



Human Factors/Non-Technical Skills Training Course for OCIMF Accredited SIRE Inspectors

Module M1 – Introduction to Human Factors



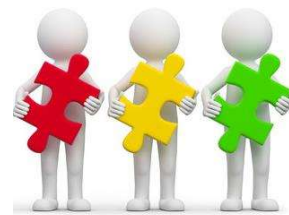
**Module M1.5 Workbook – SIRE 2.0 Questions
and Format**

Course developed by The Keil Centre Limited
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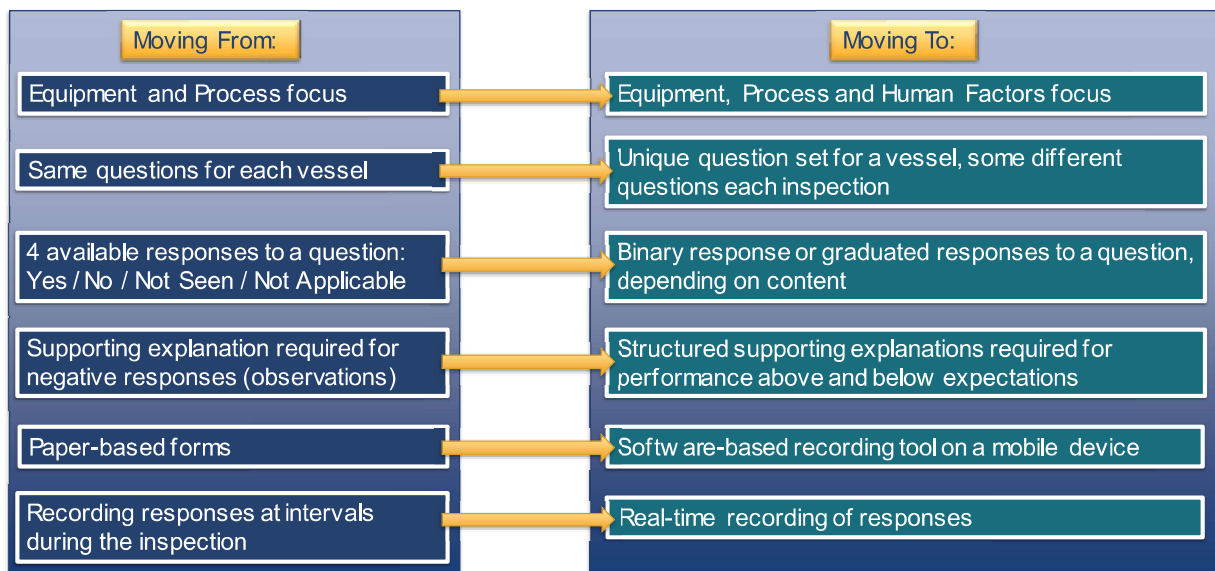
M1.5 Session overview

1. Introduction to some keychanges with SIRE 2.0
2. Recognising human factors components of SIRE 2.0 questions
3. Question types and assignment of human factors questions
4. Introduction to the human response tool
5. Human response tool – supporting your evaluation
6. Exercise: evaluated response and PIF recording exercise, based on the human response tool



Changes in SIRE 2.0

Some key changes with the SIRE 2.0 approach and vessel inspection questions



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Recognising Human Factors questions in SIRE 2.0

Deconstructing top level VIQ questions

- SIRE questions are designed so that a single top level question can be broken down into several sub-questions. Here's an example:

Question example: *Were the Master and officers familiar with the location, purpose and operation of the vessel's fire pumps, fire main, fire main isolating valves and fire hydrants and, was the system and its components in good working order and available for immediate use?*

Breaking this down into sub-questions gives the following:

A. Were the Masters and Officers familiar with the location, purpose and operation of the vessel's:

- I. fire pumps,
- II. fire main,
- III. fire main isolating valves and
- IV. fire hydrants

B. Was the (fire water) system and its components:

- I. in good working order
- II. available for immediate use

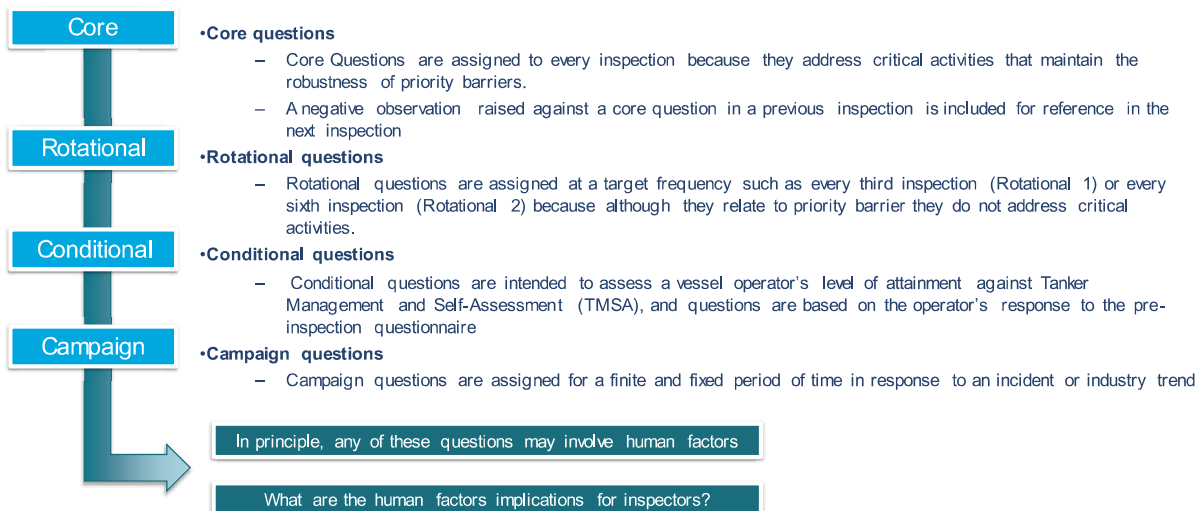
- We can see that the "A" questions are focused on crew members' knowledge and performance, but the B questions are focused on equipment condition and operability

Where a top level question or the supporting guidance refers to familiarity of vessel staff with a procedure, a written process or the operation / use of machinery or equipment, the Human Response Tool is assigned. These questions will require a graduated response to assess performance against expectations and the relevant performance influencing factors (PIFs).

Question types and allocation of questions

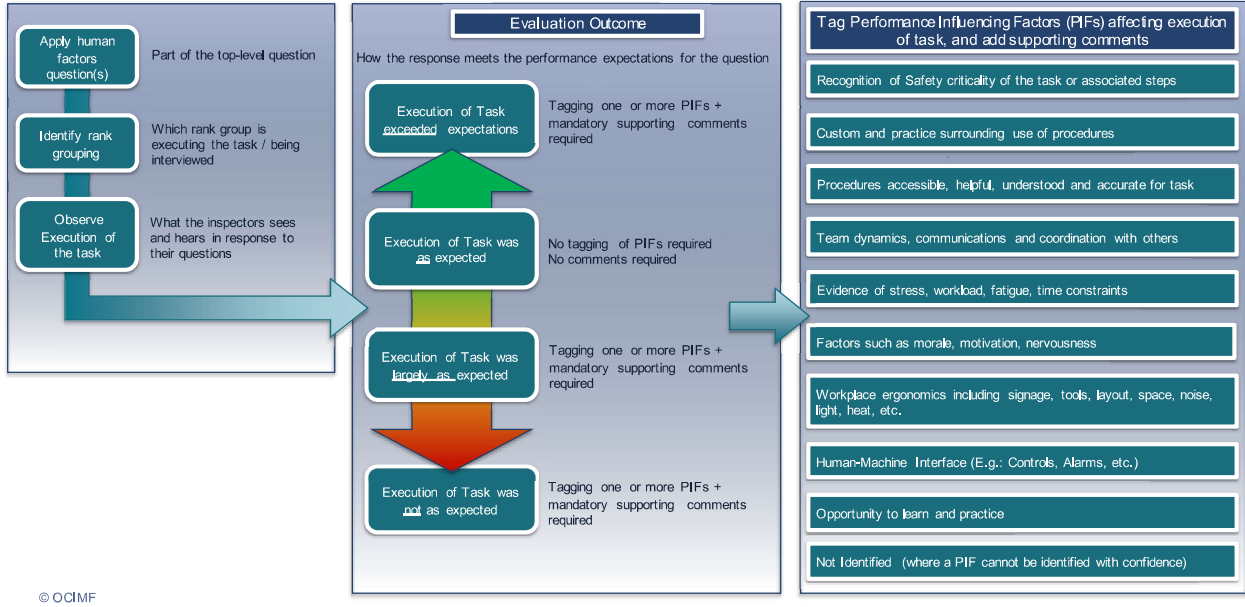
Understanding the difference and what this means for you as an inspector

SIRE 2.0 features 4 types of questions



Human Factors Response Tool

Flowchart showing required actions



Human factors response tool

Supporting your evaluation

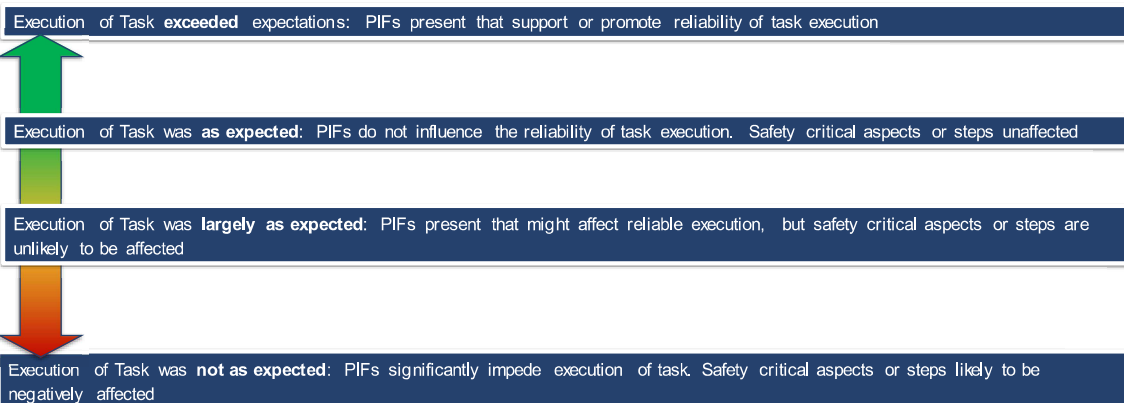
Expectations are constructed from several elements:

Supporting guidance (notes, actions, evidence, grounds for an observation)

Top-level question keywords

PIFs observed during the inspection

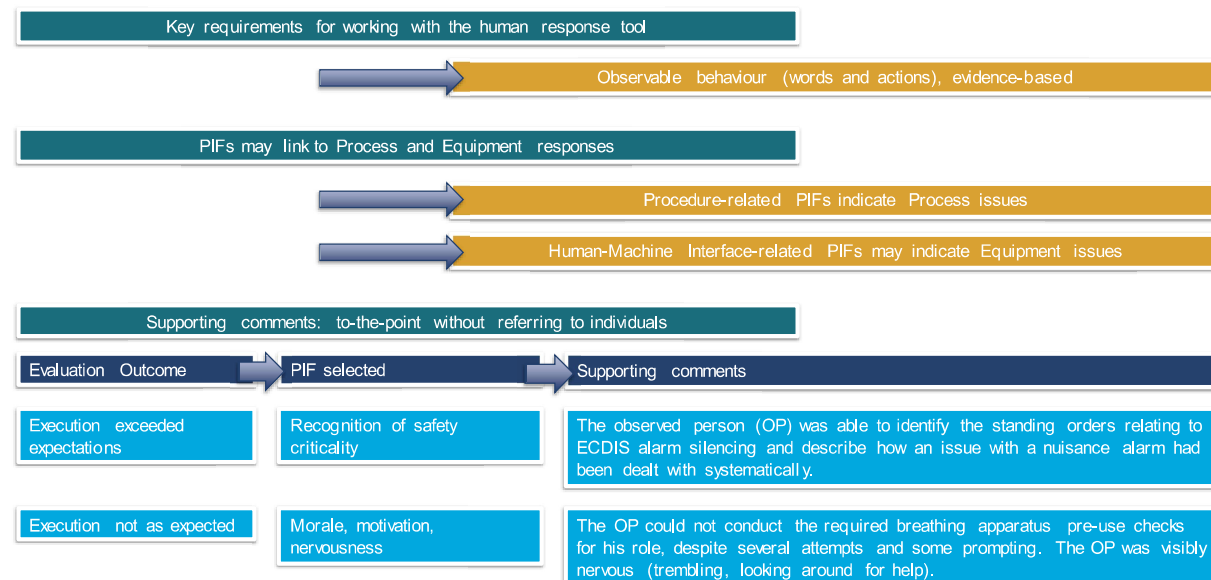
•Inspector experience with working with the questions is also important, but needs to be supported by an objective, evidence-based approach



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Human factors response tool

Supporting your evaluation



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Using the Human response tool

Worked example

Top-level question:

Were the Master and Navigating officers familiar with the company procedures for the set up and operation of the ECDIS units and were records available to show ECDIS has been operated in accordance with them?

What you observe and hear when working with this question

- The observed person is confidently and accurately able to explain the set up and use of the ECDIS system for navigation and is clearly engaged with the subject. The OP talks freely about the system, pointing out and demonstrating features, and shares the procedure which is kept nearby is up-to-date and shows clear signs of use.
- The OP is clear that verification of satellite positioning is important and describes some of the methods routinely used. It is quickly apparent that this is not something the OP has learned to recite from a script, and that it is a familiar activity that they can talk about from a position of experience.
- The OP locates the ECDIS records without difficulty and is happy to share them – even pointing out some they completed themselves with visible pride before handing them over. The standard of record keeping is impressive, in terms of completeness, legibility and level of detail.

Evaluation Outcome: Task execution exceeded expectations

•PIF tagging and supporting comments required

Performance Influencing Factors that promoted the strong observed performance and supporting comments

Recognition of Safety criticality of the task or associated steps

Procedures accessible, helpful, understood and accurate for task

Morale, motivation

Opportunity to learn and practice

- The OP demonstrated strong awareness of the criticality of verifying satellite positioning and critical steps in the process
- The OP demonstrated strong familiarity with the ECDIS setup and operating procedure. The procedure was accessible and valid for the task.
- The OP demonstrated strong morale and motivation for working with the ECDIS system
- The OP's familiarity with the system and hands-on knowledge strongly indicated that they have regular opportunities to practice using it

Using the Human response tool

Response tool completion exercise

Top-level question:

Are the officers aware of the operator's policy statements, guidance and procedures, including information on maximum loading rates and venting capabilities with regards to safe cargo handling?

•What you observe and hear when working with this question

- The observed person (senior officer in charge of cargo operations) did not know the correct purging criteria for the maximum hydrocarbon content to be attained prior to gas freeing with air blowers to ensure the cargo tank atmosphere did not enter the flammable range. The way the OP talked about the subject was wholly unconvincing, and despite considerable prompting by the inspector this did not improve. The OP became increasingly flustered as this progressed and showed signs of having a cold.
- The OP could not find the operator's instructions and procedure on cargo tank gas freeing requirements. They then spoke to a second person in their own language who looked confused and starting looking through several files, but seemingly at random without really knowing what they were looking for.
- After an uncomfortable few minutes with more tense own-language dialogue, a third crew member pointed out a scruffy-looking information sheet with maximum loading rates and venting capabilities that featured the former name of the vessel and was partially obscured by other documents on the wall. No-one was sure if the information was still valid.

Evaluation Outcome: Did task execution exceed, meet, largely meet or fall below expectations?

•Based on the evaluation outcome, are PIF tagging and supporting comments required?

What Performance Influencing Factors that (positively or negatively) affected task execution might be relevant here?

•Insert supporting comments for your identified PIFs, using the appropriate terms



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