Crew Competence Management Systems

Stefanos CHATZINIKOLAOU

Marine Training - Marine Research & Innovation, RINA Hellas

Contents

Competence is the integration of knowledge, understanding, skills and values

Introduction

Competence vs. Qualification

QUALIFICATION: License to work	COMPETENCE: Ability to work

Introduction

Competence vs. Qualification

QUALIFICATION:	COMPETENCE:
Acquired by training	Acquired by learning

Need for Competence Management

Competence is subject to continuous change

Personnel competence does not stay uniform in
time due to:

- Role and job changes

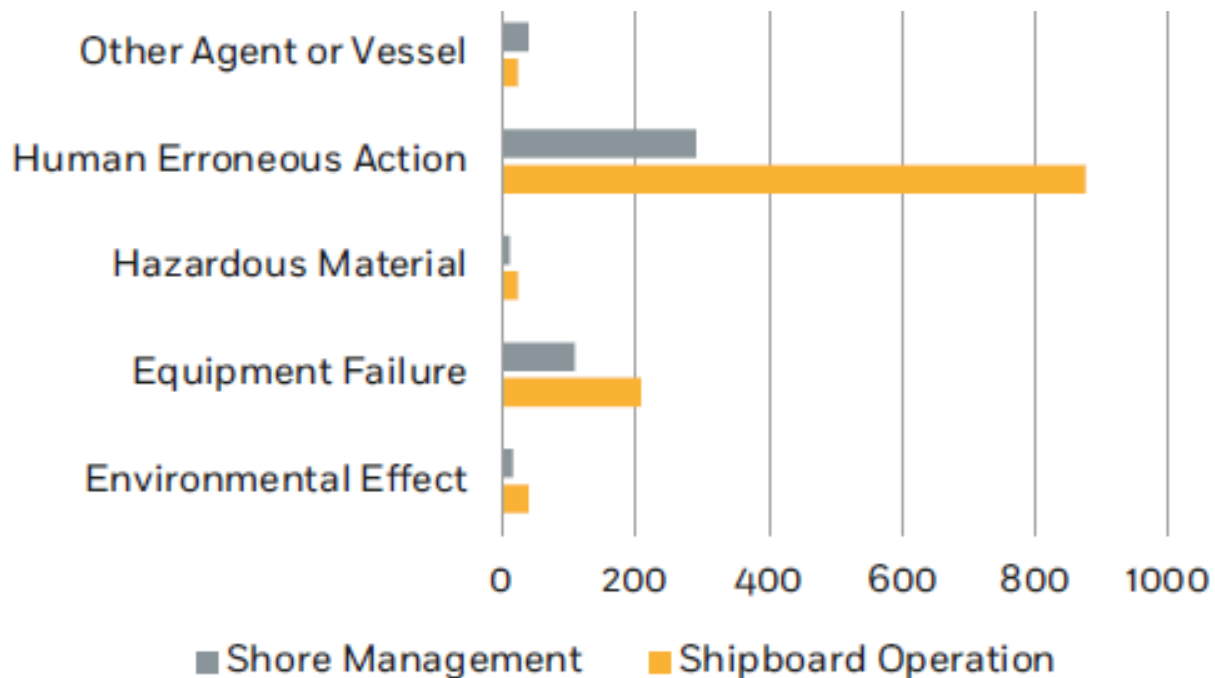- New technology

- New rules

- Industry standards

- New business – company objectives

Need for Competence Management

The human element

Events and contributing factors having led to casualties and incidents for the period 2011-2015.

EMSA

- **Shipboard operations represented the main contributing factor**

- **Human error the main contributor**

Need for Competence Management

The human element

Human error is not a random event, but humans can be pushed to faulty actions due to

1. Personal factors
2. Organizational factors
3. Task (job) factors)
4. Onboard working conditions factors

Focus on improving the human reliability

Take risks

Make sense of things

Communicate with other people

Work with other people

Make decisions

Make mistakes

Learn & develop

Get tired and stressed

People

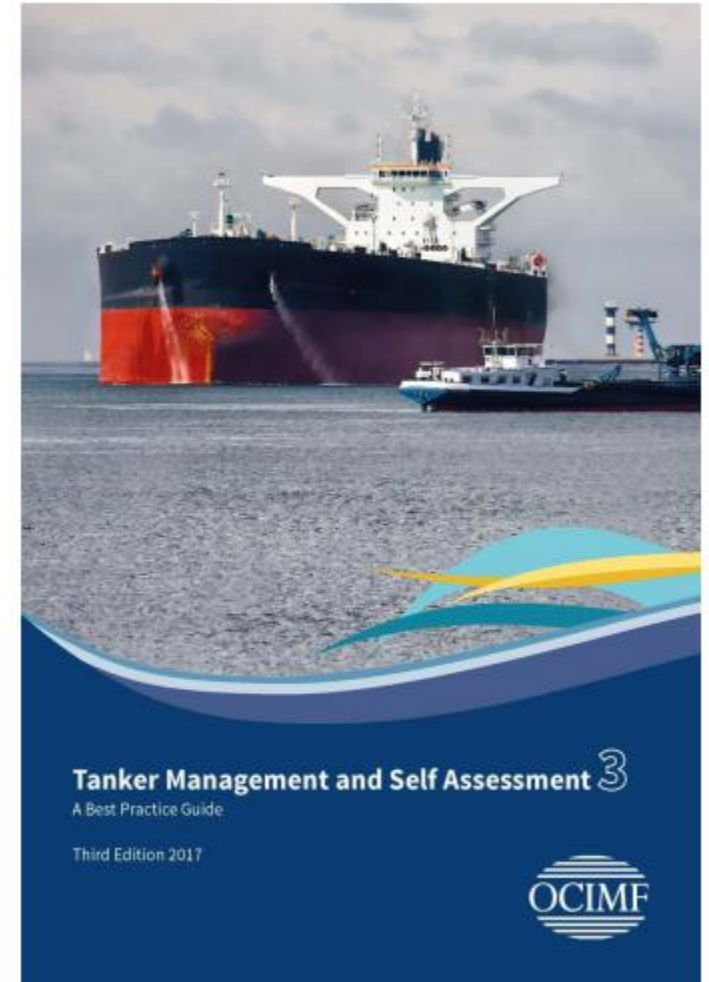# Need for Competence Management

Competence management as an industry standard

TMSA – Element 2 (Recruitment and Management of Shore Based Personnel)

Main objective: *competent ashore based staff*

KPIs

- 2.1: formal performance assessment system in place

- 3.1: refresher training, technical skills training

- 4.1: continual professional development is encouraged

- 4.3: the company promotes appropriate interpersonal skills training

Tanker Management and Self Assessment ③
A Best Practice Guide

Third Edition 2017

OCIMF

Need for Competence Management

Competence management as an industry standard

TMSA – Element 3 (Recruitment and Management of Vessel Personnel)

Main objective: *competent crew onboard*

KPIs

- 1.1: management procedures for selection, recruitment, promotion

- 1.3: procedures to identify mandatory and additional training

- 2.2: procedures for specific additional company training

- 2.4: procedures for additional training for individuals

- 2.6: Company monitors and records training results and effectiveness

- 3.3: training for vessel personnel exceeds ,minimum STCW req.

- 4.1: procedures to assess crew members for job competence are in place

- 4.2: documented procedure to ensure future training needs

- 4.3: Interpersonal skills are promoted

Tanker Management and Self Assessment 3
A Best Practice Guide

Third Edition 2017

OCIMF
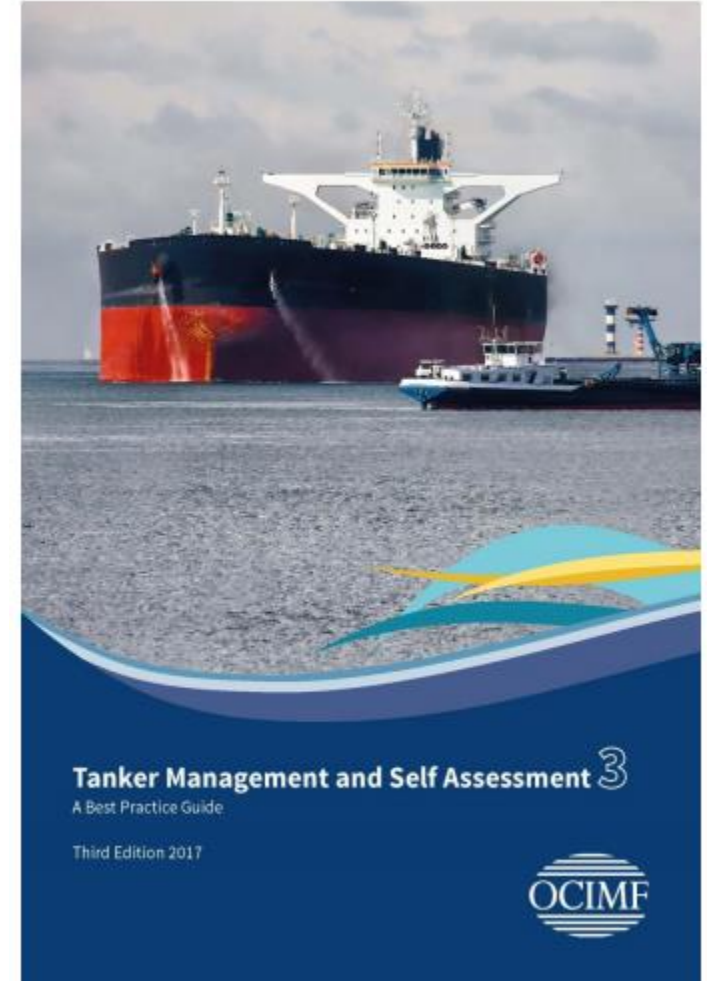
How to manage crew competence

A management system approach

A competence management system should be able to:

1. Identify;
2. Asses;
3. Monitor; and
4. Continuously improve

the competence of onboard personnel

The CMS should integrate relevant procedures of existing systems (SMS, Quality Management System, etc.)

Technical and Non-technical skills

Group of Competencies

Technical	Non Technical	Company
• STCW, ISM, SOLAS, MARPOL, ISPS, MLC, Flags, Class Rules, etc. • Industry guidelines or standards (e.g. TMSA) • Customers requests and feedback	• Personal & social qualities for certain forms of employment that do not depend on acquired knowledge • Identified according to the specific job profile	• Company policy, manuals, guidelines, etc. • Ship details • Users/manufacturers manuals • New equipment, software/hardware

Competencies

Non technical skills

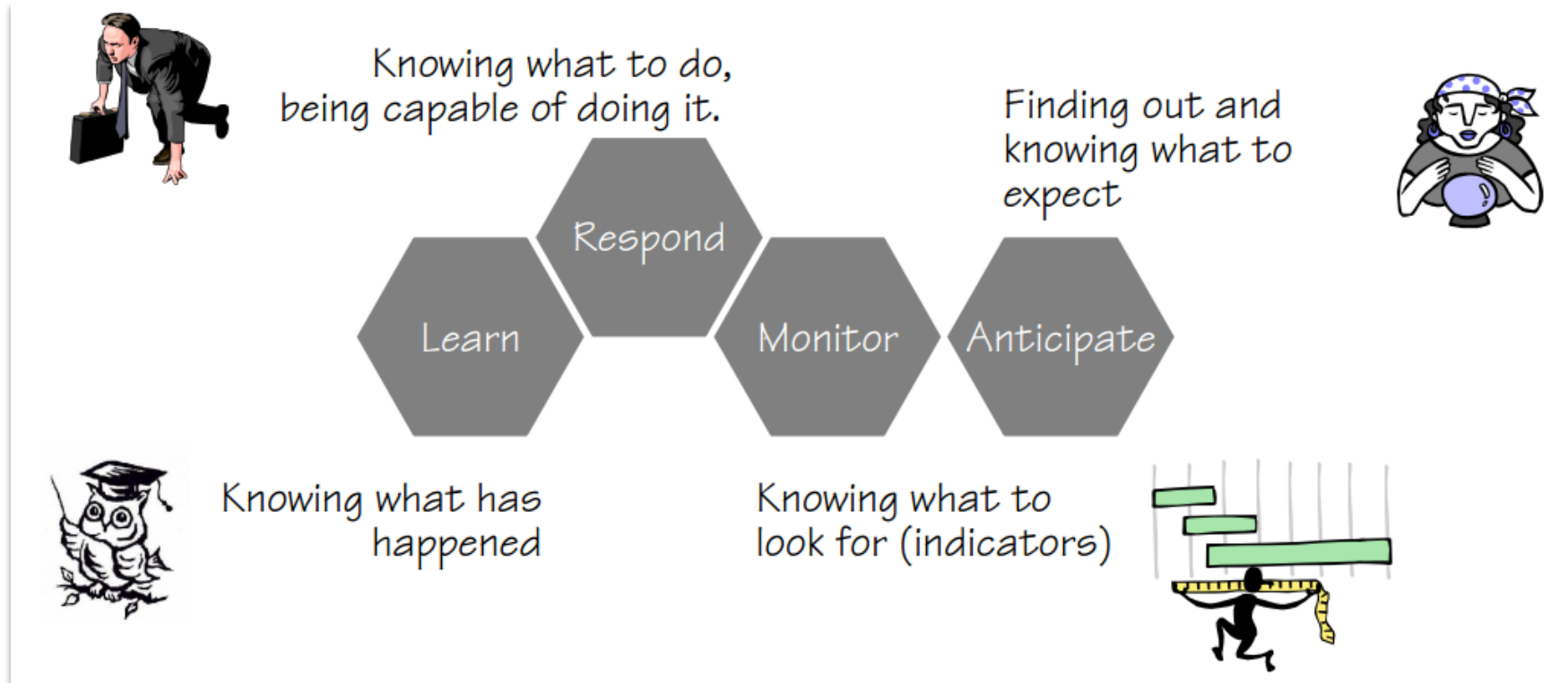| Non Technical Skills				
Social (Interpersonal)			**Cognitive (Personal)**	
Leadership	Communication	Teamwork	Resilience	Self Management
Influencing (developing) people / Vision focused / Assertiveness	Oral / Written / Listening	Adapt / Reliable / Active participation	Situation awareness / Respond to changes / Decision making	Work under pressure / Work habits / Learning/self development

Competencies

Abilities of Resilient Systems/Humans

Knowing what to do, being capable of doing it.

Finding out and knowing what to expect

Respond

Learn   Monitor   Anticipate

Knowing what has happened

Knowing what to look for (indicators)

Source: E. Hollangel, 2012

How to manage crew competence

Activities that can be included in a CMS

- Pro-boarding familiarization
- Pre-employment assessment
- Career development
- Training scheduling
- Personnel assessment (on technical and non-technical skills)
- Roster Management
- Competence analysis – benchmarking
- CMS Reporting, Documentation

Crew CMS - RINA Approach

Methodology

JOB COMPETENCE DEFINITION/MAPPING → ASSESSMENT PROGRAM DEVELOPMENT → PERSONNEL ASSESSMENT → TRAINING AND POST ASSESSMENT → ONBOARD VERIFICATION

Crew CMS - RINA Approach

Assessment

Competence is different from Performance

thus

Assessing crew competence is a different task from assessing job performance

Crew CMS - RINA Approach

Assessment

Currently

- ✓ Use (validated) available tools
- ✓ Reviewing new (market) assessment systems
- ✓ Gap reports of CMS with (behavioral) assessments
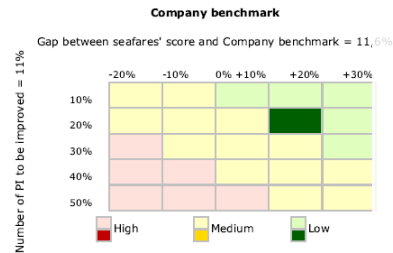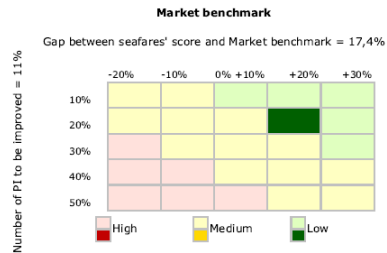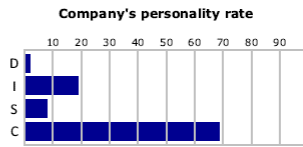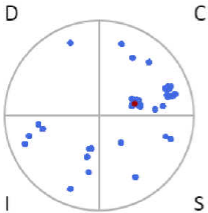
In progress

RINA Academy is working for the development of a new assessment system to be included in RINA CMS

- New taxonomy and links between skills
- Mathematical modeling
- Overall assessment (technical and non technical)
- Incorporate Risk into CMS

Company's personality rate

Market benchmark
Gap between seafares' score and Market benchmark = 17,4%

Company benchmark
Gap between seafares' score and Company benchmark = 11,6%

Crew CMS - RINA Approach

Training

RINA Academy support CMS

- Customized training focusing on weak areas (competence gaps)

- Technical and non-technical skills training

- E- learning

- Coaching

- Classroom courses

RINA Academy
Maritime & Certification
January 2018 Edition

Crew CMS - RINA Approach

RINA CMS Rules

- A documented procedure for the evaluation of the effectiveness of the actions carried out.
- ISO 10015 Quality management guidelines for training outcomes.

- Planned activities to be carried out in accordance with the plan of competence acquisition.
- Records of activities and results

Check — Input — Assessment and Gap — Planning — Act
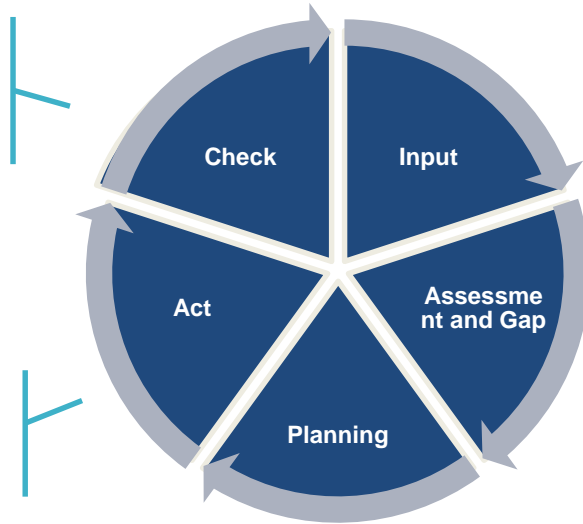
Policy & objectives set by the management level:
1. Company objectives
2. Applicable Rules, standards
3. Procedures of other management systems
4. Lessons learnt, incident analysis

Documented procedures, tools and criteria to assess competence:
1. Qualified int. assessors, as per IMO
2. Target vs. existing competence
3. Record keeping

Plan for filling competence gaps (actions, roles, timeline):
1. Criticality of gap
2. Operational goals
3. Training requirements
4. Refresh training

web–portal for CMS

- Web set-up of RINA CMS

- Planning – history of assessment and training

- Online assessment

- Certificates, CMS documents, reports

- Data analysis, KPIs, benchmarking

Final Remarks

- Competent personnel is a necessity due to
  - multiple tasks with high risk levels that are demanded on-board ships
  - fast technology progress
  - introduction of new legislation
  - anticipated high standards that lead to pressing inspection and verification procedures.

- The gaps between qualification and competence should be managed with a systematic approach (a competence management system, CMS)

- Assessment of competence is a crucial step in a CMS

- Note that: Assessing competence differs from assessing job performance

- RINA activities: CMS methodology, web tools, Rules, Assessment techniques, training

Thank You

Stefanos CHATZINIKOLAOU

Manager, Marine Training - Marine Research & Innovation
RINA Hellas Ltd

stefanos.chatzinikolaou@rina.org

Phone: +30 210 4292144
Fax: +30 210 4292950
Mobile: +30 693 2719772
http://www.rinagroup.org

Contact points for CMS

GREECE

RINA ACADEMY

Alessandro MURA

Sector Manager, Crew Training

alessandro.mura@rina.org

Via Ravasco, 10 - 16128 GENOVA - ITALIA
Phone: +39 010 5767827
Mobile: +39 335 6324670
http://www.rina-academy.org

Stefanos CHATZINIKOLAOU

Manager, Marine Training - Marine Research & Innovation

stefanos.chatzinikolaou@rina.org

Phone: +30 210 4292144
Fax: +30 210 4292950
Mobile: +30 693 2719772
http://www.rinagroup.org