The Known Knowns and Known Unknowns

Behavioural Markers in Leadership and Resource Management for Merchant Navy Officers

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The Rumsfeld reprise
In this presentation

- Standards of Training, Certification and Watchkeeping for Seafarers (STCW)
- Why carry out research on behavioural markers?
- Research design
- Emerging trends
- Utilisation of the research findings
International regulatory system

IMO

STCW

National Interpretation
## STCW revisions

<table>
<thead>
<tr>
<th>Knowledge, understanding and proficiency</th>
<th>Criteria for evaluating competence</th>
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<tbody>
<tr>
<td>Knowledge of bridge/engine room resource management principles including:</td>
<td>Resources are allocated and assigned as needed in correct priority to perform necessary tasks</td>
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<tr>
<td>1. allocation, assignment, and prioritization of resources,</td>
<td>Communication is clearly and unambiguously given and received</td>
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<tr>
<td>2. effective communication</td>
<td>Questionable decisions and/or actions result in appropriate challenge and response <strong>Effective leadership behaviours are identified</strong></td>
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<td>3. assertiveness and leadership</td>
<td>Team members share accurate understanding of current and predicted vessel state, navigation path and external environment / engine room and associated systems state and external environment.</td>
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Behavioural markers

- Behavioural markers are observable non-technical behaviours of teams or individuals, which contribute to superior or substandard performance within a work environment.

*Group Interaction in High Risk Environments (GIHRE), July 1991*

- For example, as contributing factors enhancing safety, or in accidents and incidents in the marine industry.
Why research this area?

- Importance of shipping industry
- Prior research on non-technical skills focused on aviation, which was then transferred to other industries
- Need for maritime research to represent its unique aspects
- STCW statements very broad
- Accident investigations increasingly highlight non-technical deficiencies
Research design

- Exploratory, hence flexible (qualitative) design
- Literature search
- Social constructivist - Semi-structured interviews based on STCW criteria
- Participants selected to represent cross section of industry
- Qualitative analysis (Atlas ti) - grounded theory approach
- Countering qualitative research issues
Trends emerging (1)

- Some behavioural elements clearer than others, e.g.
  - Process of communication
  - Verbalisation of situational awareness
  - Desired outcomes of workload management
- Less clear:
  - Effective leadership behaviour markers
  - Interpersonal skills sometimes undervalued next to task delivery and technical competence
  - Leadership and management sometimes seen as interchangeable
  - Planning to achieve optimum workload management
Trends emerging (2)

Appeared to be little understanding of the process of decision-making, despite the researchers offering a framework for analysis, i.e.:

- Effective situational awareness
- Option generation
- Carrying out of a risk assessment
- Monitoring of optimal decision
Trends emerging (3)

- Interviewees from larger organisations (e.g. oil majors, blue chip cruise companies) tend to be more aware of:
  - Training processes and procedures
  - Mountain of paperwork associated with international regulations and safety management systems, and seek for ways to make access to info more user friendly
Sample behavioural markers for communication

**Effective**
- Challenge is delivered with assertiveness
- Challenge is followed up and/or escalated if ambiguity or doubt remains
- Adequate explanation given in response to a challenge

**Ineffective**
- Challenge is disrespectful
- Challenge is delivered at an inappropriate time or missed
- Challenge fails to result in any review of current or proposed plan or action
Utilising Research Findings

- Identify consistent behavioural markers currently identified by interviewees
- Application to
  - Training curricula
  - Course design
  - Industry selection, training and promotion
  - Ongoing industry research
And back to Rumsfeld...

The Known Knowns

STCW has a wide range of interpretations though some consistency is emerging regarding:

- process of communication
- verbalisation of situational awareness
- desired outcomes of workload management

Different standards of effectiveness are applied in selection, training and promotion
Known unknowns

- Link between STCW broad statements and differing standards of effectiveness in the UK and internationally?
- Interpretation of STCW affected by age of respondents, time since last at sea, seniority, size of company? (this may become a “Known” by the end if the research)
- Criteria will vary outside those identified by Western culture?
- Will industry and regulatory bodies embrace the spirit of non-technical skills as opposed to the letter of the STCW law?
Into the Unknowns!

- Validate the behavioural markers highlighted by the interviewees and suggested by the researchers
- Explore whether these markers are equally valid beyond the UK
- Dialogue with the regulatory bodies to establish how resource management and leadership can be better incorporated into maritime education and training
Implementation considerations

- Cultural implications
- Face validity, consistency and congruence
- Needs to be supported by other organisational processes and procedures
- Behaviours cannot be seen in isolation - extenuating circumstances might need to be explored
- Training of behavioural marker assessors - who assess the assessors?
Thank you for your attention

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