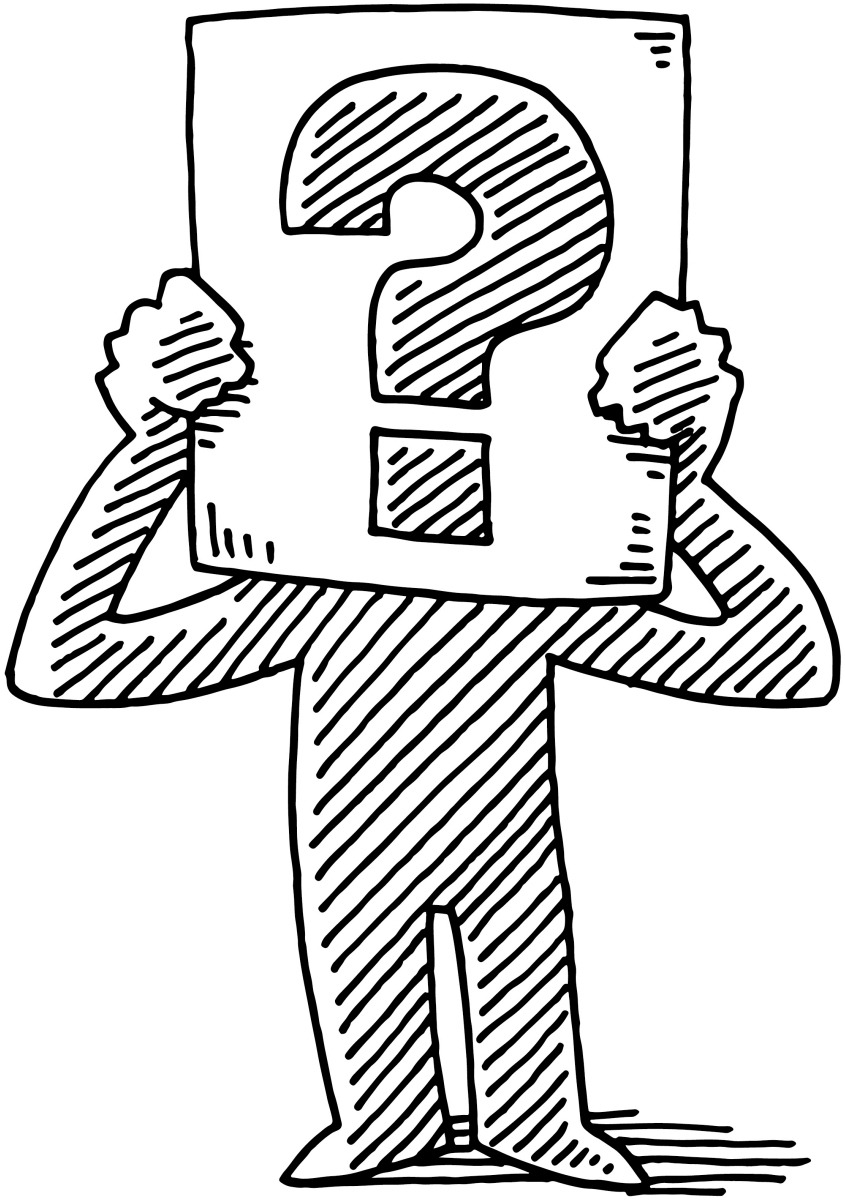
- OCIMF Static Towing Assembly Work Group continue to work on static towline assembly guidelines and expect to complete Q1 2019.
- Model the performance of static towlines. Consider a dedicated measurement campaign to gather the required data.
- Continue engaging with industry to explore chafe protection options, successes and good practices.

A Voice for Safety

Human Factors

Rob Drysdale – Director

Introduction



Our Industry

Interesting Statistic

80%-90% of all maritime incidents have human error contributions

Quote from MCA – "The Human Element, a guide to human behaviour in the shipping industry"

"The global shipping industry is a dangerous place. Every day, it loses two ships, pays out US$4 million in claims and radically changes the lives of hundreds of people for ever.

Human behaviour is the source of virtually all such loss.

It is also the reason why the loss is not greater."

Most Common Human Factor Contributors

- Managing human failure
- Procedures
- Training and competence
- Staffing
- Organisational change
- Safety-critical communication
- Human factors in design
- Fatigue and shift work
- Organisational (safety) culture
- Maintenance, inspection and testing

What are Human Factors?

Human Performance?

Human Error?

Complex Decision Making?

Interface with Machines?

Stupidity?

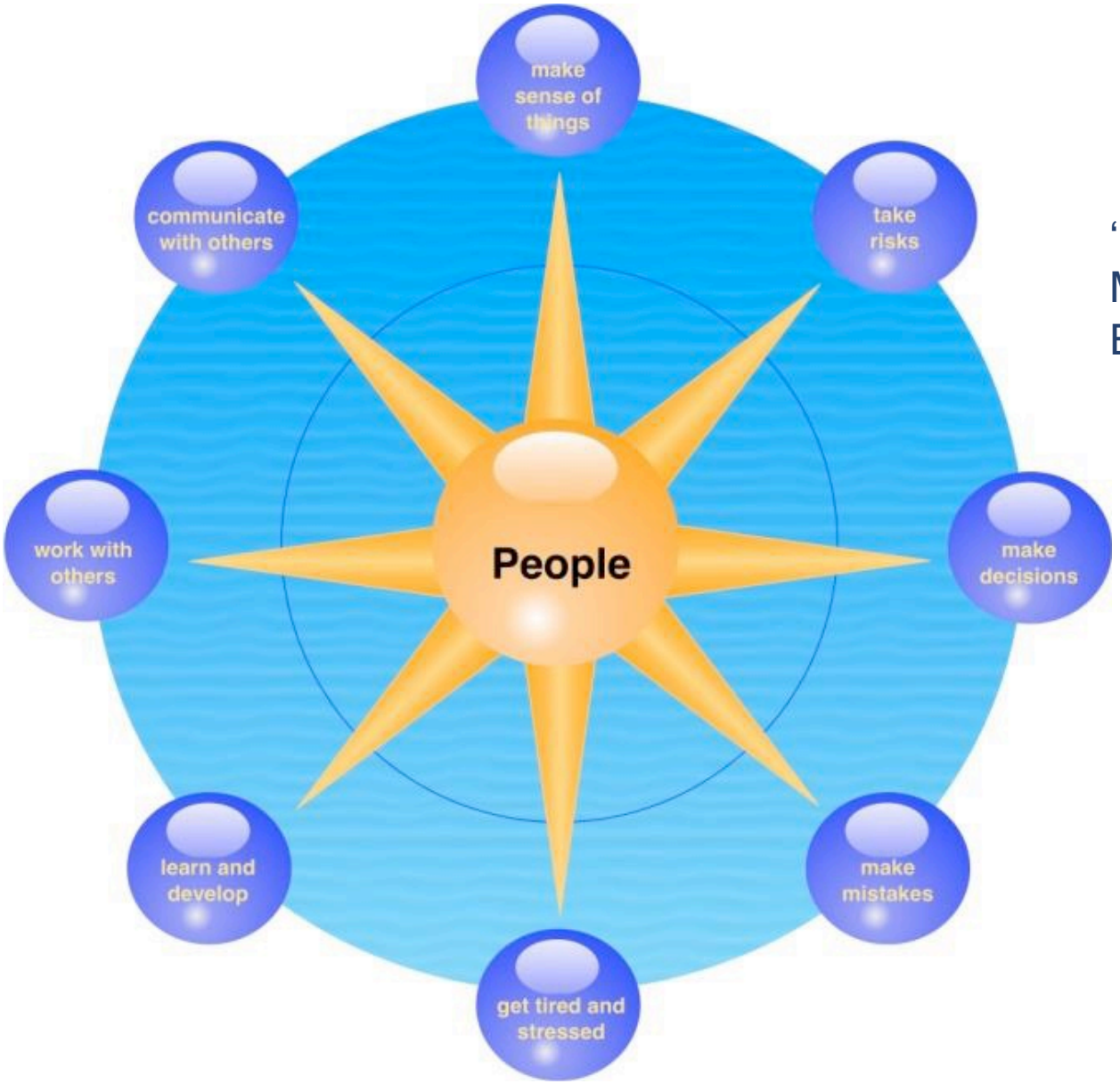
State of Mind?

Common Sense?

Human Elements?

Last line of Defence?

What are Human Factors (continued)



'Compass' from UK MCA – 'The Human Element'

What are Human Factors (continued)

Human Factors includes both Physical and Mental aspects

Physical aspects generally described as Ergonomics

- Individual characteristics (size, fitness, etc.)
- Job design (facility configuration, task demands – sequence and duration)

Mental aspects generally described as Human Performance

- Basic 'brain science" – fast/slow mental processing, biases (filters)
- Skill, knowledge and experience
- Individual and collective attitudes and risk tolerance

Mental Health - Some UK Statistics

- 45% of all adults will suffer from a mental illness during their life time
- 20% of all adults will suffer from mental illness in a given year
- 70% of mental health issues go untreated and/or undiagnosed
- >90% of mental health issues are fully treatable

What are Human Factors (continued)

Taking one element of ‘mental health’ - stress

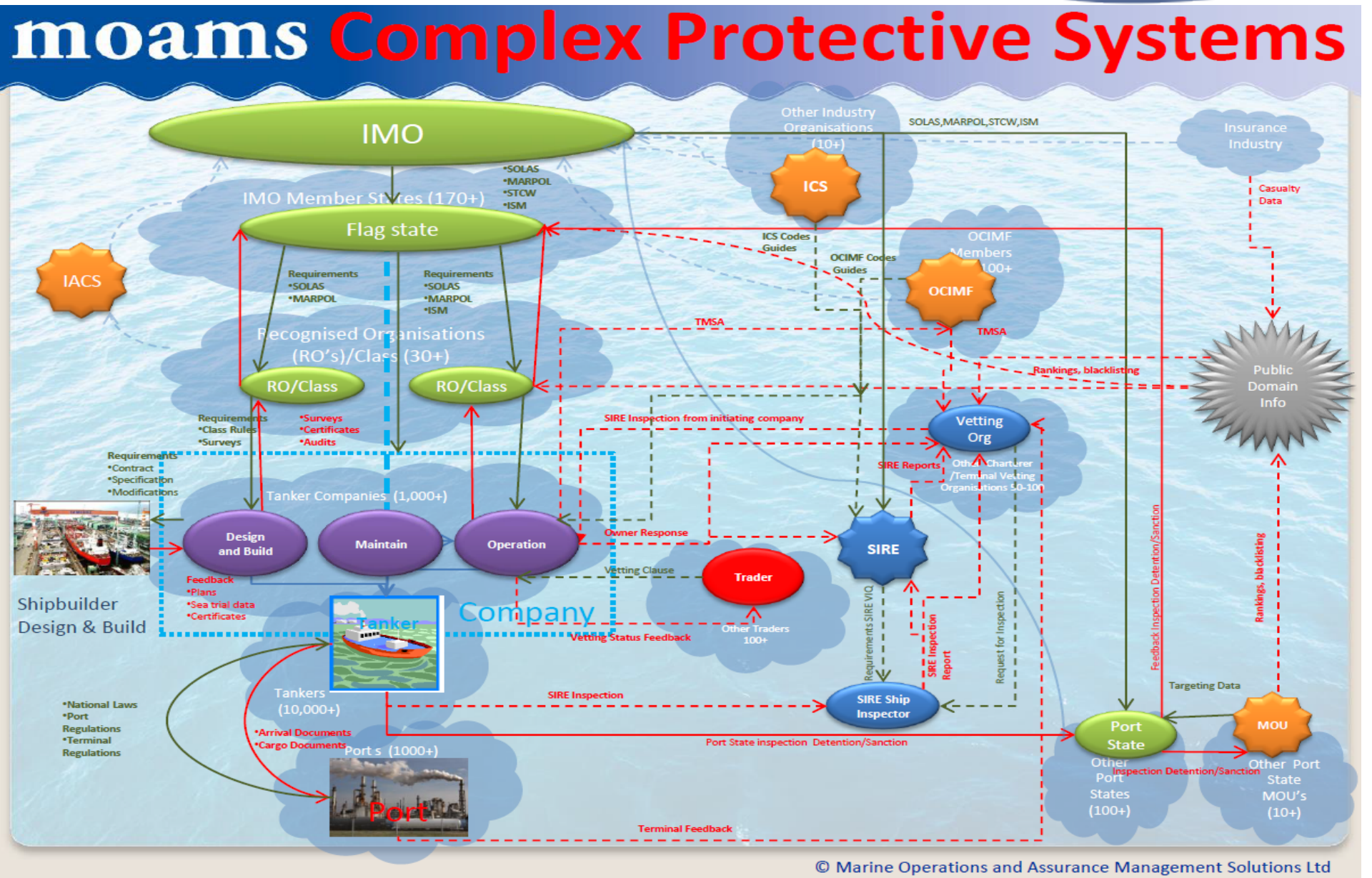
Physical

- Headaches
- Indigestion, upset stomach, ulcers and other digestive problems
- High blood pressure

Behavioural

- Skipping or rushing meals
- Insomnia
- Changes in mood or behaviour
- Irritability
- Indecisiveness
- Can’t think straight - forgetfulness

Human Factors and Complexity



Foundation Principles

- **People are fallible, we ALL make mistakes**
  - No amount of counseling, training, or motivation can eliminate all error
- **Error-likely situations are predictable, and preventable or manageable**
  - Anticipate and mitigate error-likely situations (error traps)
  - Provide assistance or verification for critical steps where 'perfection' required
  - Design systems of work that are more resilient when errors occur
- **Deviations from expectation may be intentional (non-conformance) or unintentional (error)**
  - When people intentionally deviate, they usually believe they are justified at the time
    - Most intentional deviations are well-meaning actions to get the job done
  - Experienced people make mistakes (errors) when working in "auto-pilot"; inexperienced people err due to lack of understanding or skill
- **How leaders respond to human performance issues matters**
  - In hindsight, we tend to oversimplify the situation and assign blame
    - 'Weak signals' are easier to identify once we see the outcome
    - We underestimate the influence of stress factors present during the event
    - We often consider deviations as 'intentional', rather than 'missed signals'
  - Focusing on 'fixing the person' may mask systemic factors that can influence entire populations
- **People achieve performance excellence when it is encouraged and reinforced by leaders, peers, and subordinates (Culture)**

Incident Example 1

Enclosed Space Entry

O2 reading 20.7%
HC reading 26%
H2S reading 0ppm

Risk Assessment and Permit to Enter Issued

- CO and Deck Cadet entered
- 3/O at tank top

Personal Gas Alarms Sound

- CO & Cadet feel dizzy
- C/O dons EEBD and leaves
- Cadet has difficulty and collapses

3/O raises alarm and prepares emergency team

- Captain on scene and despite protests from crew, enters the space alone with EEBD
- Captain reaches cadet and collapses

Rescue team enters space

- C/E in charge
- Rescues two people
- Captain dies; cadet seriously injured but survives (EEBD partially rigged)

ILO preferred sequence of preventative measures:

OCIMF Human Factors in Mooring Design

1. Elimination
   - e.g. no mooring lines – what are the alternatives?

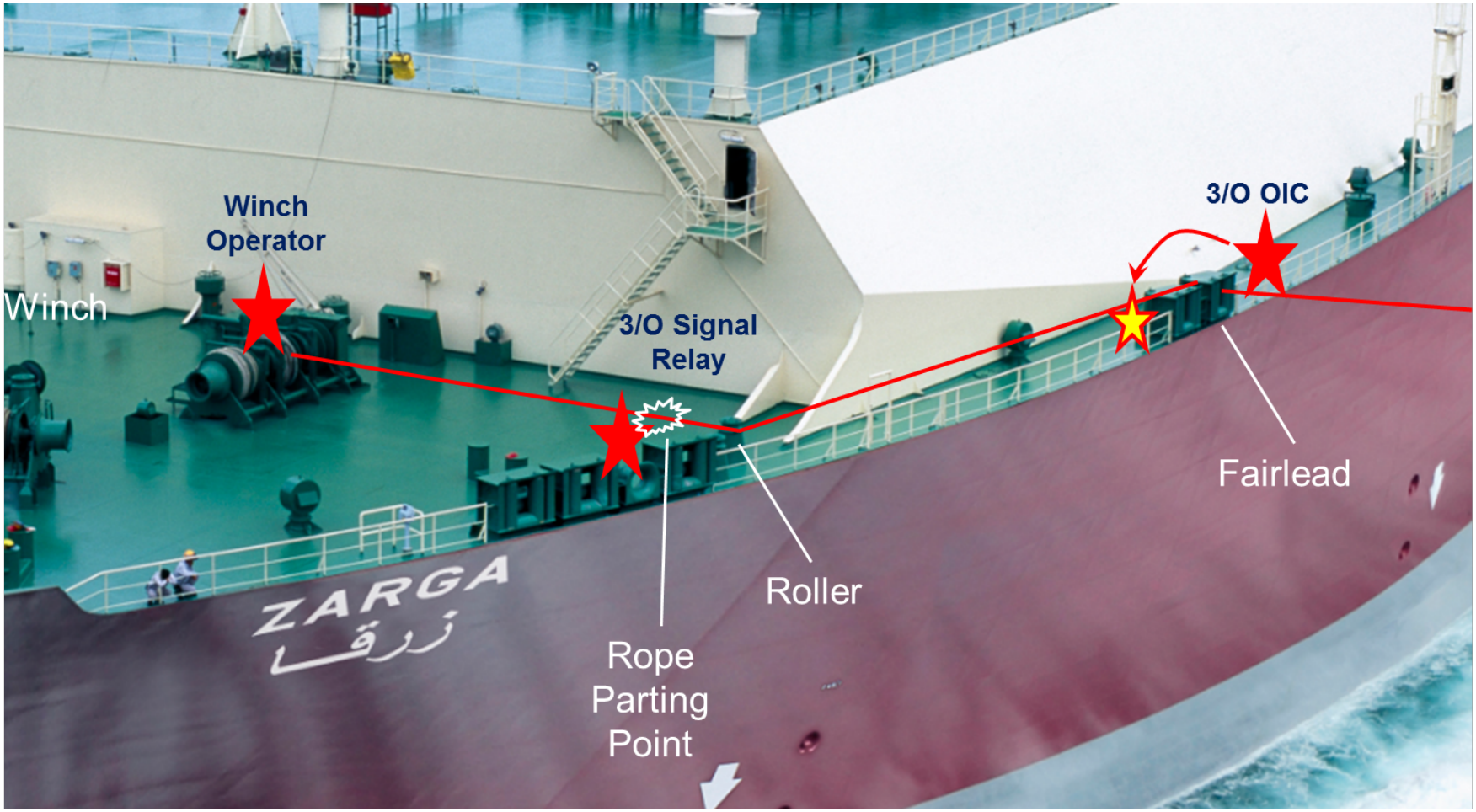
2. Substitution
   - Not applicable for mooring (usually refers to substituting non-toxic, or non-hazardous products)

3. Isolation or combating of risk at source
   - e.g. separation of people from the hazard

4. Technical/Engineering controls
   - e.g. automation; use of protective cages etc

5. Organisational measures
   - e.g. reduce exposure time, introduce no-go areas, training etc

Incident Example 2



Human Factors in OCIMF

Mooring Equipment Guidelines (MEG)

Effective Mooring

International Safety Guide for Oil Tankers and Terminals (ISGOTT)

Competency Assessment and Verification

Human Factors Focus Group

Useful Links

- CyClaDES Project: The issue of "human element factors in shipping safety" was addressed by an international consortium representing critical stakeholders(yard, supplier, operator, seafarer communities, industrial/academic experts on ergonomics and work space design, classification societies, and flag state. Includes free to download materials

  http://www.cyclades-project.eu/CyClaDes/documents

- Energy Institute: Human and Organisational Factors includes free to download materials.
  https://www.energyinst.org/technical/human-and-organisational-factors

- MCA – Human Element Guide
  https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/283000/the_human_element_a_guide_to_human_behaviour_in_the_shipping_industry.pdf

- IOGP – Human Factors Engineering in Projects
  http://ogp.org.uk/pubs/454.pdf

A Voice for Safety

Questions ?

Coffee

OCIMF Programmes and Working Groups

Marine Terminal Information System – (MTIS)

Dominic Mcknight Hardy – MIS

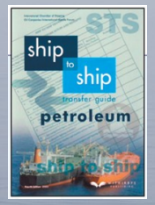
OCIMF -Key Events

1956/57 and **1967/75**:
Suez Canal Closed

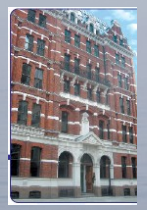
1967:
Grounding of Torrey Canyon

1970:
OCIMF was formed

1971:
Consultative status at IMO



1975:
First OCIMF guideline published



1977:
London branch office established

1978:
ISGOTT published

1993:
SIRE Programme Launched

1998:
50TH Publication reached and website launched

2000:
SIRE Inspector Training and Accreditation

2004:
TMSA Programme Launched

2010:
OVID Programme Launched

2011:
MTIS Programme Launched

Developed to fill the gaps in international standards for terminals, the Marine Terminal Information System (MTIS) aims to ensure that all oil and gas terminals worldwide reach a common high standard of safety and environmental protection

MTIS vision

MTIS was launched in 2011, with the objective of compiling a comprehensive database of relevant information for all the world's 4,000+ oil and gas terminals – from the hardware available, to berth measurements and transfer rates, with a view to improve ship-to-shore matching safety.

Accurate and comprehensive terminal information is essential to:

- Ensure ships and terminals are compatible.
- Enhance operational efficiency and reliability.
- Prevent incidents that may harm people or the environment.

MTIS vision

The programme complements similar programmes OCIMF provides to improve ship safety and environmental protection, including:

SIRE

Ship Inspection Report Programme

OVID

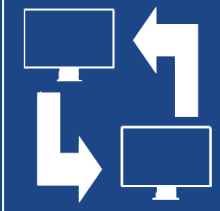
Offshore Vessel Inspection Database

Through MTIS, terminal operators are able to efficiently and effortlessly share their details with terminal users, efficiently oversee their terminal management structure and improve training processes.

MTIS Objectives

Raise the standards for vessel-berth compatibility matching and safety.

Asist marine terminal management in developing appropriate training plans.



Improving efficiency for pre-arrival data sharing.

Promote best practice in terms of terminal operational safety and efficiency; helping marine terminal operators assess and continuously improve their safety, reliability, efficiency and environmental performance.

Adopt a global, accepted set of terminal information in a common format and consistent units of measurement.

Providing big benefits to both terminal operators and shipping companies through the structured sharing of terminal information and practices, MTIS aims to raise safety and operational standards across the marine terminal industry.

Account types

Terminal Operator

Terminal Operator users can add their terminal data to MTIS to share with users of their terminal and access full MTIS Terminal Management and Improvement tools.

Data User

Data Users can access global terminal information, including ship-shore compatibility measurements available through the MTPQ.

OCIMF Member

OCIMF Members will have additional MTMSA and Statistical Reports functionality (permission depending).

Benefits to Terminal Operators

Through exchange of technical data and practical experience, terminal operators secure a number of benefits from MTIS, including:

Reduced Administration

Simpler, faster sharing of terminal information through a single, central database

Full Security

Terminal operators retain full control, ownership and management of their data

Improved Efficiency

More accurate, faster matching of terminals and ships

Reduced Incidents

Improved safety, reliability, efficiency and environmental performance

Improved Training and Morale

Better trained and motivated staff through the use of MTOCT

Familiar Process and Practices

Vessel's staff can access MTIS using their SIRE credentials

Effective communications

Operators can enter their data in a way that can be easily accessed by Data Users and OCMIF members

Reduction in Audit Activity

Reduction in time and number of Audits. Pre-completed document for review and select areas for verification

Streamlined Information Sharing

Streamlined communications between the vessel and the terminal operator by having the data they need at their finger tips.

System integration

Integrated with OCIMF member vetting systems, creating a seamless connection between terminals and vetting processes

Continuous Improvement

Continuous improvement of safety management systems through best practice self assessment using MTMSA

Capability Promotion

Enhanced demonstration of terminal capabilities through the MTPQ

"The MTIS is the wave of the future for improving the ship/shore interface. The three
primary modules (MTPQ, MTMSA, MTOCT) should help raise the best practice standards at our marine terminals world-wide."

Steve Carr
NUSTAR ENERGY LP

MTIS programmes

Through MTIS, the programme documents help collect terminal information in a common and consistent format:

Marine Terminal Information System (MTIS)

MTPQ

Marine Terminal Particulars Questionnaire

The MTPQ captures all relevant terminal information, making it easier and simpler for vessel programmers, schedulers and terminal operators to share information and assess the suitability of the ship/shore interface.

MTMSA

Marine Terminal Management and Self Assessment

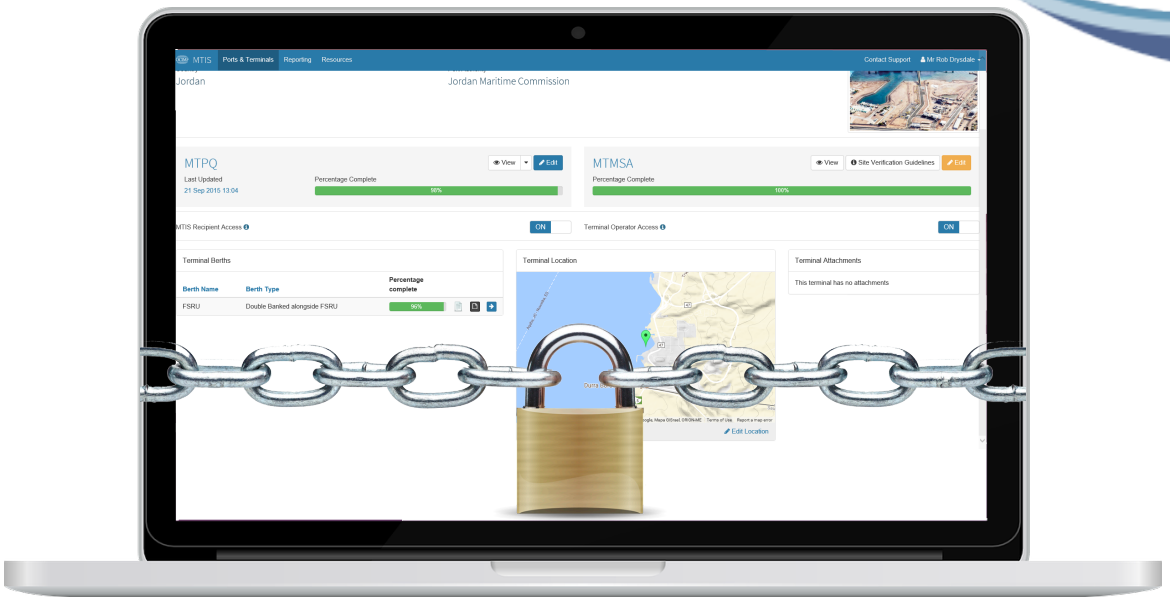
The MTMSA is a best practice guide aimed at helping marine terminal operators assess and continuously improve their safety, reliability, efficiency and environmental performance.

MTOCT

Marine Terminal Operator Competence and Training

The MTOCT guide helps marine terminal managers identify key competences and ensure the people operating the ship/shore interface have all necessary skills, knowledge and experience.

Security

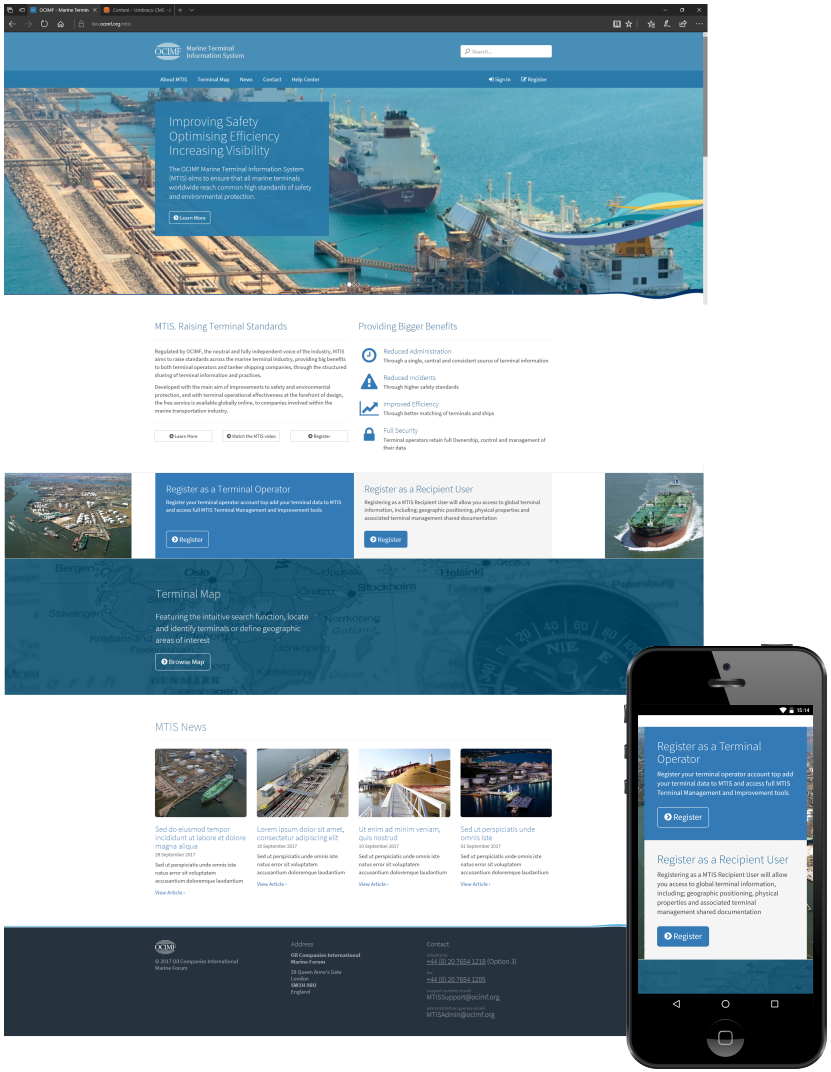


Data security

Terminal operators retain full control, ownership and management of their data and are responsible for ensuring the information remains up-to-date.

MTIS users have the ability to see a terminals presence in MTIS, which will include visibility of the terminal name, location and what documents the terminal has published, however, each Terminal Operator will have control over who is able to view their terminal documents (MTPQ, MTMSA, MTOCT).

MTIS –
Marine Terminals Information System

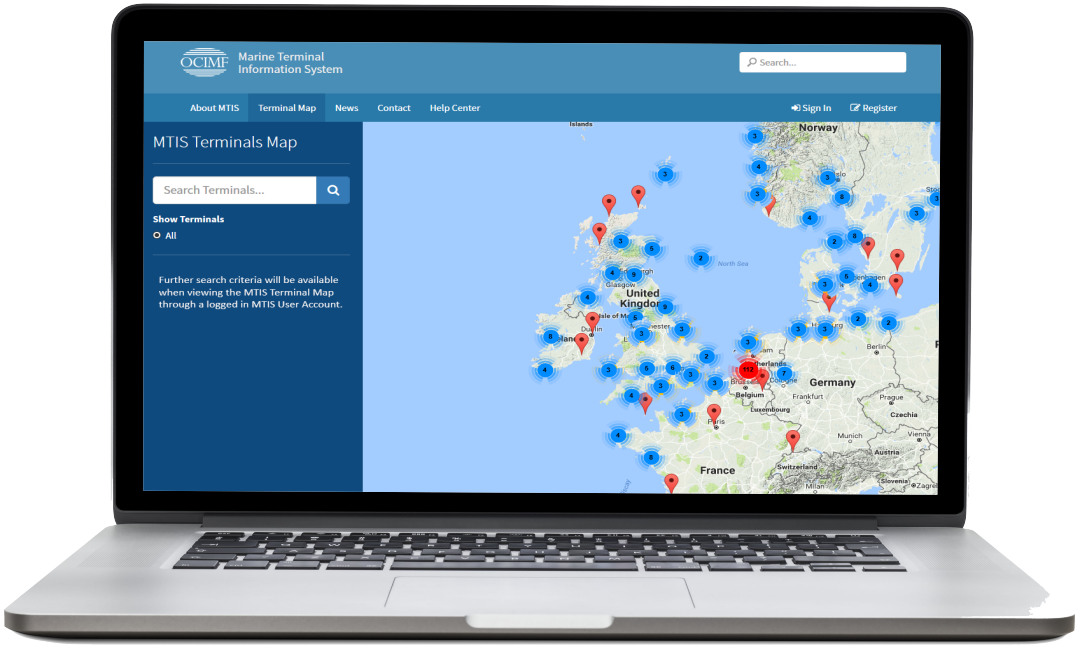


www.ocimf-mtis.org/

The MTIS site provides:

- Full background information about MTIS and the benefits offered.
- Help Center providing 24/7 support for all MTIS queries and support.
- An interactive terminal map displaying global terminal positions.
- MTIS contact information.
- Links to Register and Login to MTIS.

MTIS –
Marine Terminals Information System



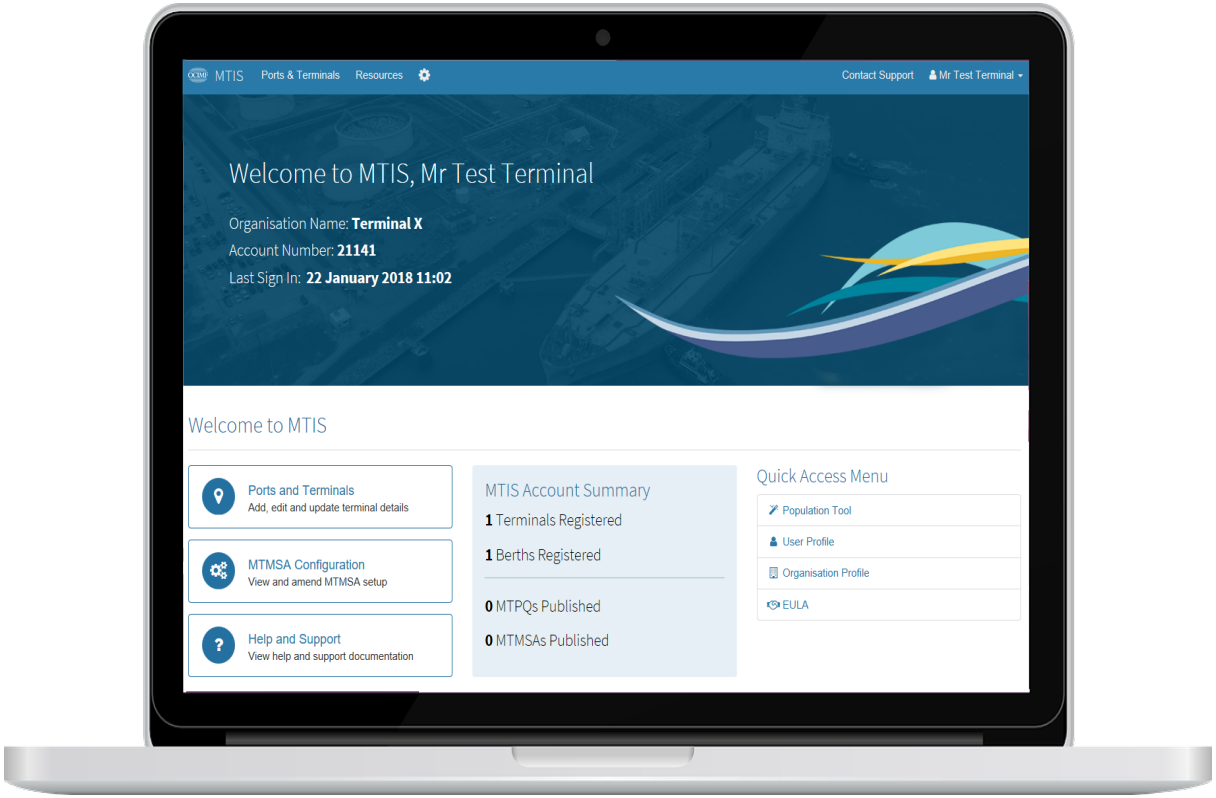
Terminal Map

The MTIS Terminal Map provides a location marker for terminals.

The map can be freely searched.

Any terminals not currently recorded in the map can be added through registration.

MTIS –
Marine Terminals Information System



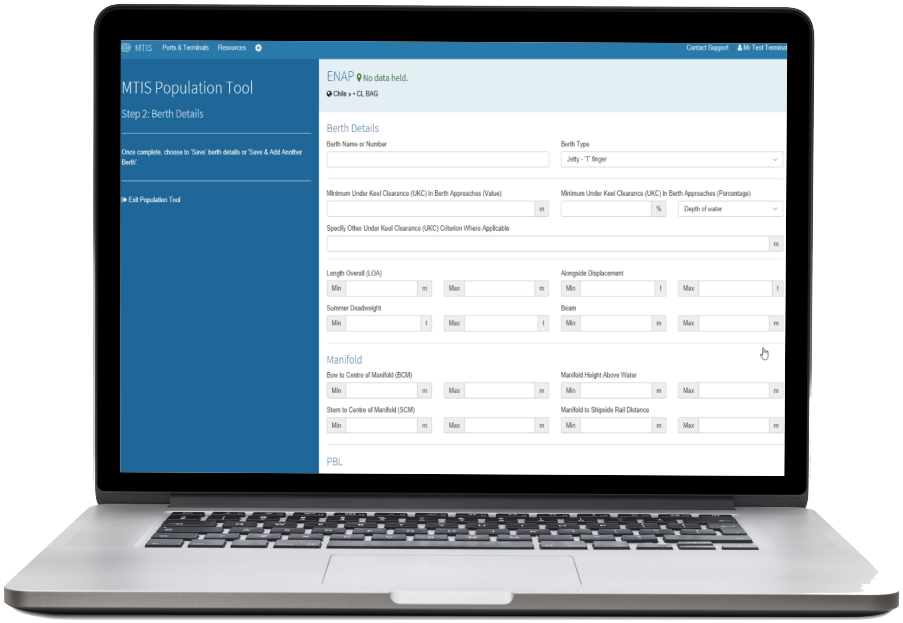
Online Account

The MITS account provides full terminal management in one spot.

Once registered, through their personal online account, a Terminal Operator can:

- View and add terminals
- View/Add/Amend terminal MTPQ and MTMSA data
- Set security and permissions (Account Supervisor only)
- Add / amend users (Account Supervisor only)

MTIS –
Marine Terminals Information System

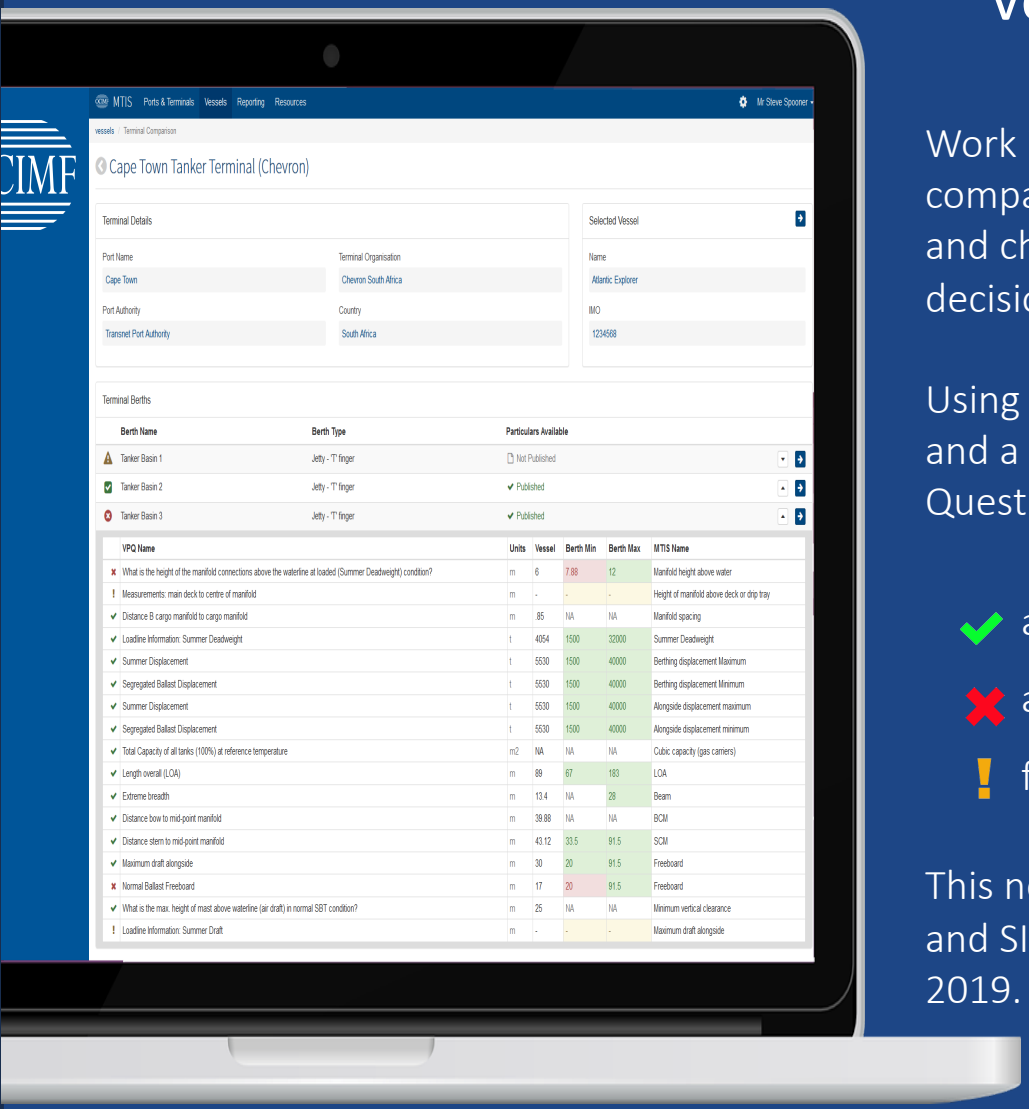


Easy berth creation process

The berth population form assists users in quickly and efficiently entering their terminal's berth details. It allows the user to create their berth record in MTIS through a single form.

The tool has been designed to capture the key, basic berth details, which will support vessel-berth matching.

Ongoing development



Vessel-Berth comparison tool

Work is currently underway to develop a berth-vessel comparison tool. The tool will support vetting teams and charterers in making informed berth matching decisions.

Using a vessel's VPQ (Vessel Particulars Questionnaire) and a terminal's MTPQ (Marine Terminal Particulars Questions), the tool will outline where:

- ✔ a berth matches a vessel's requirement
- ✖ a compatibility issue is present
- ! further consideration should be given.

This new application will be the link between the MTIS and SIRE programmes and is planned for release in 2019.

Ongoing development

Translation

Translation of the MTIS site and support materials into a number of key languages, including Spanish, Portuguese and French, is planned.

It is hoped this will further support terminal operators in completing their MTIS registration and terminal management through the MTIS programmes.

Current MTIS figures

2691 Users

709 Terminals

1591 Berths

96 Countries

The OCIMF vision

Universal terminal ID

The IMO number has provided vessels with a shared identification system, which has benefited the industry, for over two decades. OCIMF is now developing a similar identification structure for the terminal industry to unify terminal naming practices across the world.

With a Terminal ID helping to improve business practices, speed up communications processes and minimise data confusion, MTIS invites you to become part of this initiative and help shape the way for the 21st Century terminal industry.

Have you registered yet?

The more terminals MTIS covers, the greater the benefits to the industry in terms of enhanced operational performance.

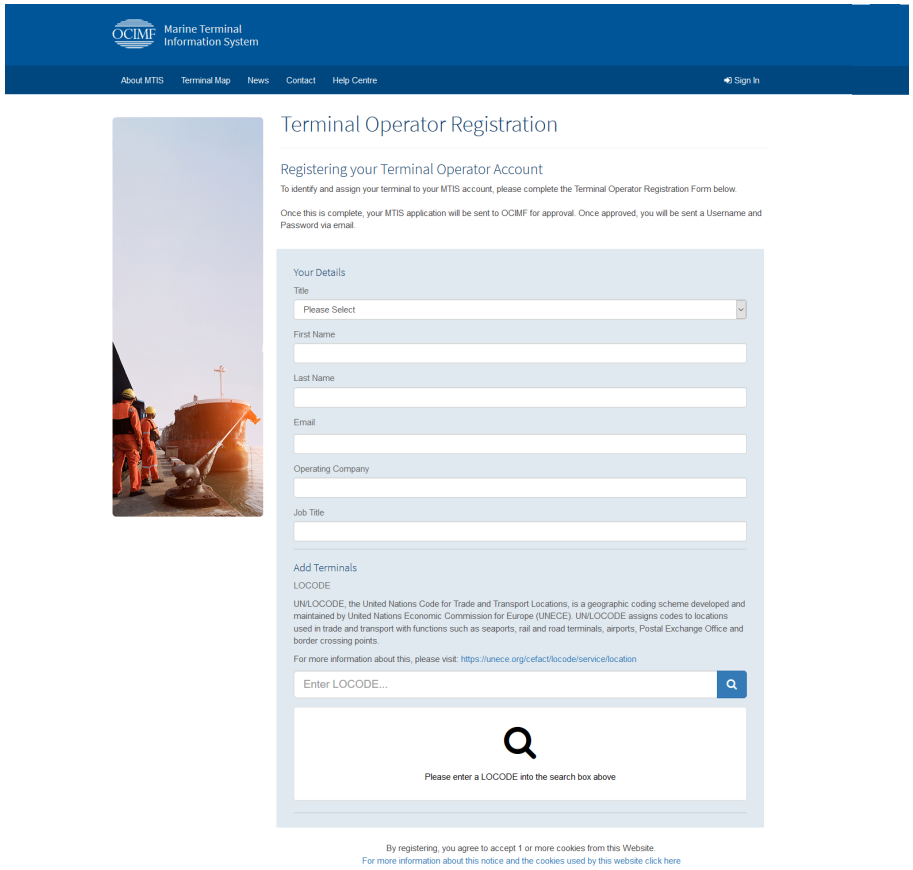
Joining MTIS absolutely free and OCIMF personnel are always available to help make the process as easy and efficient as possible.

It is important that anyone who operates a marine terminal registers within the system, completes the relevant MTPQs and conducts MTMSAs.

The aim is that all the world's marine terminals are captured within MTIS, raising safety and environmental performance to a consistently high standard.

Joining MTIS

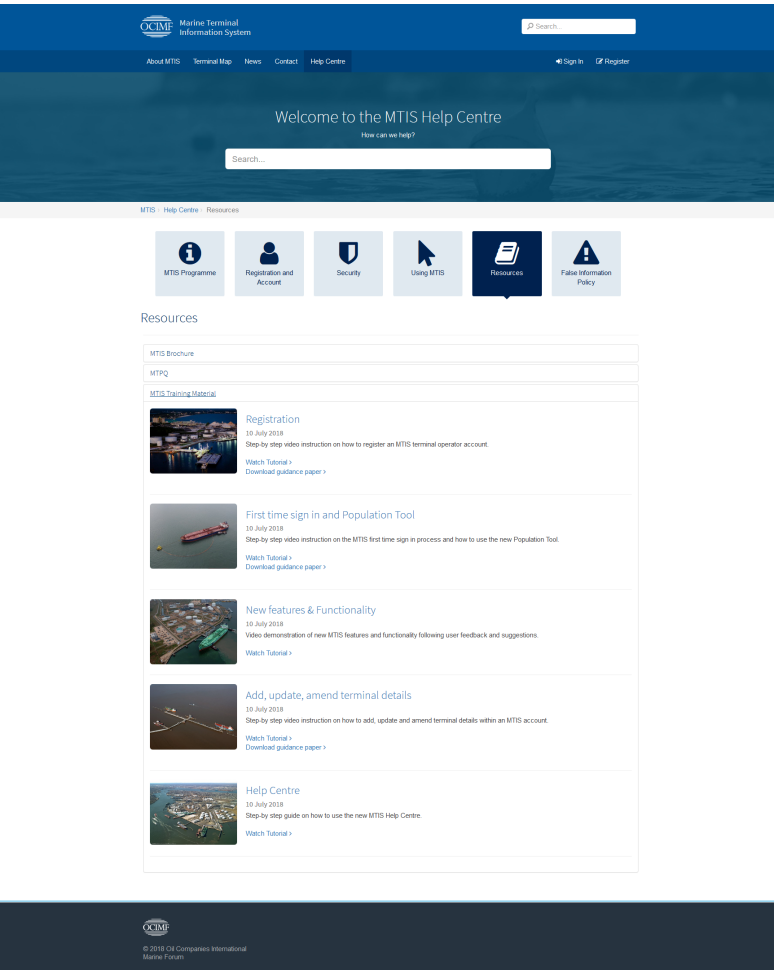
ocimf-mtis.org/register



MTIS is free to join.

Register your terminal today at **ocimf-mtis.org/register**.

Joining MTIS – User support



Support for Registering and populating your MTIS account can be found at:

www.ocimf.org/mtis/help-centre/resources

Videos supports users through the joining process
step-by-step.

“SIRE was a significant milestone in improving oil tanker operations globally. MTIS will become a similar milestone in the development of safe, efficient and environmentally responsible terminal management, offering a simple standardised way to share vital information to improve terminal safety and operations.”

Andrew Cassels
FORMER DIRECTOR, OCIMF

Oil Companies International Marine Forum
29 Queen Anne's Gate
London
SW1H 9BU
England

enquiries@ocimf.org
+44 (0) 20 7654 1200

MIS Marine
The Innovation Centre
Birmingham
B31 2TS
United Kingdom

+44 (0)121 277 4900
info@mismarine.com

A Voice for Safety

OCIMF Programmes

Tony Wynne – Technical Adviser (Nautical)

SIRE Programme and Performance

Vessel Inspection Questionnaire 7

- **The updated VIQ 7 went live 17th of September**

- **The report structure has changed from 13 chapters to 12 chapters.**
  - Old Chapter 10 Communications is now combined with New Chapter 4 Navigations and Communications
  - Old Chapter 7 Structural Condition is renamed Chapter 7 Maritime Security

- **New questions relating to industry developments are to be expected concerning, Ballast Water Management, Cyber Security, LNG bunkering, Mooring, etc.**

- **A reduction of about 75 questions can be anticipated with the removal of some repetitive questions and the addition of more focused questions and guidance principally in chapters:**
  - 5 Safety Management
  - 6 Pollution Prevention
  - 8 Cargo and Ballast Systems
  - Chapter 9 has change to align with new guidance in MEG 4 publication.

SIRE Programme Participants

The table below shows a comparison of the numbers and types of the participants registered in the SIRE Programme in 2017 and 2016:

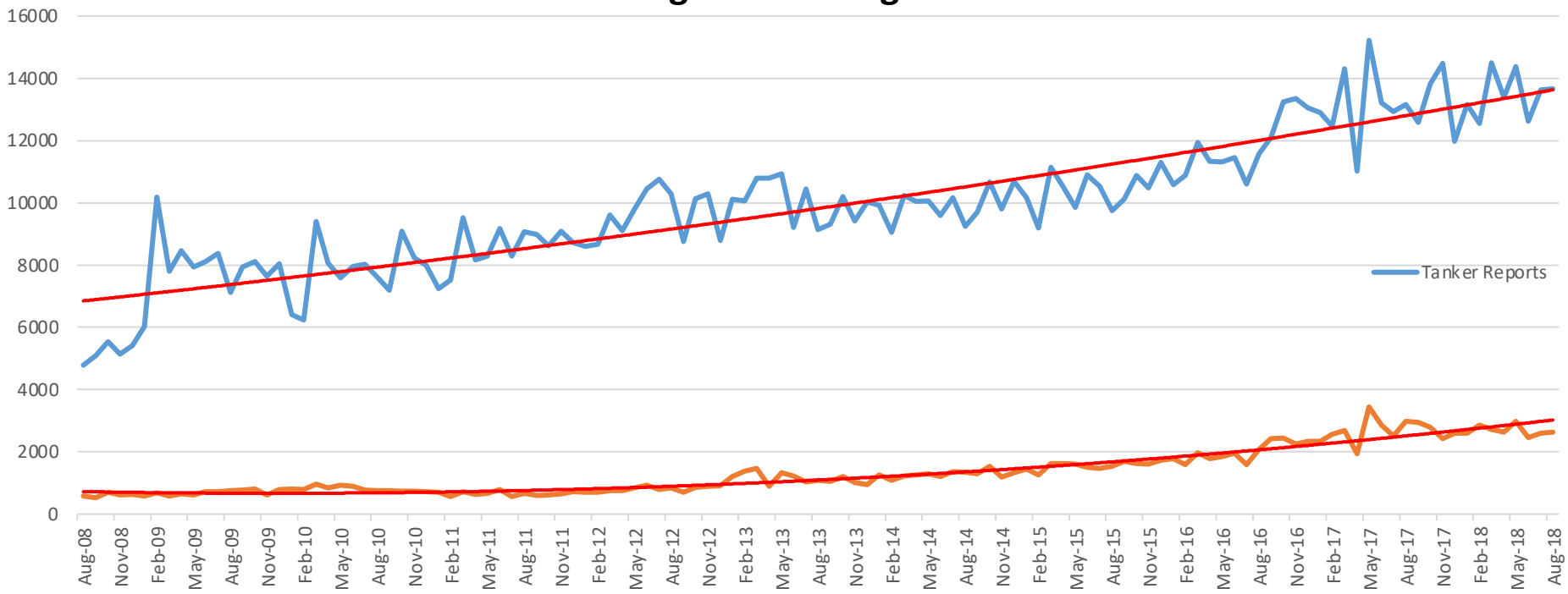
OCIMF Membership	2016	2017
Member Companies, all programmes	106	109
SIRE Programme Participants	**2016**	**2017**
SIRE Submitting Members	90	92
SIRE Recipient Members (including PSC)	279	316
SIRE Technical Vessel Operators	2003	2253
Accredited SIRE Inspectors		
Category 1	504	501
Category 2	2	2
Category 3	124	121

SIRE Programme key Statistics

SIRE Programme Key Statistics	2016		2017	
	Tanker	Barge	Tanker	Barge
Distinct vessels inspected in 12 months	8,604	6,735	8,904	6,792
VPQs/BPQs downloads	125,847	31,131	169,482	64,483
Inspection reports published	21,101	8,215	21,966	8,375
Ratio of inspection reports to vessels	2.45	1.22	2.47	1.23
Inspection report downloads by OCIMF Members	121,249	22,233	135,480	28,841
Inspection report downloads Recipient Members	30,383	1,818	33,165	3,367
PSC Inspection report downloads	1,018	7	798	5
TOTAL Inspection report downloads :	141,441	24,045	158,046	32,119
Combined total of ALL report downloads	165,486		190,165	

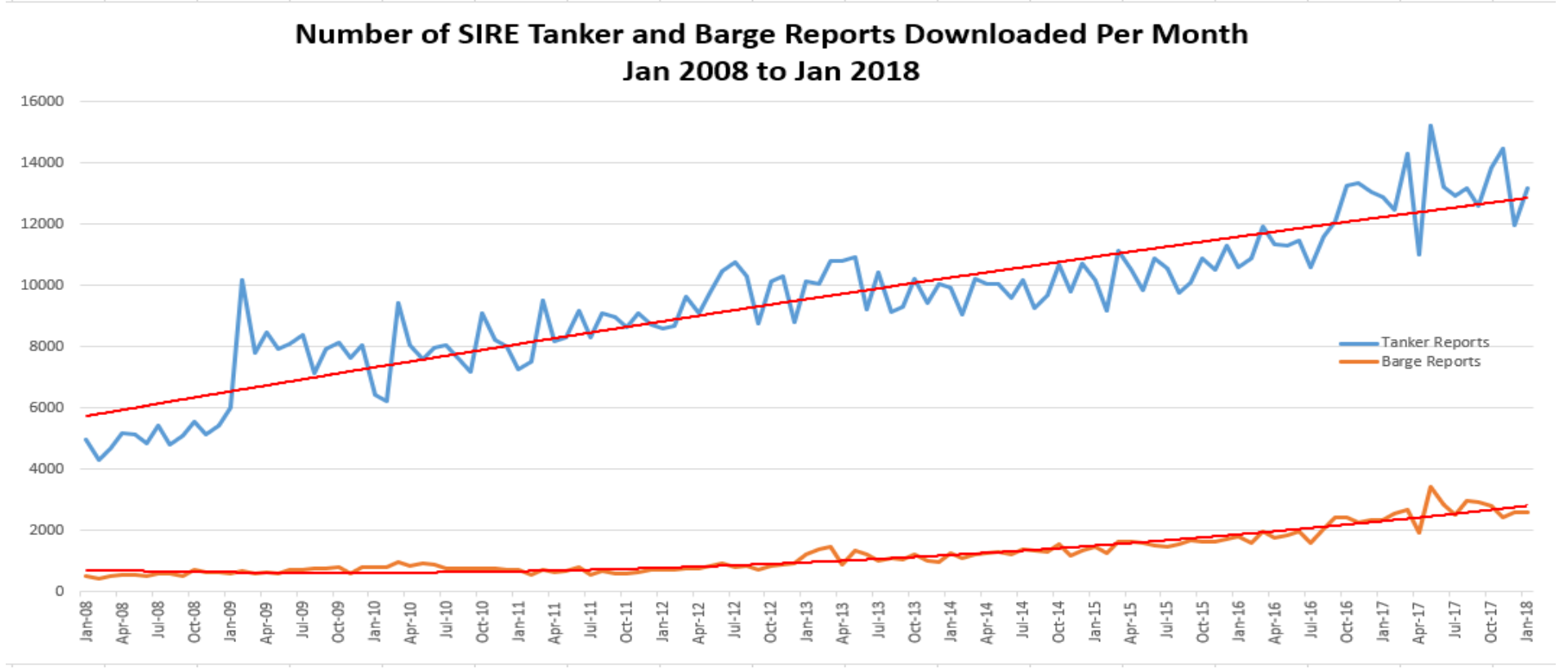
SIRE Report Submissions

Number of SIRE Tanker and Barge Reports Downloaded Per Month
Aug 2008 to Aug 2018



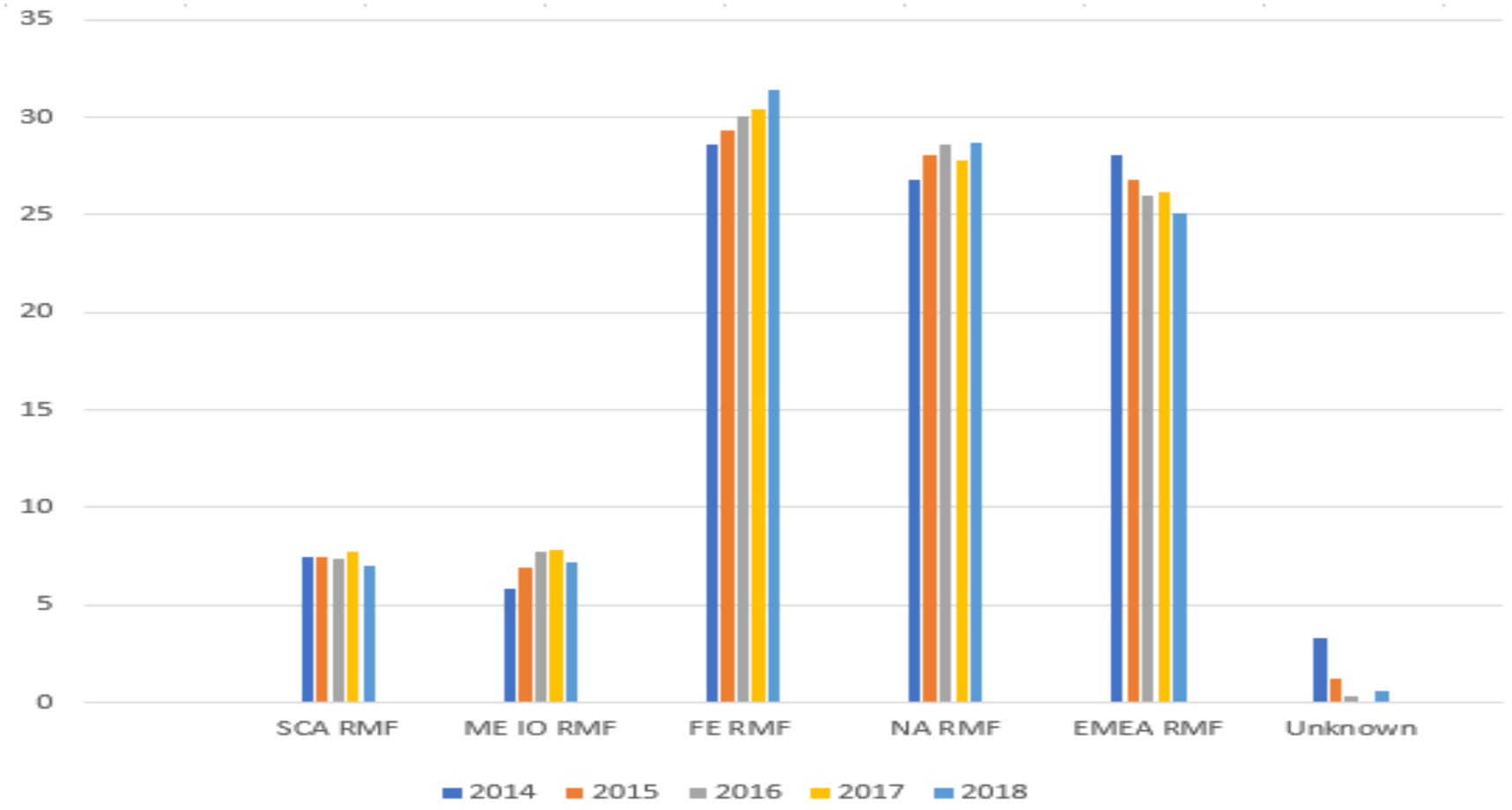
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average annual increase
Tanker Reports	89822	92577	105775	117726	124780	120578	125837	142884	158046	107886	+6.61%
Barge Reports	8068	10318	8091	10057	14813	16204	18853	24136	32119	21462	+19.86%

SIRE Reports Downloads



	2009	2010	2011	2012	2013	2014	2015	2016	2017	Average annual increase
Tanker Reports	89822	92577	105775	117726	124780	120578	125837	142884	158046	+6.61%
Barge Reports	8068	10318	8091	10057	14813	16204	18853	24136	32119	+19.86%

% SIRE Inspection Reports Per RMF region



TMSA Programme Performance

TMSA Statistics

TMSA3 Migration: From 9th April 2018 all TMSA reports created or published within SIRE must be in the TMSA3 format. Technical Vessel Operators with existing TMSA2 documents will no longer be able to upgrade the files to TMSA3.

998 out of the 1073 (93.01%) Vessel Operators subscribed to TMSA in 2017 or 2018 have either a Published a TMSA3 report or are in the process of preparing a TMSA3 for publication.

Published reports as of :

- Operators with a published TMSA3**: 917** (85.46% of registered operators)
- Operators with a published TMSA2: **0** (0% of registered operators)**, 0** of which have a TMSA3 in draft
- Operators with no published TMSA report: **156** (14.54% of registered operators), **81** of which have a TMSA3 in draft

TMSA Key Statistics	2016	2017	2018 (to 25/9/18)
TMSA published (2 or 3)	2,085	1,895	1158
TMSA downloaded	37,228	38,223	21,253

OVID Programme Performance

OVID Programme Participants

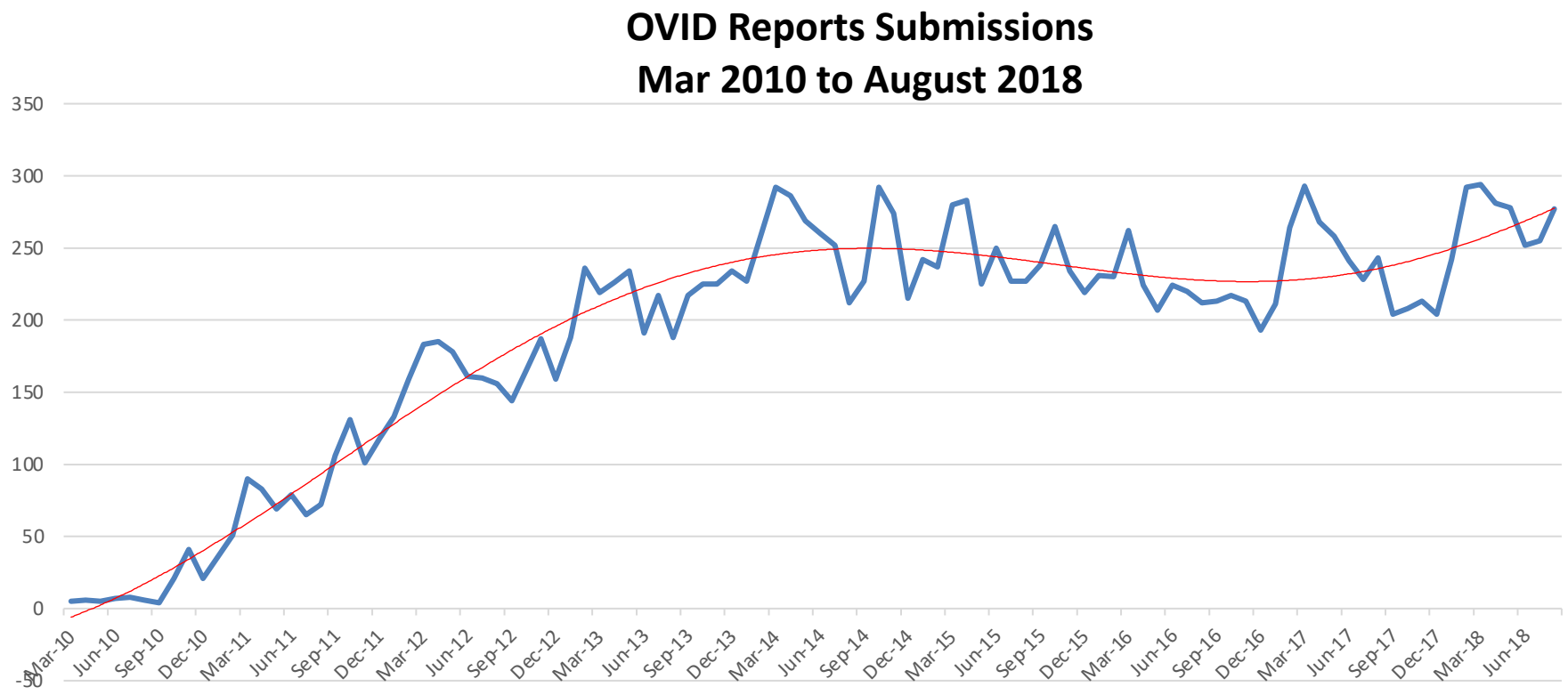
The table below shows a comparison of the numbers and types of the participants registered in the OVID Programme in 2017 and 2016:

OCIMF Membership	2016	2017
Member Companies, all programmes	106	109
OVID Programme Participants	**2016**	**2017**
OVID Submitting Members	57	63
OVID Recipient Members (including PSC)	0	30
OVID Technical Vessel Operators	1643	1834
Accredited OVID Inspectors	492	508

OVID Programme key Statistics

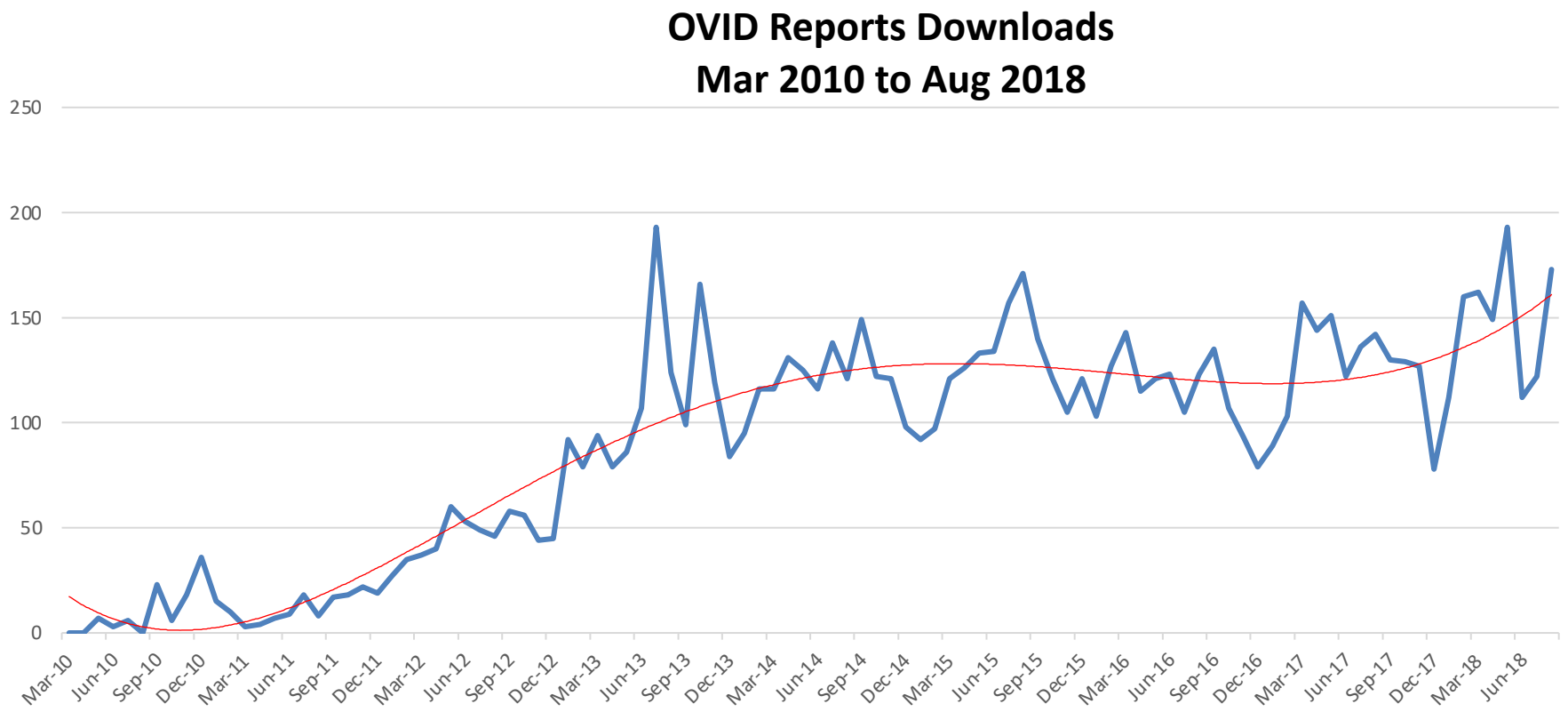
OVID Programme Key Statistics	2016	2017
Distinct vessels inspected in 12 months	2,557	2,736
VPQs/BPQs downloads	13,501	34,200
Inspection reports published	2,644	2,820
Ratio of inspection reports to vessels	1.03	1.03
OCIMF Members Inspection report downloads by	1,364	1,494
Recipient Members Inspection report downloads * Became available in 2017	0*	12
PSC Inspection report downloads		
TOTAL Inspection report downloads :	1,364	1,506

OVID Report Submissions



	2011	2012	2013	2014	2015	2016	2017	2018 (31 Aug)
Report Submissions	1001	1970	2594	3066	2917	2644	2835	2171

OVID Report Downloads



	2011	2012	2013	2014	2015	2016	2017	2018 (31 Aug)
Report Downloads	149	542	1316	1446	1510	1364	1506	1183

OVMSA Programme

Offshore Vessel Marine Self Assessment

- The OVMSA concept is based on the success of the TMSA methodology
- OVMSA helps Technical Vessel Operators prioritise the development and improvement of their own Safety Management System, while providing insight into industry performance indicators that may be used to drive an internal continuous improvement process.
- In addition to functioning as a tool for the operator, OCIMF member companies can use the OVMSA system to develop an overview of overall operator performance in conjunction with OVID inspections.
- Many OVIQ questions answered in the course of an OVID inspection were designed to be matched against OVMSA by the OCIMF member company Marine Assurance teams.

OVMSA Statistics

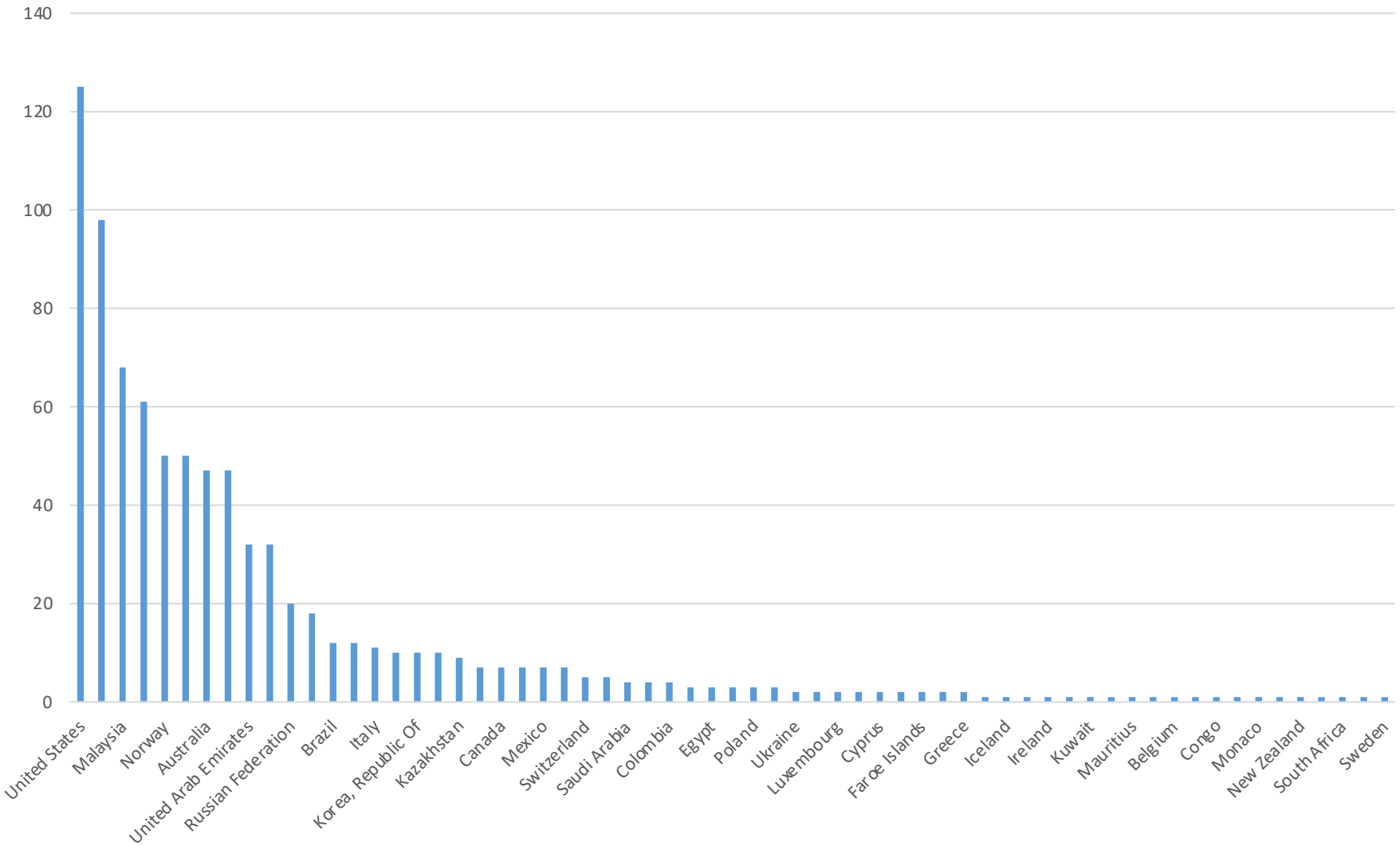
- **491** published OVMSAs are more than **1 year old**
- **333** published OVMSAs are more than **2 years old**
- **241** published OVMSAs are more than **3 years old**

1099 Operators using OVMSA (have a draft or published document) out of **1936** registered operators : **56.77%**

822 Operators with published OVMSAs: **42.46%**

OVMSA

Published OVMSAs By Operator Country



A Voice for Safety

South America and Central America Inland and Coastal Barging Focus Group

SACAICBFG

Gonzalo Mera Truffini– Regional Champion (YPF)

SACAICBFG

Historial

- Originalmente constituídos para gestionar los procesos de inspecciones a nivel regional (BIQ, BPQ y acreditación de Inspectores SIRE CAT3).
- Se incrementó el nivel de responsabilidad para cubrir temas de Seguridad y cuidado medioambiental en la operacion de buques y barcazas de navegación interior y costera.

Propósito

- Revisar y gestionar los esquemas de inpección regionales.
- Dar soporte técnico a nivel regional al Global Inland and Coastal Focus Group.

Futuros desarrollos:

- Mantener revisión de los cuestionarios de inspección (BIQ) y de pariculares (BPQ).
- Desarrollar una guía para la conversión de barcazas de condición abierta a condición cerrada.
- Continuar realizando Seminarios abiertos con Operadores.

SACAICBFG

- En el mes de Mayo se realizó en Asunción del Paraguay el primer Seminario con Operadores.
- Se está planificando el 2do Seminario abierto a Operadores en Manaos Brasil, en el mes de Noviembre.

BIQ

BIQ5 S.Am C.Am V2.0

- Se está comenzando a realizar actualizaciones de las preguntas de los cuestionarios de inspección.
- Se vana ampliar aún más y mejoraron las guías para los inspectores. Se reconoce que estas guías son también útiles para los Operadores.

BPQ

SACA Inland Dumb Barge (2025)

SACA Inland Self-Propelled Barge (2026)

SACA Inland Tug (2027)

Los modelos de BPQ desarrollados contienen campos específicos para las distintas variantes de embarcaciones.

Los cuestionarios, reducen la cantidad de consultas que pueden recibir los Operadores por parte de los departamentos de Vetting, Inspectores, etc.

SIRE CAT 3 Courses

SIRE CAT 3 Accreditation Course:

– Curso de acreditación de nuevos inspectores.
– Curso de refresco para inspectores ya acreditados.

Los cursos tendrán lugar durante los primeros meses de 2019, en la Torre Madero de YPF en la ciudad de Buenos Aires.

Recommendation for Converting Inland and Coastal Barges From Open to Closed Condition

Los aspectos que contendrá serán:

- Definiciones.
- Como cumplir con la condición cerrada de carga en una barcaza.
  - » Sondaje y muestreo.
  - » Sistema de Venteo.
  - » Monitoreo del contenido de tanques.
  - » Protección contra rebalse.
- Riesgos de una conversión inadecuada.
- Testeos y mantenimiento.
- Certificación.

Gracias

Thank you

A Voice for Safety

Questions ?

Lunch

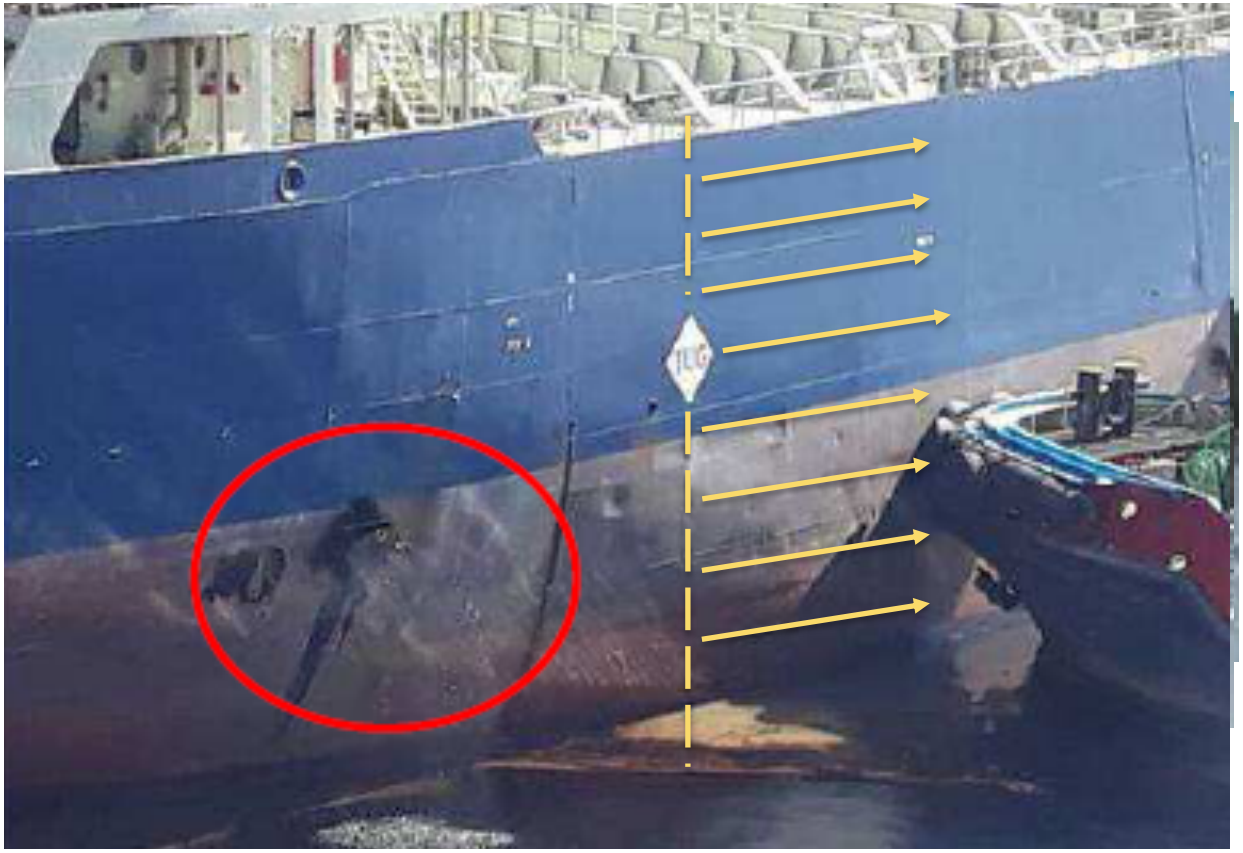
Best Practice and Lessons Learned

OCIMF

Derrame por avería en tanque de decantación del buque.

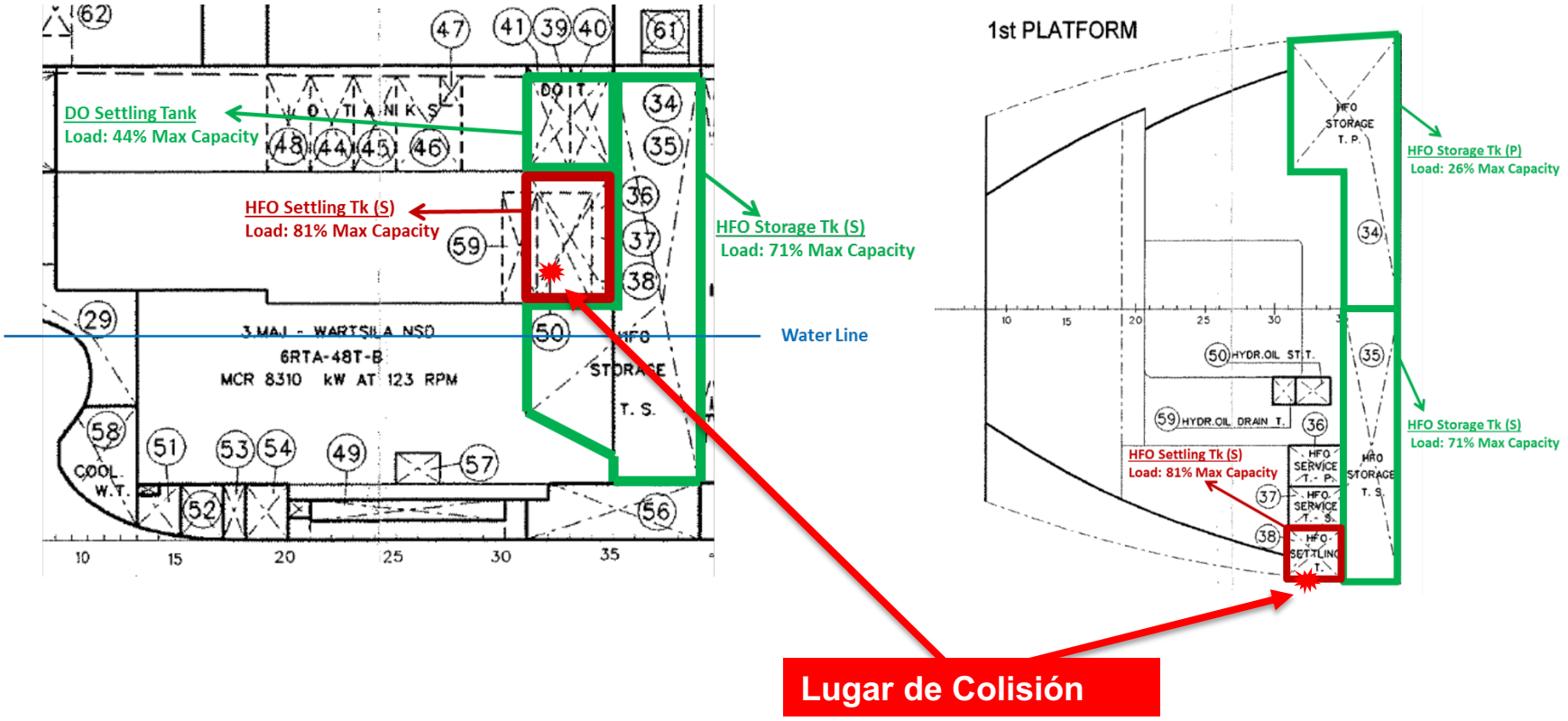
Descripción del evento

- El incidente sucedió durante maniobra de amarre.
- La popa del buque evoluciona hacia la banda de babor, acercándose a otro buque que se encontraba amarrado.
- El remolcador que asistía la maniobra de popa, se apoya y empuja fuera del área de empuje.
- Debido al empuje, se produce la rotura de la traca, produciéndose el derrame de IFO 180.



Descripción del evento

CONDICION DE LLEGADA A PUERTO DE AMARRE:



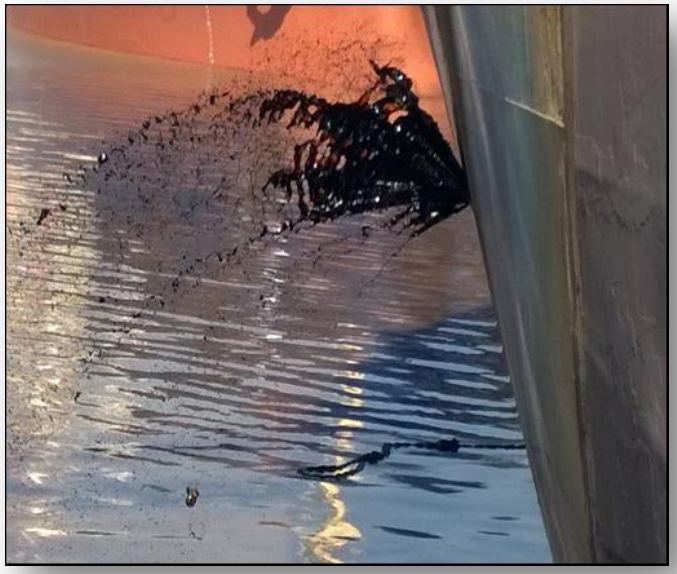
Descripción del evento

NIVEL DE RESPUESTA A LA EMERGENCIA: EXCELENTE:

- Estricto Cumplimiento de Procedimientos, Notificación y Respuesta a la Emergencia
- Inmediata escora del buque a babor lastrando todos los tanques mientras se completaba el amarre.
- Trasvase urgente de Settling Tank de Er a Carbonera de Babor.
- Gracias a las maniobras de trasvase se minimiza el impacto del derrame.

DAÑOS:

- Daño al casco – Agujero en el Tanque de Decantación – Settling Tank
- Derrame al Agua de aproximadamente 5 m3 de IFO 180.



Descripción del evento

Nº	RECOMENDACIONES
	ANALISIS DE TODA LA FLOTA Y PROPUESTA A LOS CHARTEADORES: Se analiza caso a caso cada uno de los buques en función de sus características constructivas / operativas / tráfico, estableciéndose los lineamientos que se detallan a continuación:
1	PROHIBICION DE CARGA EN LOS TANQUES DE BUNKER LATERALES SIN PROTECCION: Luego de Analizar los viajes tipos realizados y considerar el Bunker necesario para la realización de los mismos, se establece la Prohibición de uso de los tanques laterales de Bunker en aquellos buques que tengan la capacidad en los tanques centrales para la realización del viaje determinado como viaje tipo.
2	ESTABLECIMIENTO DE PROCEDIMIENTO PARA CARGA DE TANQUES DE BUNKER LATERALES SIN PROTECCION: Para aquellos buques donde la capacidad de los tanques de bunker centrales no permite que se dejen de utilizar los tanques laterales, se analizo los viajes estándares y se determino el nro máximo de días y en función de eso se realizo el calculo de bunker, estableciéndose el siguiente procedimiento: - Los tanques laterales serán cargados de modo tal que nunca el nivel de los mismos supere el nivel de 2 metros la línea de flotación con el buque lastrado - Los primeros tanques en consumirse serán los tanques laterales sin protección de modo tal de lograr que el nivel de estos llegue rápidamente debajo de la línea de flotación. - En caso de colisión se estableció un procedimiento rápido de trasvase (tal como el efectuado en el incidente en cuestión)
3	NO USO DE LOS TANQUES SETTLING SIN PROTECCION: En aquellos buques donde existió la posibilidad, se dejo de utilizar los tanques Settling Banks sin protección lateral sobre el casco.

Descripción del evento

Nº	RECOMENDACIONES ADICIONALES
1	REVISIÓN DE EVALUACION DE RIESGO - CÓMO MINIMIZAR DERRAMES EN CASO DE COLISIÓN: Se solicito la realización de una revisión de las evaluaciones de riesgo de como minimizar el impacto ambiental en caso de derrame.
2	RETROALIMENTACIÓN DE LOS CAPITANES SOBRE EXPERIENCIA EN EL USO DE REMOLCADORES: Se solicito feedback de todos los Capitanes que operan en la zona.
3	MARCAS EXTERNAS EN EL CASCO DE LOS TÁNQUES DE F.O.: Se evaluará la conveniencia /factibilidad de marcar los límites de los tanques de combustible como marca adicional a la ya existente de TUG. Cuando se arribe a una decisión se tomarán medidas en todos los buques que así lo requieran.

Thank you.

A Voice for Safety

Accidents and Mentoring

Andre Le Goubin – Nautical Institute

MARINE ACCIDENTS & MENTORING
(A Mentoring Conversation)

Captain André L. LeGoubin FNI
Vice President - The Nautical Institute

The Oil Companies International Marine Forum (OCIMF)
South & Central America Regional Marine Forum

Quito, Ecuador, 02nd October 2018


The
Nautical
Institute

Ship To Ship
-
Mooring Master (POAC)

Aims and Objectives of Research

- To discover if marine accidents and incidents were occurring because experiential knowledge was not being transferred onboard vessels in the traditional way, by mentoring
- To re-establish the flow of knowledge by providing ethical, structured and practical suggestions to mentors, and
- To engage the maritime community in a conversation about mentoring.

Definitions

- **Experiential Knowledge – 'Knowledge gained from professional "on the job" experiences and reflected upon.'**

- **Mentor - The Oxford English Dictionary describes a Mentor as 'an experienced and trusted adviser' and sources the origin of the word as 'from the name of Mentor, the adviser of the young Telemachus in Homer's Odyssey'.**

Definitions (Contd.)

- **Mentoring - 'Mentoring is a form of knowledge transfer based in part on altruism'**
  Davenport T. & Prusak L. (1998).

- **Reflection - 'A thoughtful (in the sense of deliberative) consideration of your experiences, which leads you to decide what the experience means to you.'**
  Institute of Work Based Learning. (2008).

DNA Marine USA

A True Moment of Experiential Learning

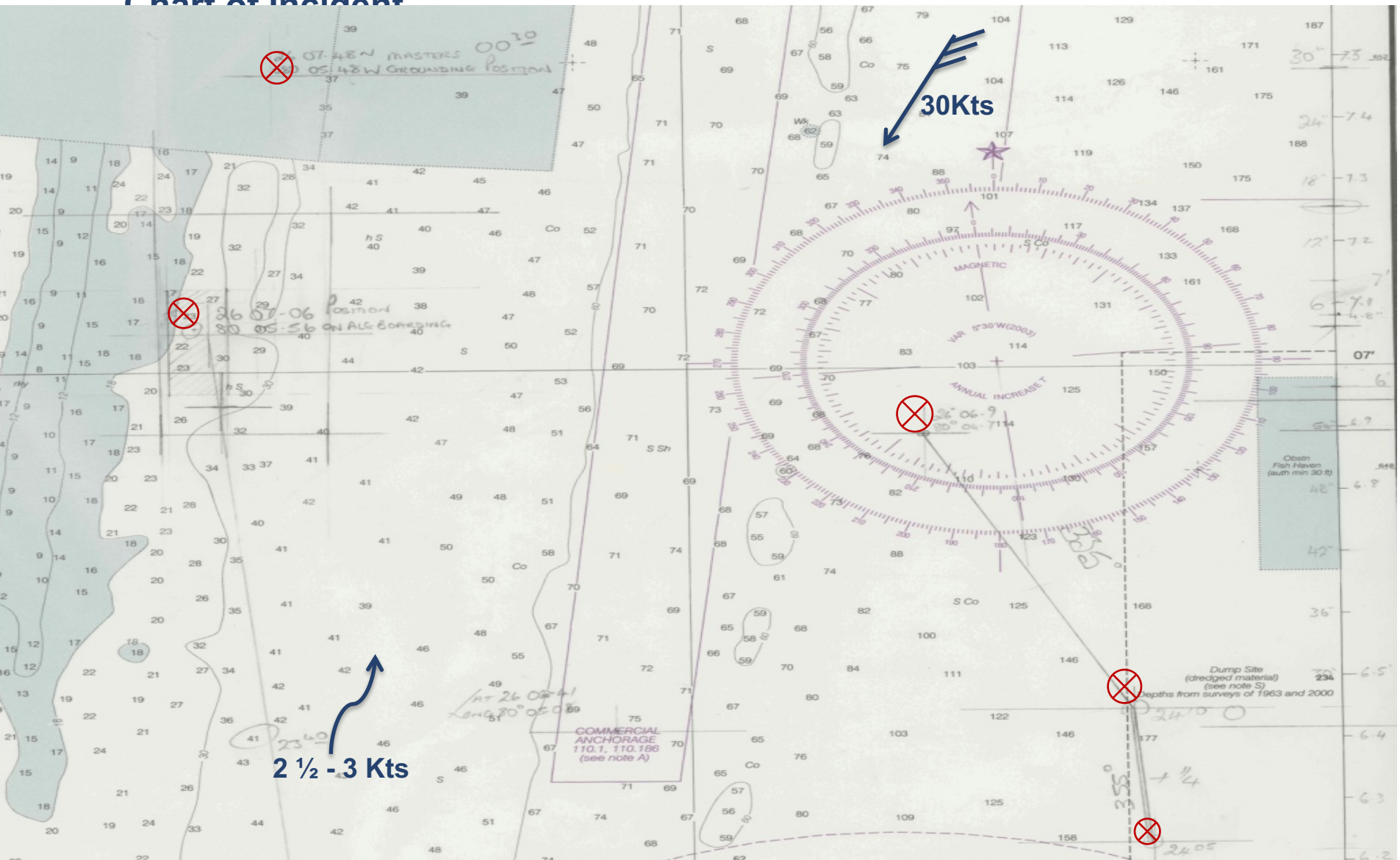
DNA Marine USA

The Nautical Institute

My First Ship

The Nautical Institute

Chart of Incident



Barriers to Mentoring

- Demands on Masters/Senior Officers time
- Rapid promotion
- Multinational / cultural crews
- Poor training / lack of basic knowledge
- Attitude / lack of interest
- Employing anyone who has a ticket
- Inexperience, and
- No formal system of training for Senior Officers

And The Top Answer Is?

LANGUAGE

DNA Marine USA

The Nautical Institute

André's 10 Minute Challenge

Benefits of Mentoring

- **FREE!**
- **Maximum amount of time required – 10 minutes**
- **No legislation, formal procedures or paperwork**
- **Enhances team concept whether onboard or ashore**

DNA Marine USA

Benefits of Mentoring

FREE

(And non-regulatory!)

DNA Marine USA

The Nautical Institute

Chart of Incident

Shiphandling Logbook

Shiphandling Logbook

Vessel: MV Noname	Date: 31 January 2018
Simulator:	Manned model:

Risk assessment (restrictions, traffic, visibility, abort point etc.)

Berthing river berth, on flood tide. Tidal restriction, must berth before tide starts to ebb. Depth of water 16.0 metres at high tide. Visibility reduced in heavy rain showers. Position tugs to make fast – for'd stbd bow, aft centre lead – tugs lines

Turn in turning basin using tugs. Berth No 4 port side to.

Internal forces	External forces
Rudder Semi balanced	Current/tide Flood tide – 3 kts
Propulsion R H propeller	Windage SW5 occ 6
Pivot point posn 0.4L from for'd	Sea state River waters, slight chop
	Weather Occl heavy rain, gusting wind

Type of manoeuvre (from STCW table A -II/2 or other)

6 Berthing with tugs

Additional information (if appropriate)

Ship's particulars Bulk carrier 56k dwt 185 metres LOA 12.0 metres draught

Turning circle and transfer

Under-keel clearance 1.5 metres minimum

Squat effect 1.5 metres at full manoeuvring speed in river

Tugs (number, position and power) 2 x ASD tugs 60t BP and 3,800kW

Other

Description of manoeuvre – include sketch if necessary

On board at pilot station. Master/pilot exchange conducted. No defects on vessel. Distance to berth 4.0 miles, approx half hour. Advised Master tugs will be attached just after entrance to river.

Proceed full speed, reducing to half speed approaching tugs. Tugs attached. Aft tug to prepare to help reduce speed approaching turning basin.

Engine stopped and tested astern before reaching turning basin. Dead slow speed, and hard to starboard. Stop engines. Half astern to continue swing. For'd tug full pull to stbd and aft tug full pull to port. Stop engines. Vessel swing in position. Stop both tugs pull. Use engine and helm to slow swing. For'd tug pull ahead. Aft tug pull stbd to steady, then stop. Dead slow ahead towards berth. Use helm and tugs to approach berth. Tide almost at high. For'd tug to push bow to berth. Spring line ashore for'd. Vessel in position. Aft tug let go and push amidships. Hold vessel alongside until all lines ashore and fast. Let go for'd tug and dismissed.

Master/instructor comments

Good approach, good communication with tugs. ROT in turning basin perhaps too fast, but good use of tugs and helm/engine to steady on completion. Good slow approach to berth

Signature A. Belter Senior pilot	Date 31 January 2018

Comments and reflections

Satisfied with good, safe manoeuvre, but not sure I was completely correct in turning basin, although it worked out well. Also the tide reached slack water earlier than I expected as hoped to use last of flood to assist on steering to berth.

DNA Marine USA

Does Mentoring Work?

"Oh that is no problem, Sir. They all speak English when I am on the bridge."

What do I Need to Do?
(To be a good candidate)

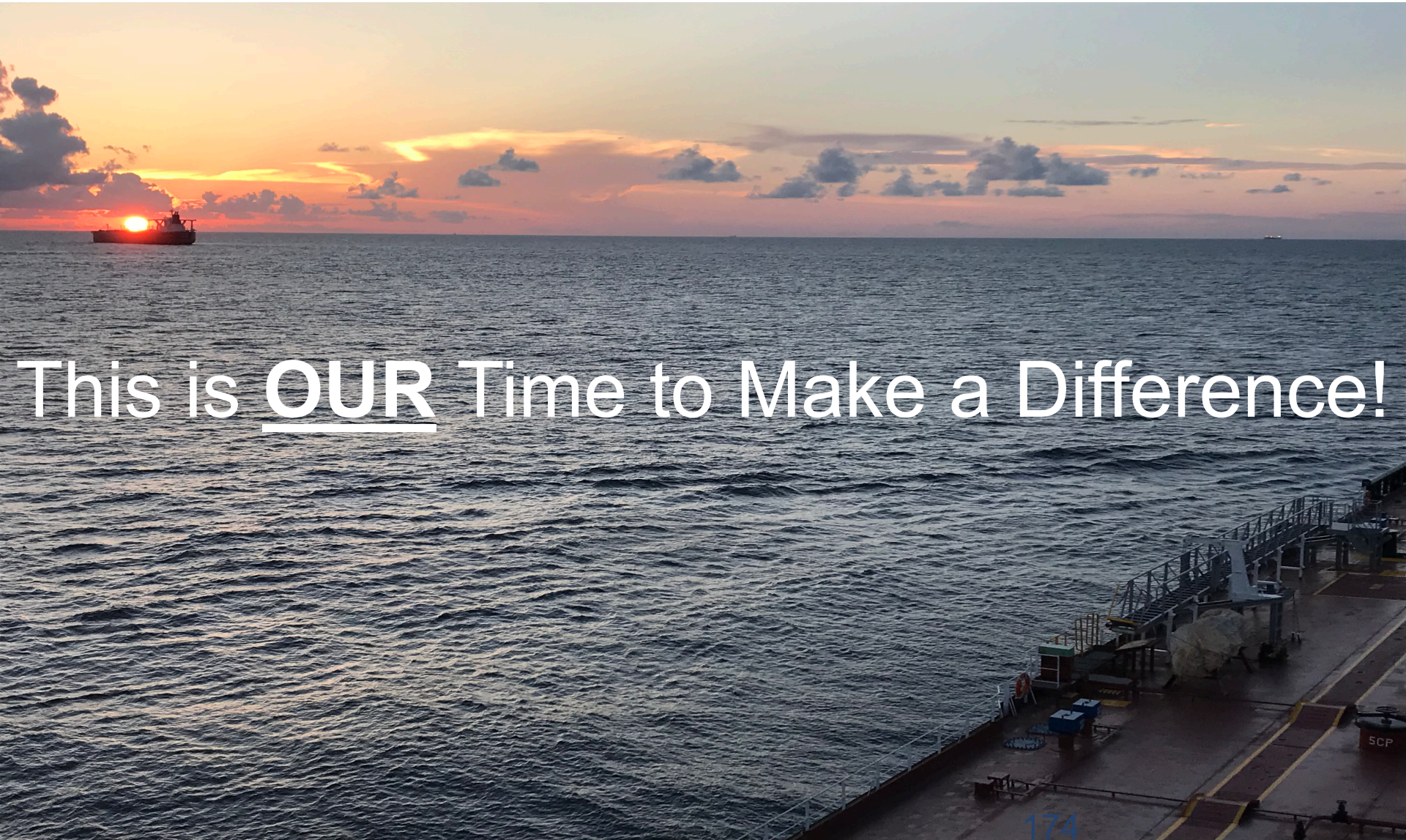
- **Look at your role, are you doing your best or just enough to keep everyone off your back?**
- **Do you engage as part of the team working with everyone for a successful outcome?**
- **Do you ask questions when you are unsure or just 'wing it' (take a chance) hoping everything will turn out OK?**
- **Do you use the expression "that's not my job?"**

DNA Marine USA

The Nautical Institute

Is it Too Late?

DNA Marine USA



UPGRADE YOUR FUTURE

member@nautinst.org

www.nautinst.org

A Voice for Safety

OCIMF

Accidentes en hidrovía Paraná-Paraguay.

Gonzalo S Mera Truffini – YPF

Colisión con muelle

Descripción del evento

- Luego de realizar la maniobra de zarpada del muelle, se procede aguas arriba para tumbar el buque, y así iniciar su navegación aguas abajo.
- Se realiza la caída a babor, con máquina y bow thruster, pero el buque no evoluciona como se preveía.
- Avería principalmente en el bulbo del buque y la sección de proa.
- Por efecto de la corriente el buque comienza a derivar hasta colisionar con un muelle.

DAÑOS

- Daños a la estructura y defensas del muelle.

Colisión entre buques
Descripción del evento

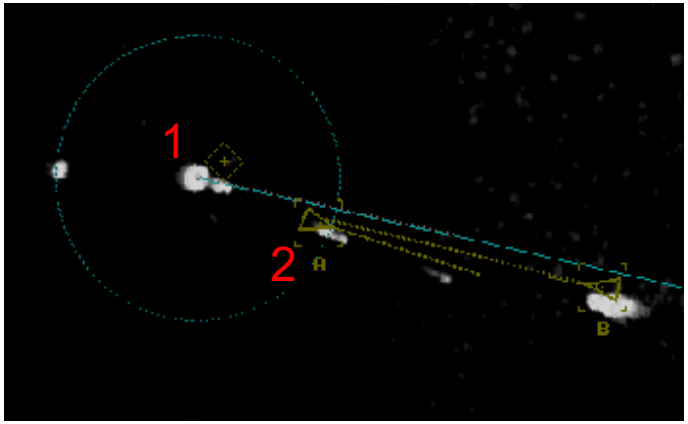
- En zona de fondeo, durante temporal un buque comienza a garrear el ancla.
- Derivando de forma no controlada. El buque intenta poner máquina pero no logra hacerlo a tiempo, produciéndose la colisión con otro buque, que se encontraba fondeado en el mismo área.
- Como consecuencia del accidente se produjeron daños en ambos buques.

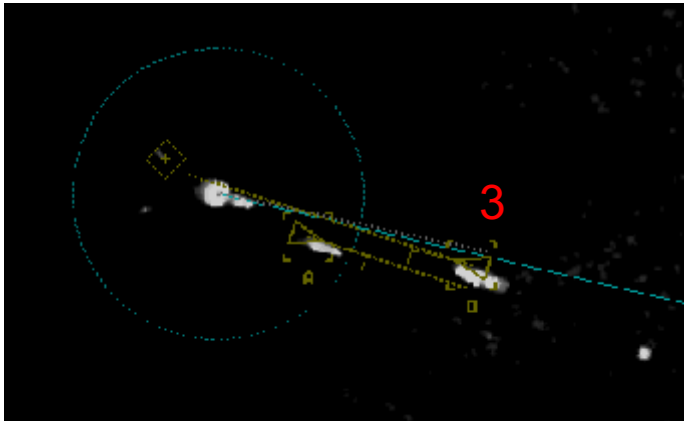


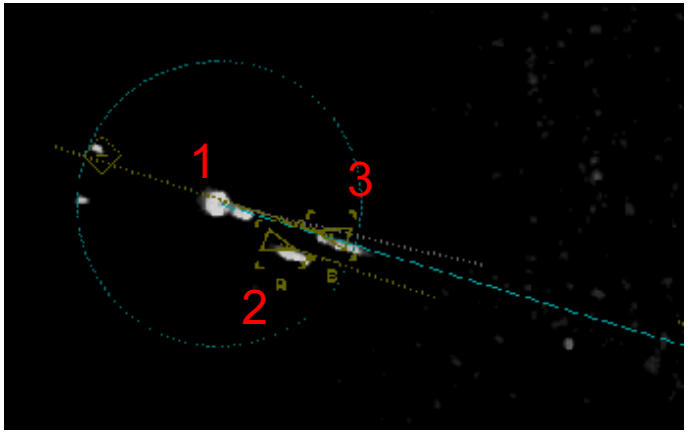

Colisión entre buques en navegación en canal

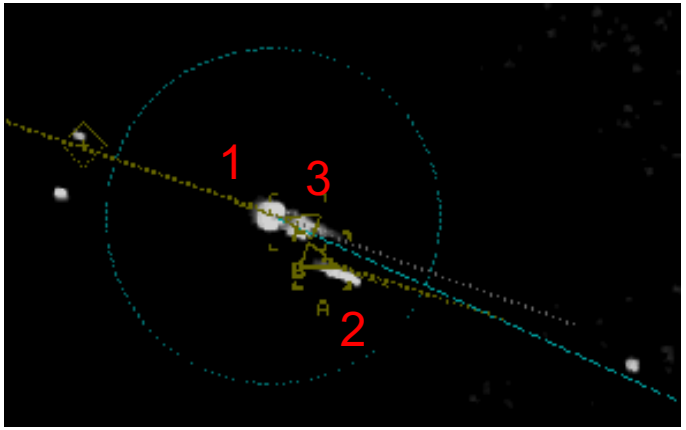
Descripción del evento

- Durante navegación por canal balizado, Los Prácticos de Río coordinan una maniobra de adelantamiento (buques 1 y 2). Inicialmente el buque 2 desiste de realizar.
- Los daños sufridos por los buques fueron menores. No se registró derrame de producto, ni daños a personas.
- Simultáneamente se encontraba navegando otro buque de vuelta encontrada (buque 3).
- Debido a que el adelantamiento no se realizó en el tiempo previsto el buque 2 no se ve posibilitado a abandonar el canal.
- Debido a las fallas de comunicación y al restringido ancho del canal de navegación se produce la colisión de dos de los buques (1 y 3).



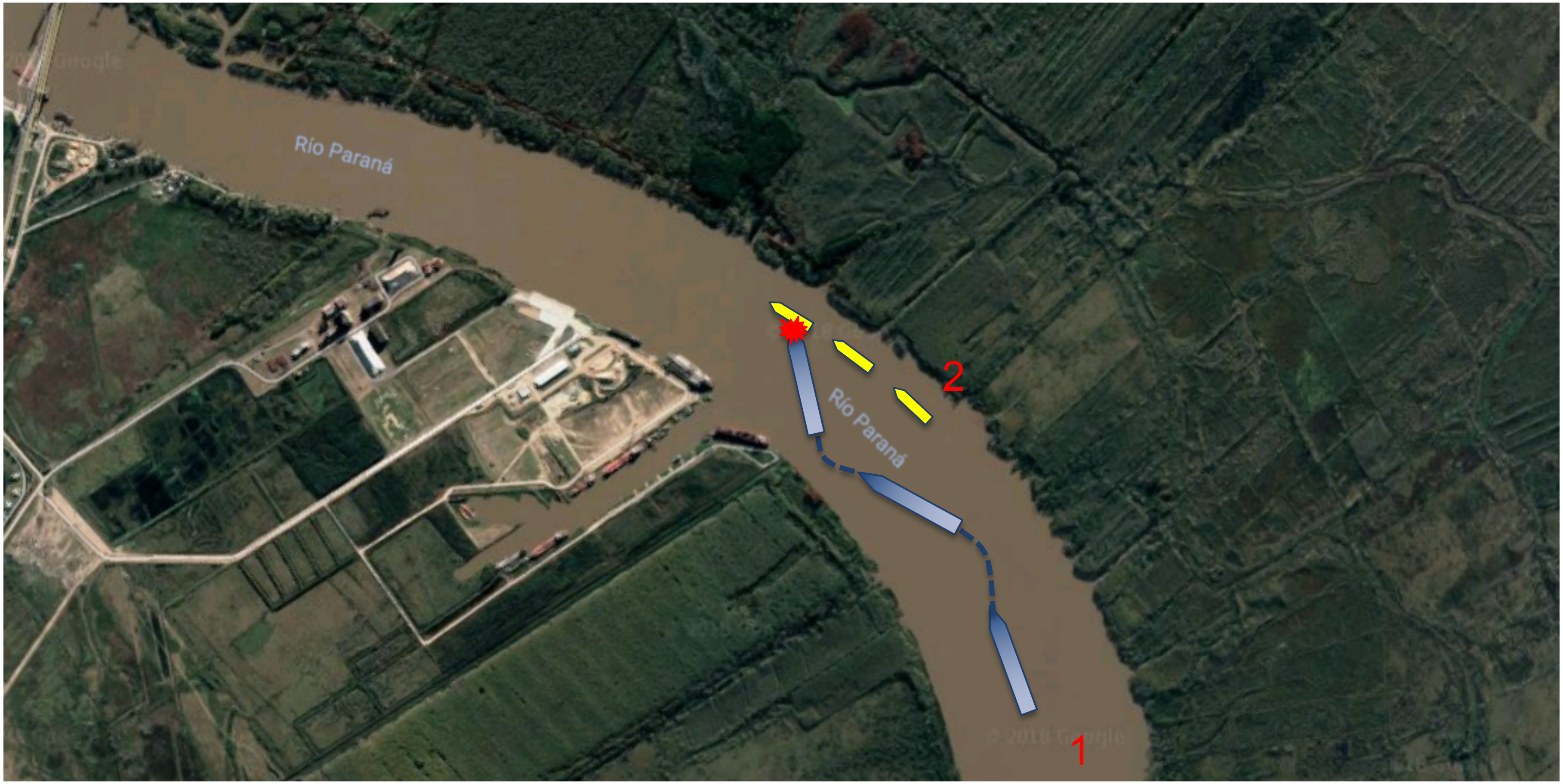






Colisión entre buques en navegación en río
Descripción del evento

- [illegible] de un puente donde no están permitidos los cruces ni los sobrepasos.



Colisión entre buques en navegación en río
Descripción del evento

- Como consecuencia del accidente se produjeron daños en ambos buques. No se produjo contaminación ni hubo daños a personas.

Colisión con muelle durante maniobra de amarre

Descripción del evento

Daños:

- Pérdida de total del elevador del muelle.
- Hubieron 2 personas con heridas menores.

Capitalizar el aprendizaje a través de los incidentes

Situación actual:

- El registro y distribución de incidentes no es usual en la región.
- Los Organismos estatales no poseen sistemas públicos de difusión y estadística de incidentes.
- Como alternativa, los Operadores pueden distribuir sus análisis de incidentes dentro del sistema SIRE, lo cual ayuda también a los procesos de Vetting.

Conocer la ocurrencia de eventos contribuye con:

- El desarrollo de la industria y prevención de nuevos incidentes, a través de la distribución de las lecciones aprendidas.
- Mejorar los análisis de riesgo, ya que las fórmulas mayormente usadas están compuestas por

RIESGO= DAÑO X PROBABILIDAD X EXPOSICIÓN

- No contar con los datos probabilísticos confiables vuelve subjetivos los análisis de riesgo.

Thank you.

A Voice for Safety

Questions ?

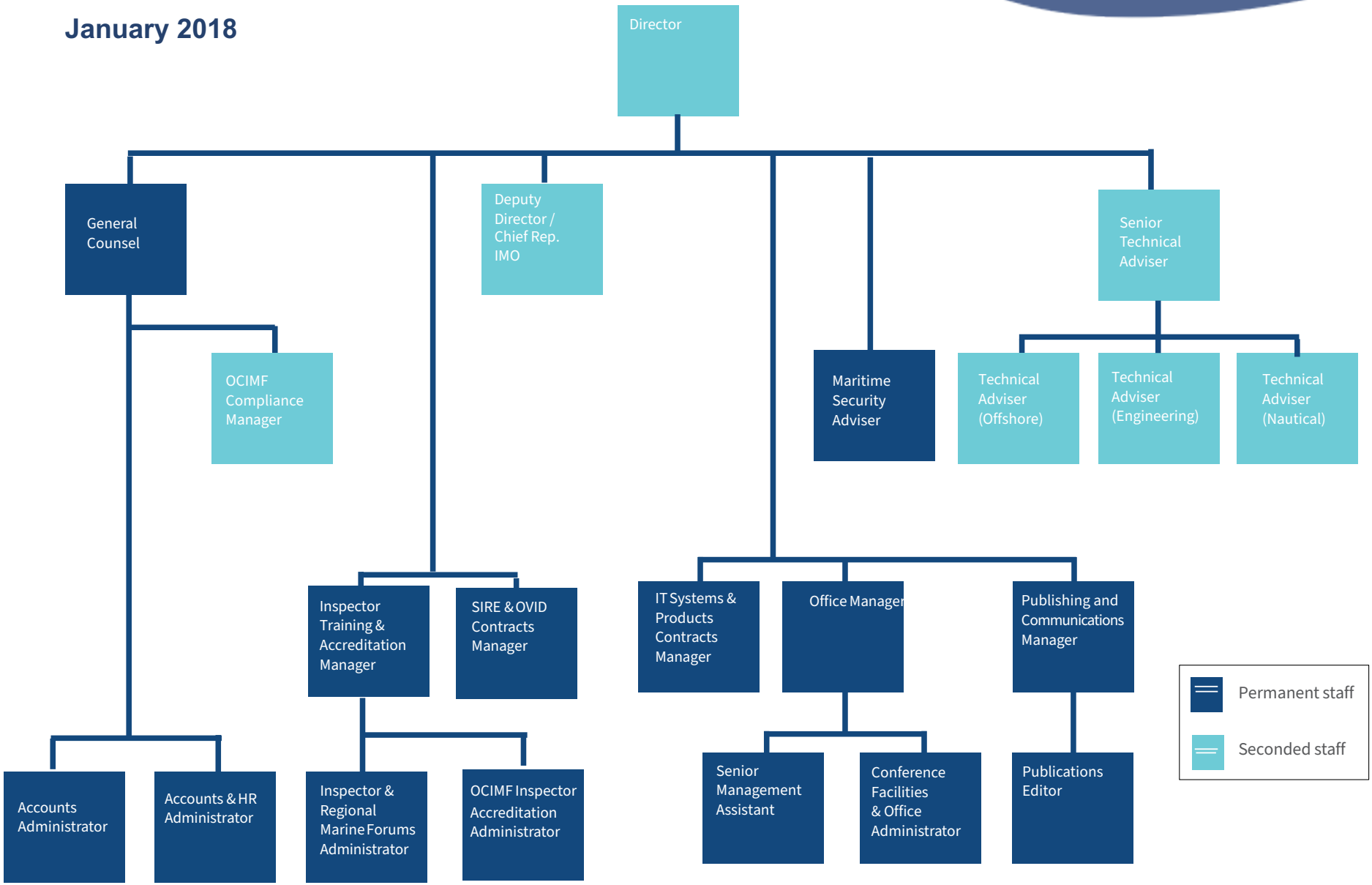
Coffee

OCIMF Secretariat - Updates

Rob Drysdale – Director (OCIMF)

OCIMF organisational chart

January 2018



New Staff

Director

– Robert Drysdale (IMT)

Deputy Director

– Sam Megwa (BP)

New Staff

Senior Technical Adviser
– David Wall (Chevron)

Engineering Adviser
– Ricardo Martinez (Chevron)

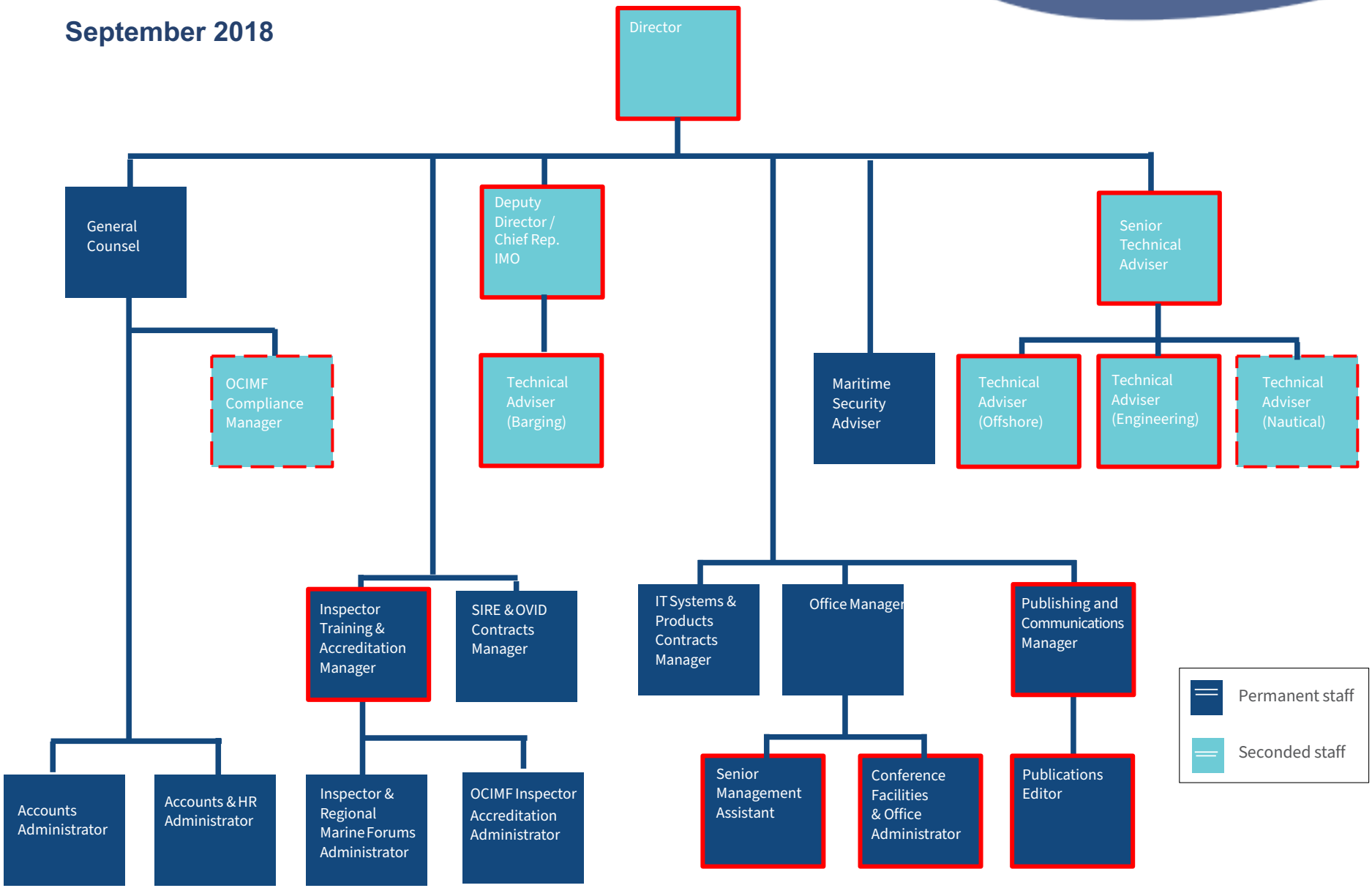
New Staff

Inspector Training & Accreditation Manager – Ajay Gour

Barging Adviser – Matthew Graham (IMT)

OCIMF organisational chart

September 2018



OCIMF Publications

Tony Wynne – Technical Adviser (Nautical)

Publications

Released in 2017

Books

- Recommendations for Oil and Chemical Manifolds and Associated Equipment
- Tanker Management and Self Assessment, Third Edition

Information papers

- Northern Sea Route Navigation
- The Guidelines On Cyber Security Onboard Ships
- Linked Ship/Shore Emergency Shutdown Systems for Oil and Chemical Transfers
- Inert Gas Systems The Use Of Inert Gas For The Carriage Of Flammable Oil Cargoes

Released or due in 2018

Books

• Mooring Equipment Guidelines, Fourth Edition (MEG 4) -	Published
• Cargo Guidelines for F(P)SO's -	Published
• Guidelines for Offshore Tanker Operations	Published
• BMP5 - Best Management Practices to Deter Piracy and Enhance Maritime Security in the Red Sea,	
• Gulf of Aden, Indian Ocean and Arabian Sea	Published
• Global Counter Piracy Guidance for Companies, Masters and Seafarers	Published
• Recommendations for Liquified Gas Carrier Manifolds	Published
• Effective Mooring	2019
• Construction Specification for Marine Loading Arms	2019

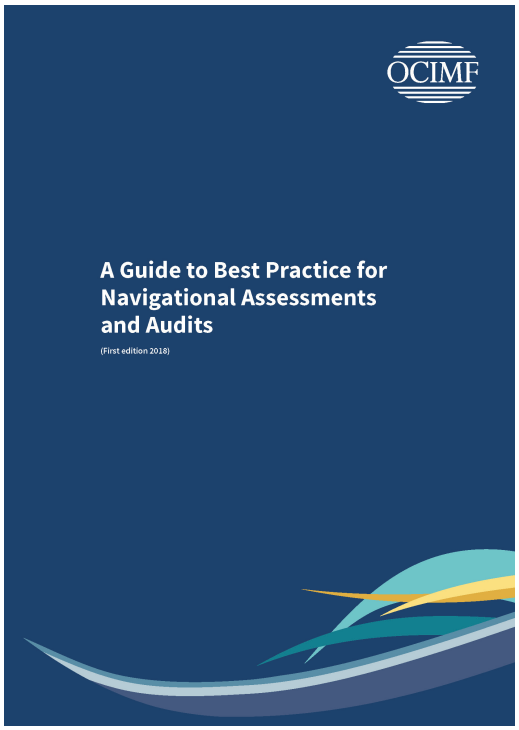
Information papers

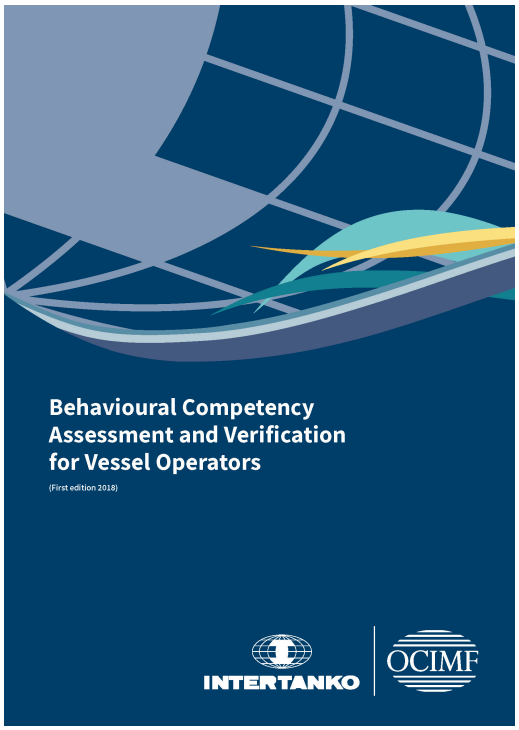
• Safety Critical Spare Equipment and Spare Parts Guidance	Published
• Marine Terminal Information Booklet	Published
• Guidelines to Harden Vessels	Published
• Navigational Audits and Assessments - A Guide to Best Practice	Due any day
• Joint INTERTANKO – Sharing of Lessons Learned from Incidents	November 2018
• Joint INTERTANKO – Behavioural Competency Assessment and Verification for vessel operators	November 2018
• Transfer of Personnel by Crane between Vessels	
• Volatile Organic Compounds (VOC) Emissions from Cargo systems on oil tankers	

Future Publications

Information papers

- Navigational Audits and Assessments - A Guide to Best Practice – Publishing this week
- Joint OCIMF / INTERTANKO – Behavioural Competency Assessment and Verification Guidelines - November 2018





- Ship To Ship Service Providers Self assessment – Mid to Late 2019

Questions ?

A Voice for Safety