



# Operationalizing SIRE 2.0

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*Founder partner, Navguide Solutions*



**INTERTANKO**



# Operationalizing SIRE 2.0



- Basics of SIRE 2.0, Third Phase. Intertanko feedback.
- Crucial changes that are expected.
- The Bow Tie Analysis
- How to operationalize SIRE 2.0 on the field.
- Frontline tested solutions that can benefit the industry.

How the industry would phase in to SIRE 2.0



# The New Regime

A Game  
changer

What could  
lead to  
resistance?



# SIRE 2.0

The new SIRE 2.0 regime will roll out to industry in a phased approach. Until then, the current SIRE programme will continue to be updated and improved to incorporate the latest standards, best practice and regulations.

**SIRE 2.0**

**<https://ocimf.org/programmes/sire-2-0>**



# Global Accident Statistics

*Is VIQ Effective?*

Global KPI 3, yet accidents occur every day. HE: 80.7%



**14 Jun 2024** Dredger collided with tanker Marine Honour Pasir

Panjang Terminal, bunker spill reached Sentosa, no injuries.

**12 Jun 2024** Taiwan Coast guard rescue 12 crew from a burning ship

**10 Jun 2024** Yaf Horizon engine room fire at Haifa Port

**08 Jun 2024** Tanker, TONG YUN, collided with an offshore embankment, departing KAOHSIUNG.

**02 Jun 2024** 34 containers falling overboard @ Marport, Turkey



# VIQ 7 v/s SIRE 2.0




## Ship Inspection Report (SIRE) Programme

Vessel Inspection Questionnaires for Oil  
Tankers, Combination Carriers, Shuttle Tankers,  
Chemical Tankers and Gas Tankers, Seventh  
Edition (VIQ 7)


17 September 2018

Oil Companies International Marine Forum




## SIRE 2.0 Question Library Part 1 – Chapters 1 to 7 Version 1.0

(January 2022)




The Oil Companies International Marine Forum (OCIMF)  
Vision: A global marine industry that causes no harm to people or the environment.  
Mission: To lead the global marine industry in the promotion of safe and environmentally responsible management of crude oil, oil products, petrochemicals and gas and to drive the same values in the management of related offshore marine operations. We do this by developing best practice in the design, construction and safe operation of tankers, barges and offshore vessels and their structures with humans and considering human factors in everything we do.



## SIRE 2.0 Question Library Part 2 – Chapters 8 to 12 Version 1.0

(January 2022)



The Oil Companies International Marine Forum (OCIMF)  
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# VIQ 7 v/s SIRE 2.0

*VIQ 7*

372 Questions



*VIQ 7*  
Focus areas  
Mainly management  
systems and  
hardware.



*SIRE 2.0*

Focus Areas  
Integration of human  
element.

*SIRE 2.0*

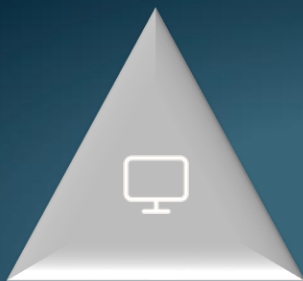
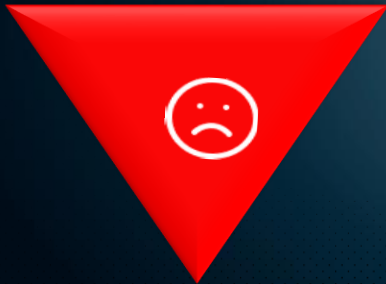
Shorter list of about 100  
questions each dealt  
with in detail



# VIQ 7 v/s SIRE 2.0

*VIQ 7*

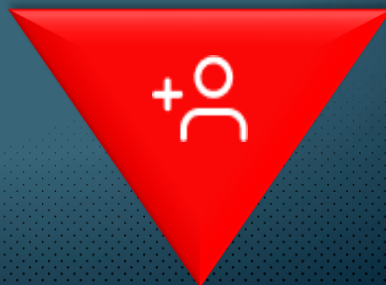
179 Pages



*SIRE 2.0*

1294 Pages

*VIQ 7*  
Open Book test  
All ships have the  
same question sets  
every time.



*SIRE 2.0*

Surprise test  
Dynamic question set that  
will be specific to that  
vessel, for that inspection  
and at that time



# VIQ 7 v/s SIRE 2.0

## *VIQ 7*

Observations means negative



## *VIQ 7*

Present condition  
Inspectors had no access  
to past observations.



## *SIRE 2.0*

Past observation also  
Inspectors will have access  
to past observations as well.

## *SIRE 2.0*

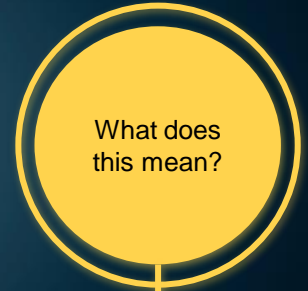
Observations may  
be positive, neutral  
or negative.





# The Human Factor

Introducing  
PIFs



What does  
this mean?



# Stress on the human factor

## *Why human factor?*

People are the most vital component and they make mistakes.

Mistakes are rarely intentional.

## *Performance Influencing Factors*

Factors that affect performance positively or negatively.

## *How to rectify the situation?*

Inspectors are empowered to find out PIFs.



*Human nature*

*Procedures*

*Communication*

*Working Conditions*

*Stress, Motivation, fatigue*

# PIFs

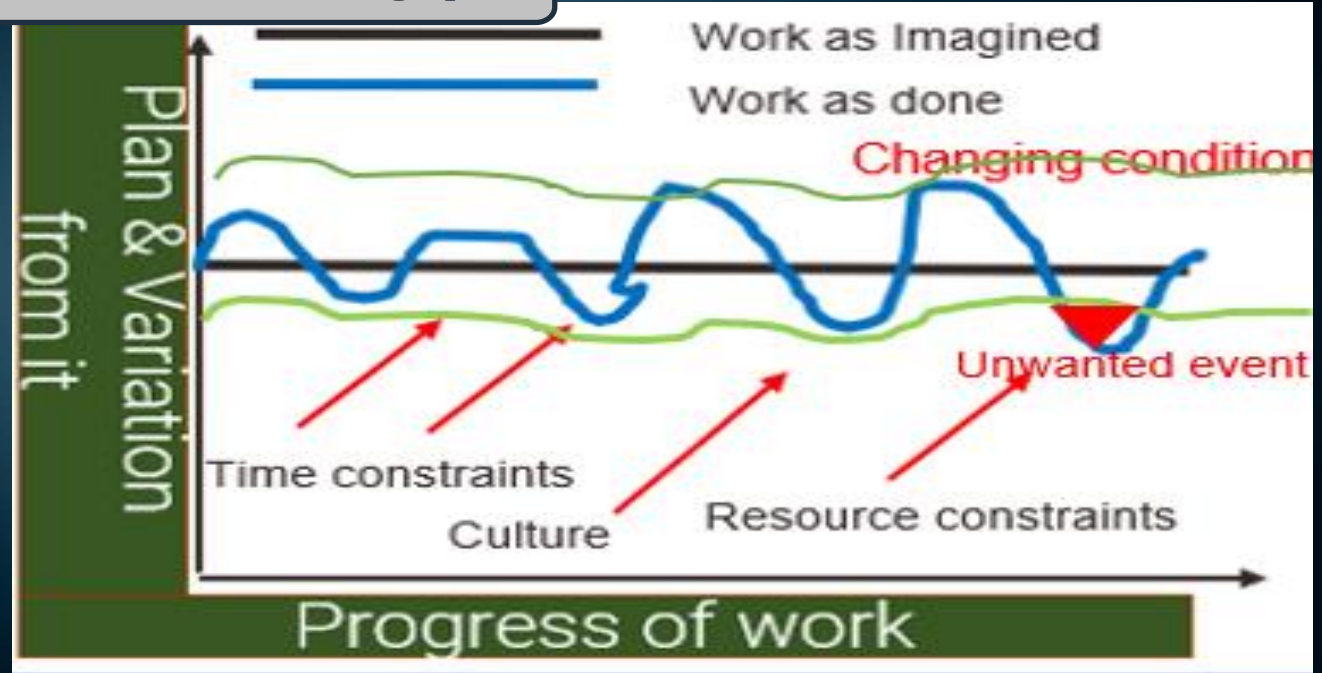
## Annex 7: Human – Performance Influencing Factors (PIF)

Nature of Concern

- 1. Recognition of Safety criticality of the task or associated steps
- 2. Custom and practice surrounding use of procedures
- 3. Procedures accessible, helpful, understood and accurate for task
- 4. Team dynamics, communications and coordination with others
- 5. Evidence of stress, workload, fatigue, time constraints
- 6. Factors such as morale, motivation, nervousness
- 7. Workplace ergonomics incl. signage, tools, layout, space, noise, light, heat, etc.
- 8. Human-Machine Interface (E.g.: Controls, Alarms, etc.)
- 9. Opportunity to learn or practice
- 10. Not Identified

# Work as imagined vs Work as done

*How do we reduce the gap?*



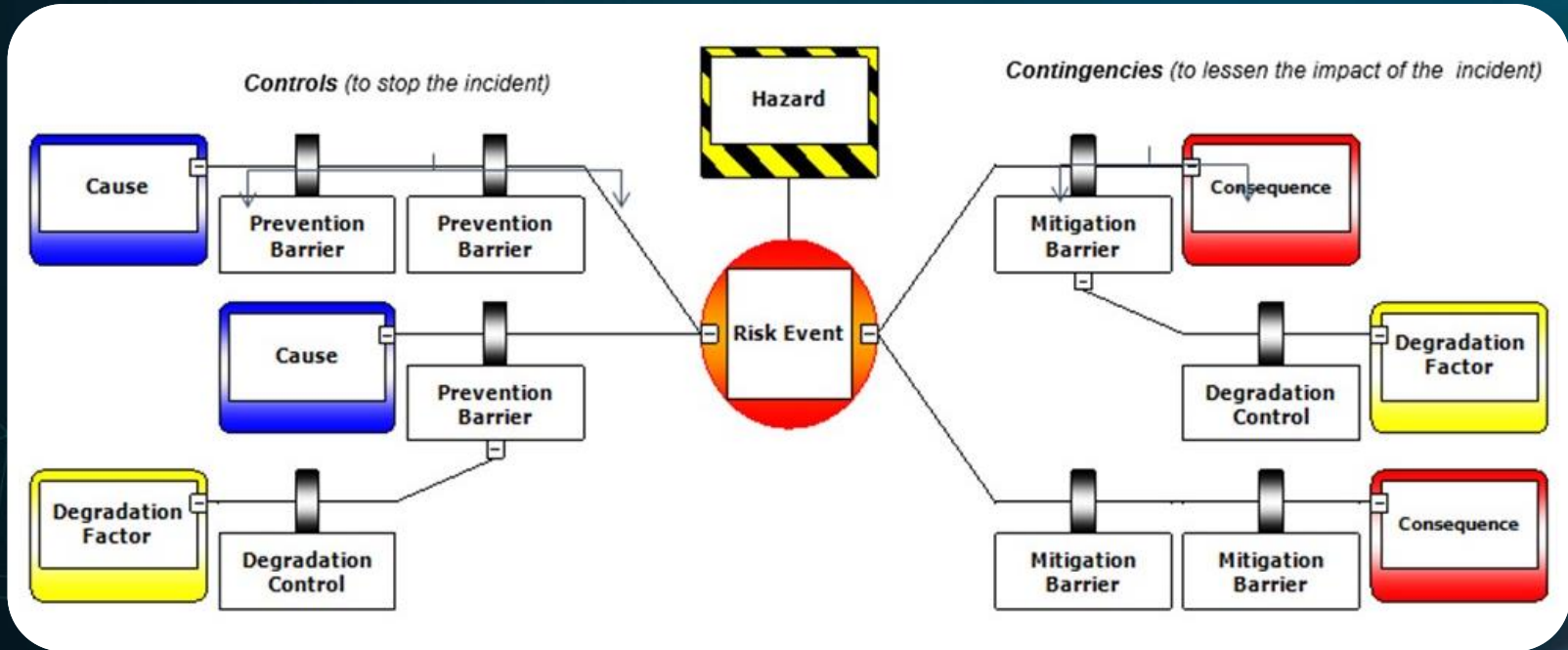


# The Bow Tie

A new RA  
model

What is the  
Bow Tie  
Model

# Risk Based Approach



# Bow-tie Risk Management Technique





# Risk Based Approach

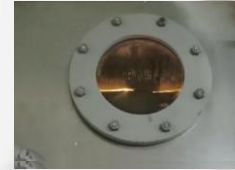


Direct OB V/V Shut & Locked



Sounding Pipe self closing

Oil in Observation Tank?



Funnel Flaps



Lashings, Gen cleanliness



OWS Seals



Gauges Okay?

Em. Bilge Suction



Emergency Exit



# The Sequence

Roadmap of  
an inspection

How it  
progresses



## Sequence of an Inspection

# “ The sequence

- **Living repositories**
  - What operators need to keep updated.
  - Certificate + Photo repository
- Operator requests for an inspection. PIQ filled.
- The inspector is selected by the relevant criteria.
- **Inspection compiler:** Various data collected to create the CVIQ: A complete risk based inspection question set built from Bow tie analysis.
- CVIQ sent to inspector's tablet.
- Inspector's homework: studies the CVIQ.

# Living repositories:

that managers/operators need to maintain



*HVPQ*

Updated



*MATRIX*

Updated



*Certificate Repository*

Updated



*Photo Repository*

36 Photos of the vessel; Updated every 6 months.

[Back to Terms & Terminology](#)



# Inspection process FAQs

## *Quick bits on SIRE 2.0*

**01**

### *Not answered Questions*

OCIMF expects the entire CVIQ to be answered in detail. Not answerable responses Must come with a reason.

**02**

### *Terminating Inspections*

Operators may terminate inspections midway because it is not going very well, to avoid a terrible report. But this will still reflect in the system.

**03**

### *Cancelling Inspections*

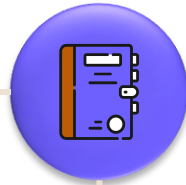
Operators may be keen to cancel the inspection if the inspector is infamous.

# Question types



## *Core*

High Risk.  
Appears at every  
Inspection



## *Rotational*

Lower Risk: Selected in  
rotation by the  
Inspection compiler. All  
questions covered  
under a certain time.



## *Conditional*

Specific to the ship  
based on her flag,  
history, etc.



## *Campaign*

Time limited questions,  
released by OCIMF based  
on Industry trends and  
needs



## *Rotational 1*

Frequency: 3<sup>rd</sup>/4<sup>th</sup> SIRE



## *Rotational 2*

Frequency 6<sup>th</sup>/8<sup>th</sup> SIRE

# The C-VIQ by the Question Compiler

A curated question set specific to:

- That Vessel
- At that time
- For that Inspection.
- ....and you do not know which ones are coming up!

Structured for 8 hours inspection.

Appx 100 questions.



[Back to Terms & Terminology](#)



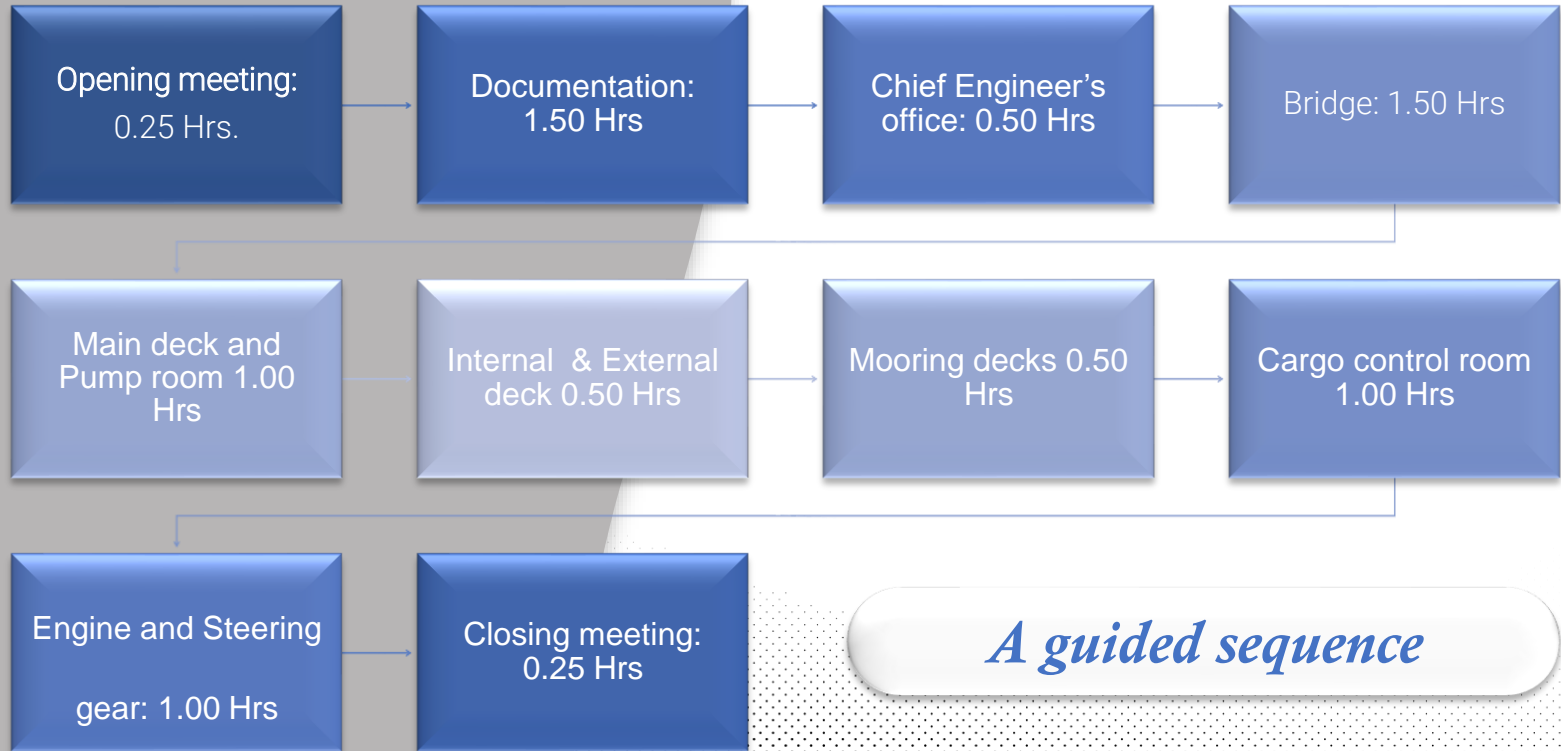
**Inspector on  
board**

**Roadmap of  
an inspection**

How it  
progresses



# 8 Hours distribution: The CVIQ Timeline





# Opening Meeting

*Almost the same, with some differences.*

What do you remember of the opening meeting?

Additional elements:

- The defect list
- Confirmation of Use of the tablet.

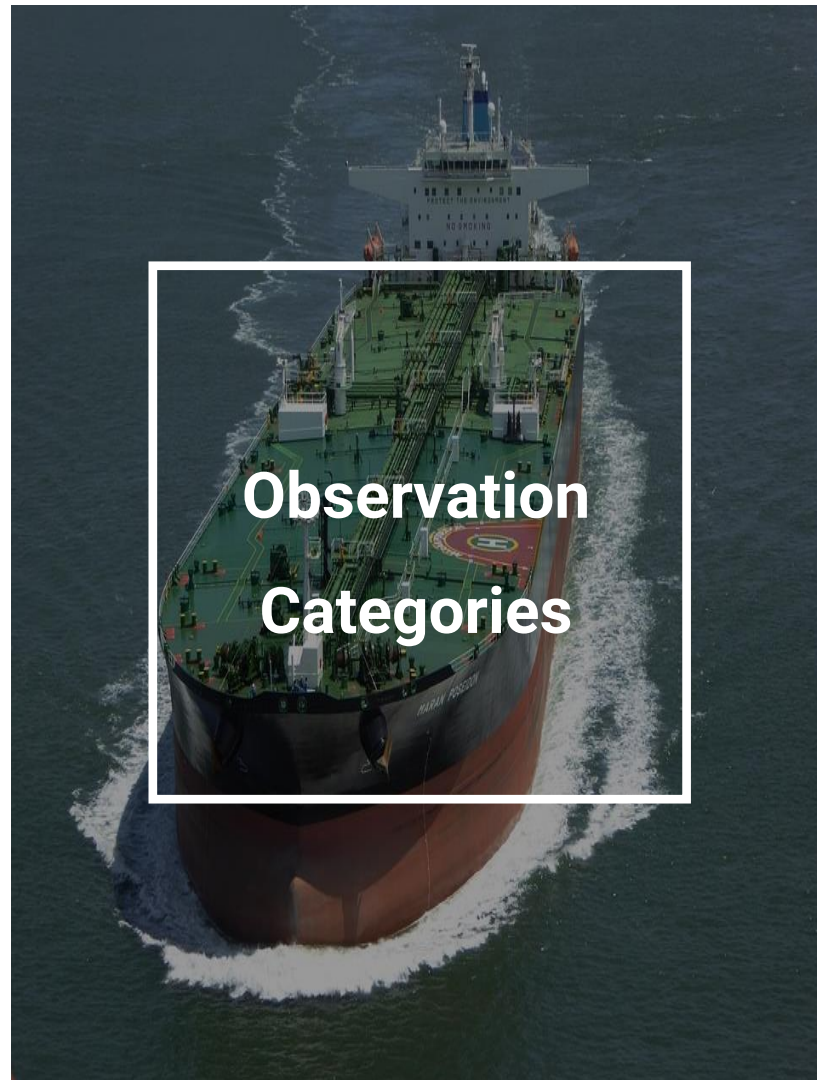


# “ Observation Categories



- **Hardware (Binary or graduated)**
  - The Fire line was excessively corroded...
- **Process (Binary or graduated)**
  - Company lacks procedures to report to class...
- **Human observations (Always Graduated)**
  - The motorman demonstrated clear understanding
  - Duty Engineer could not demonstrate...
- **Photo comparison (Binary or graduated)**
  - Photo of the forecastle not representative...

One process observation and one Hardware observation is possible for one question, but many PIF can be under Human Observation.



# Inspector editor: How the tablet works

The Inspection Editor



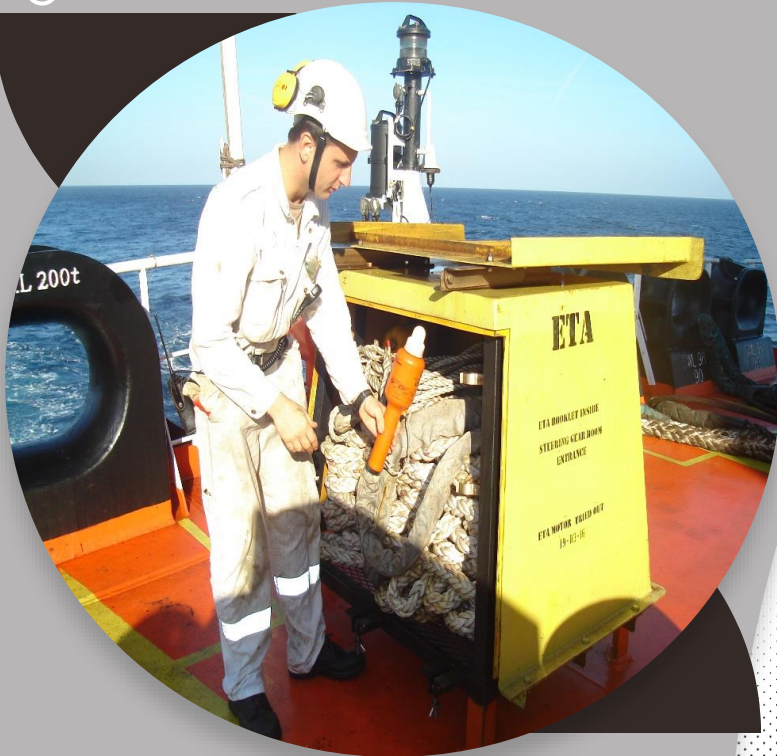
[Back to Terms & Terminology](#)



# Inspection Starts

## *Here is what happens*

- Sequence - expected to be same.
- Commence, suspend and resume inspection
- Less time on documentation (sampling only)
- Photos of observations being taken on tab.
- Positive observations also noted.
- Selected conditional questions being probed
- Voice memos can be taken & written later.
- Inspector's step count is recorded.



# During the Inspection

## *Here is what happens*

- 8 Hour inspections, fully tracked.
- GPS time/positions recorded throughout.
- Time when observations are sighted recorded.
- Inspectors **will refer to past observations** (Core Q).
- Human Centric approach taken.
- Management problems also taken into account.
- All CVIQ questions must be covered during the inspection.

## *Multiple negative observations*

### *Against top level questions*

**An oily water separator has been out of service for some time**

No entry in ORB

No record of open defect report

No procedure to report defect

Accompanying officer was not familiar with instructions of ORB

No procedure to inform Classification society





“

Catch all  
questions

## Negative observations to Non assigned questions (not covered in CVIQ)

- What if there is an apparent observation seen by the inspector not covered under the CVIQ?
- There is no escape. The Inspector must use the catch all questions to record these observations.

[Back to Terms & Terminology](#)



# The Closing Meeting

*What do you remember about the Closing meeting?*

## *During the Closing meeting*

- Master's comments are considered.
- Any observations closed out recorded.
- Observations deleted, corrected, updated.
- Report printed only using a Bluetooth printer.
- Inspector submits the report with addl comments.
- The vessel data then disappears from the tab.



# After the inspection

- Inspector uploads report within 72 hours.
- Operator response within 14 working days.
- Comments will follow a formulaic approach. Not open ended.
- API can be offered to member companies to receive the observations within their company software systems.



# Inspection process FAQs

## Quick bits on SIRE 2.0

the inert gas system, and had the inert gas system been used in accordance with guidance, with cargo tanks maintained in an inert condition at all times, was it necessary to be gas-free for entry?

### Short Question Text

Inert gas system usage on oil tankers.

### Vessel Types

Oil

### ROVIQ Sequence

Cargo Control Room, Main Deck

### Publications

IMO: ISM Code

IMO SOLAS

OCIMF/ICS: International Safety Guide for Oil Tankers and Terminals. Sixth Edition.

OCIMF: Inert Gas Systems. The use of inert gas for the carriage of flammable oil cargoes

01

## The ROVIQ

Reorganized VIQ. Arranges the questions on the tablet as per the inspector's movement. As per OCIMF's ROVIQ sequence.

the gangway, pause for meals, or other breaks, and complete at the gangway.

as external publications.

[Back to Terms & Terminology](#)

# Operators Response ( CLASS)

**C**

**Choose to Learn , Not Blame**

**L**

**Learn from those who do the work**

**A**

**Address PIFs**

**S**

**Systematically apply across  
fleet**

**S**

**Share feedback with crew**



What is  
latest?

Phase 3 in  
progress

Phase 3  
trials

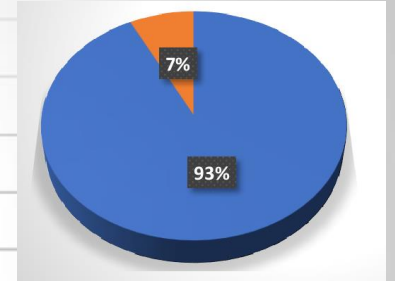
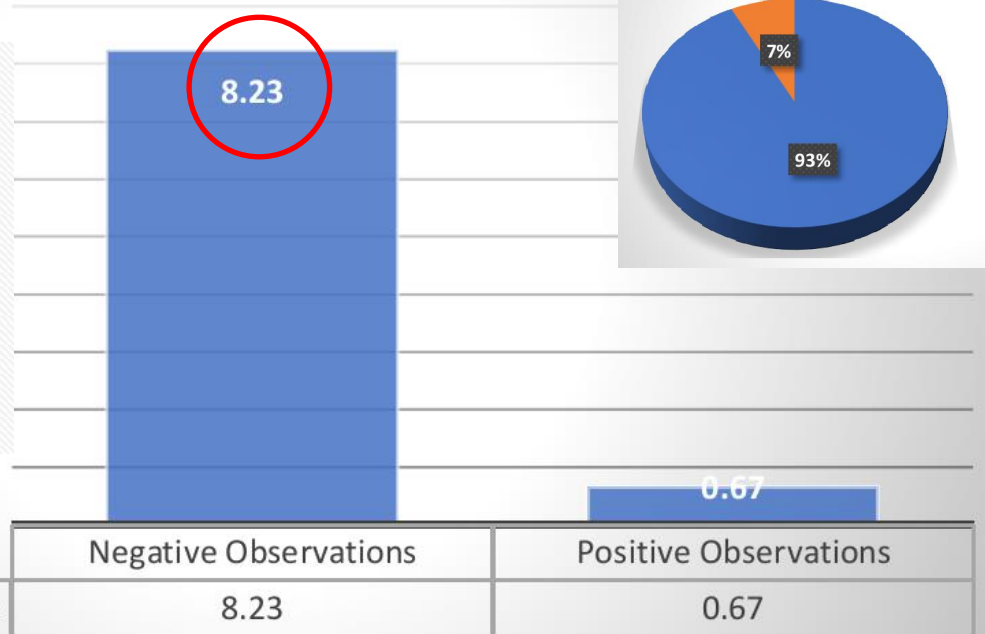
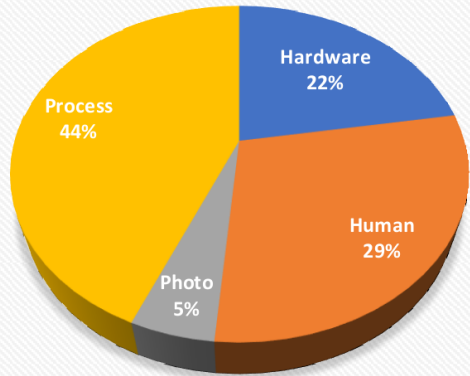


## “ Insights from Phase 3

- [Intertanko webinar: 24<sup>th</sup> Jan](#) [*>300 participants*]
- **Information from Intertanko**
  - Phase 3 Inspections started Jan 24
  - Seafarers' Practical Guide for SIRE 2.0
- **Stats released on VIQ [Q4/2023] 33 Inspections**
  - Safety Management: Most observations
  - Average Count: 2.08
- **Stats released on SIRE 2.0**
  - 25 SIRE 2.0 Inspections in March + 90 in May

# Insights from Phase 3 [Source: Intertanko]

## Observation per Inspection



■ Observation per Inspection



# Preparing for SIRE 2.0

A Smarter  
way

How can  
we  
Optimize?



# OCIMF Recommendation

- Key office staff and senior officers must be familiar with company's TMSA.
- Introduce Sire 2.0 to ship staff through seminars, training, workshops
- Familiarize office staff and vessels by OCIMF's latest updates. Eg Uploading Data.
- Provide intrinsically safe cameras/phones & Bluetooth printers to vessels



# Our Optimization Recommendations

*You cannot prepare for a SIRE 2.0 inspection!*

- We need smarter procedures now.
- But not to increase burden on the Master
- Empower the juniors to observe.
- Keep inspection ready at all times.
- 5 Strategies – action items.
- Let us start by Optimizing Checklists.





# 1. Zone wise division: 16 sections

*Deck Area*

*LSA FFA*

*Engine Documentation*

*Deck Documentation*

*Bridge*

*Aft Deck Area*

*Certification*

*Accommodation*

**2.5 years of research with S.M.E.s, Senior Inspectors, Auditors, Mariners, studying SIRE 2.0 vs major company checklists & over 100,000 inspection observations spanning the last 10 Years to identify knowledge gaps. Supported by a strong Global Advisory Board.**

*Engine Room compliance*

An aerial photograph of a large red oil tanker ship docked at a port. The ship's deck is visible, showing various structures, pipes, and a helipad with a green 'H' marking. A pier with several cranes is connected to the ship's side. The water is a deep blue-green color.

## 2. Time wise division

# One-time checks

*Lifeboat seatbelts in contrasting colors*



*SWL Bead welded*



# Check before arrival

*Extinguisher tag signed*



*Bottle pressures SCBA*



# Check on arrival

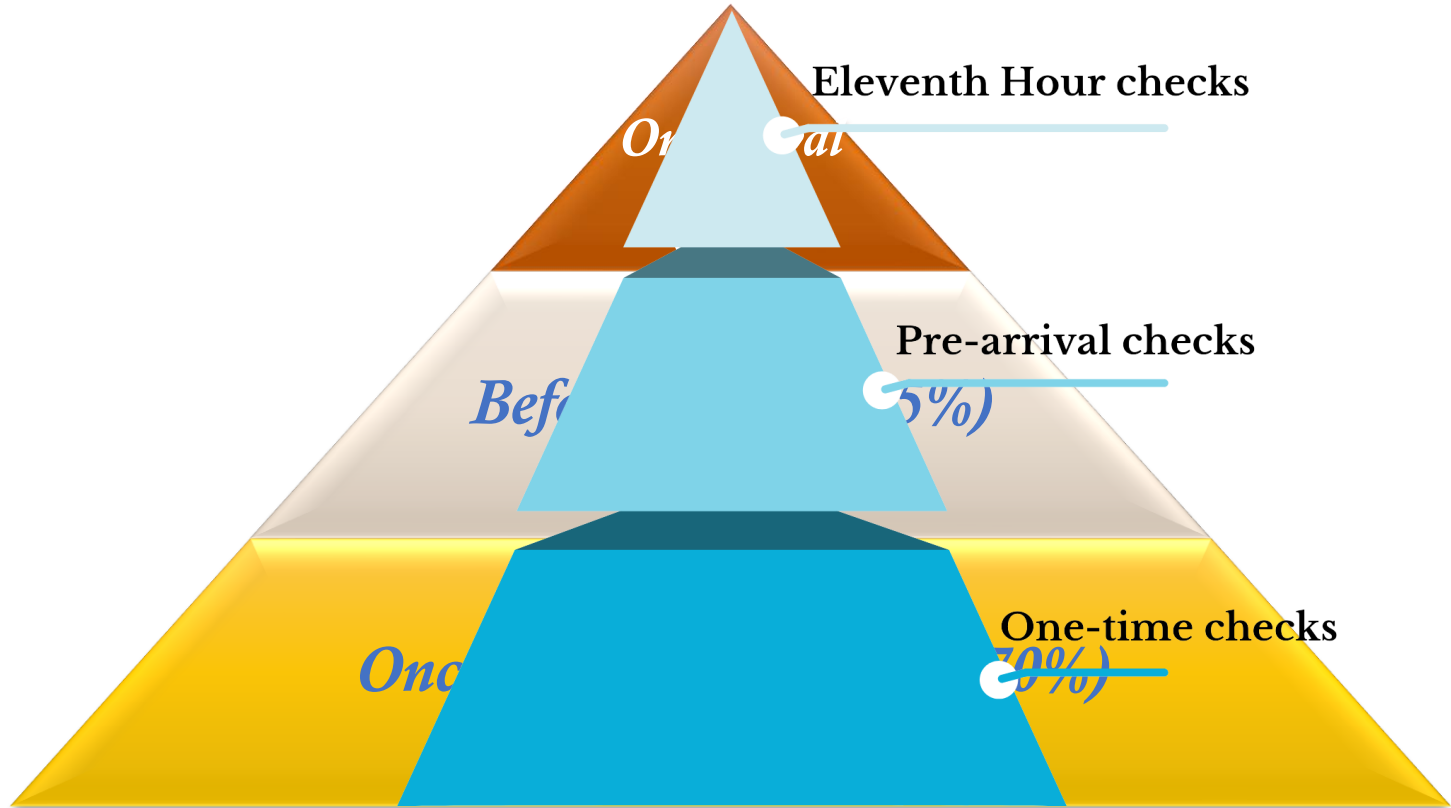
*Lifebuoy next to gangway*



*Garbage station clean*



# The Principle of Reducing Workload







### 3. Visualize Operations



Click here to  
play

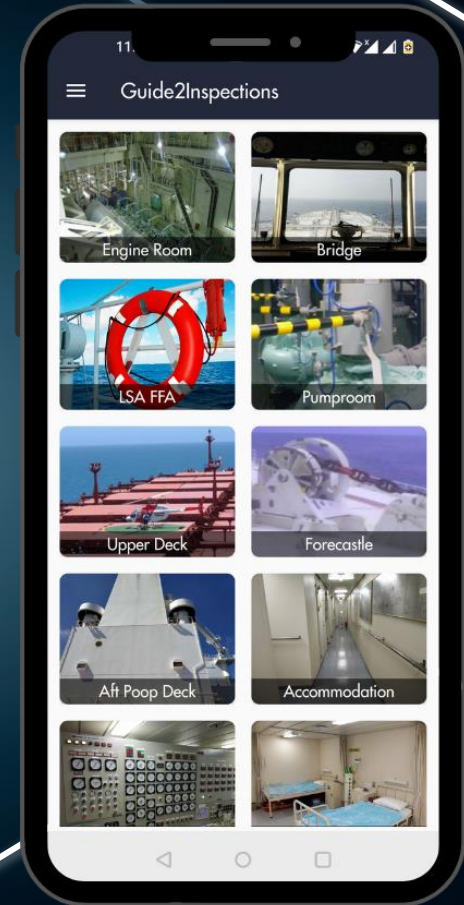
**OWS Alarm activated**

# 4. Use Smart tech

## Guide2Inspections™

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A super simple  
inspection app.





**A COMPLETE  
INSPECTION  
MANAGEMENT  
SYSTEM,  
DIRECT  
IMPACTFUL  
MENTORSHIP  
FOR FRONTLINE  
PERFORMERS.**

**Click here to  
play**

system for an organization equipped with





1 Yes. Please go ahead.

Did you ever make a Risk assessment? Do you know what it is for?

1 [Sounding Overconfident] I do not make Risk Assessments. I have no idea about it, Its not my job.

2 (Confident) I have not made it, because it is usually made by the Chief Officer or 2nd Engineer. But I have seen many,

3 [sounding nervous] Umm.....Nope. I am not sure Sir.

# 5. Don't shoot the messenger

- A thorough introspection means all the *skeletons in the closet* will come out.
- Find every deficiency, no matter how small.
- Individuals worried about their reputation when taking this long list up to their senior.
- Master to the company management or second officer reporting multiple deficiencies on the Bridge to the Master.
- Fear of blame or ridicule.



• **Any thoughts?**



# Global Advisory Board: A Few members

Capt. Phil Davies



*Ex-VP, Chevron Shipping; Ex-Director OCIMF, London in 2007, Ex-member/chair of the OCIMF General Purposes Committee, Executive committee of the Bahamas Shipowners Association.*

Sam Megwa



*Former OCIMF Programmes/SIRE 2.0 Director; Ex BP*

Mr. John Adams



*Senior Advisor and Ex-MD, V Group, Ex-Managing Director of Teekay Shipmanagement, Chairman of Bahamas Shipowners' Association and Vice Chair at ICS.*

Simon Robinson



*Director, Operability Ltd. Human Factor Advisor to OCIMF on SIRE 2.0 and to BP.*

Capt. Yves Vandeborn



*Loss Prevention Director, North-Standard P&I Club.*

Capt. Ashok Mahapatra



*CEO, UA Consulting; Ex-Director, Maritime Safety Division, International Maritime Organization*



# Why does it matter?

Help when  
you need it

Mentorship



Walk through  
the tasks

Mindset



Augmenting  
Checklists.

Simplifying



**Can we bring seafarers into the mindset of an inspector?**



*“Tell me and I forget, teach me and I may remember,  
involve me and I learn”*: Benjamin Franklin.

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