

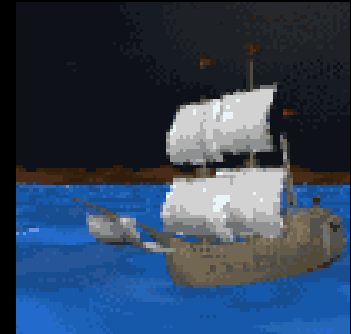


Maritime Transport Brokerage Event 2011 London

MariFuture Initiatives Transforming the Maritime Education and Training- TUDEV Institute of Maritime Studies



Prof. Dr. Reza Ziarati



Identifying a methodology for effective improvements

- Torkel (2004) reports that 25% of the world fleet was responsible for more than 50% of shipping accidents and that the top 25% of the safest ships were involved in just 7% of all accidents.
- NTNU (2005) reports that by improving the quality of the world fleet to the same level as those in the safest 25% category, there could be 72% reduction in accidents.
- Intertanko (SAS, 2004) one or more engine stop per week

Human Resource Planning Issues

- 5000 Shortages in TR and 100000 worldwide by 2020
- The BIMCO/ISF 2005 - there could be a lack of 27,000 senior officers by 2015 worldwide". Officer shortage 10,000 in 2005.
- Drewry Shipping Consultants (2008) - Officer shortage may be 34,000, a figure that could reach 83,900 2012.
- SAS – INTERTANCO: One engine stop every week
- Economic Crisis! - New BIMCO/ISF figures 2010/11

The reason for review of STCW Convention and its codes

STCW 78/95, almost 15 years old

Many practices in ship management,

operations , and

technology have changed and these changes are now playing a major role in ship operations.

STCW Changes: Ziarati & Yongxing 2009

- Retain STCW1995
- Clean up up the inconsistencies, misleading interpretations and outdated provisions
- Make communication more effective
- Flexibility for compliance and take account of innovation in technology
- Address special circumstances of short sea shipping and offshore industry
- Address the maritime security
- Amend the articles of the Convention – Still Minimum.

www.marifuture.org – Development Paper for Oct 10.

Amendments to the International Convention on STCW (78) 1995

- New requirements
- Demands on, administrations, ship-owners and maritime institutions
- Shift from a knowledge-based to competency-based
- Need for updating and recertification
- **Simulators - training or assessing competence** (compliance with provisions in Section A-I/12 of the STCW Code)

Other Changes

- **Security training and related issues**
- **Simplifying navigation calculations**
- **Adding training requirements for VTS**
- **Introducing electrical-electronic officers**
- **Making BRM and ERM training compulsory**
- **ILO Maritime Labour Convention 2006**

Revising the Chapter V - This Chapter of the Convention deals with such Regulation as

- Requirements for the training and qualifications of masters, officers and ratings on oil, and chemical tankers
- Same as above but for liquefied gas tankers
- Competence requirements for Dynamic Positioning
- The training requirements for:
 - ice-covered waters
 - anchor-handling operations
 - offshore supply vessels

Updating model courses

Including:

- Basic training in marine environment awareness
- Liquefied Petroleum Gas (LPG) Tanker Cargo and Ballast Handling Simulator
- GlobalMET and UniMET

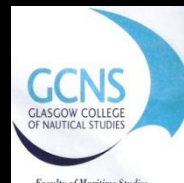
Conclusions 1

- STCW 2010 – significant
- Many deficiencies remains
- **MariFuture:** Four major areas
 1. Stricter and tougher standards for Maritime English (MarTEL, 2007-09 and MarTEL Plus, 2009-11)
 2. Reducing automation failures (SURPASS, 2009-11)
 3. Prevent emergencies (M'AIDER, 2009-11).
 4. Integrating Maritime Education, Research and Innovation



EDUCATION AND CULTURE

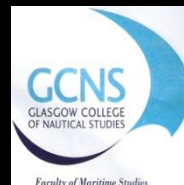
- EU Leonardo SOS (Safety on Sea) Project, TR/05/B/P/PP/178 001, 2005
- EU Leonardo TRAIN 4Cs Mobility Project, TR/06/A/F/PL1-132, 2006
- EU Leonardo E-GMDSS Project, SI/06/B/F/PP-176006, 2006
- EU Leonardo MarTEL Project, UK/07/LLP-LdV/TOI-049, 2007
- EU Leonardo TRAIN 4Cs – II Project, 2008-1-TR-LEO01-00681, 2008
- EU Leonardo E-GMDSSVET Project, 142173-LLP-1-2008-1-SI
- EU Leonardo EBDIG Project, UK/09/LLP-LdV/TOI-163_262, 2009
- EU Leonardo MarEng Plus Project (Maritime English Programmes)
- EU Leonardo M'Aider Project, 2009-1-NL1-LEO05-01624, 2009
- EU Leonardo SURPASS Project_ 2009-1-TR1-LEO05-08652, 2009
- EU FP7/FoF Extreme Factories – 2011-2014
- TSB: Three ongoing projects on data integration and demand forecasting
- DMU: Application of Artificial Intelligence
- EU/TSB/Industry/Bath/TUDEV: Clean Diesel





EDUCATION AND CULTURE

- EU Leonardo SOS (Safety on Sea) Project – Now UniMET
- EU Leonardo MarTEL Project now MarTEL Plus
- New Project CAPTAINS
- New Project Sail Ahead
- All projects have led to a major European Network called:
-MariFuture (www.marifuture.org)



South Tyneside College



Why?

- Responding to identified deficiencies
- Reducing officer shortages
- Offering the Cadets Maximum Opportunity
- Staff Development
- Supporting the maritime industry
- Creating jobs
- Creating wealth
- Achieving Gold standards – STCW minimum standards
- Learning from others
- Attracting young people to our profession



EDUCATION AND CULTURE

MarTEL (Maritime Tests of English Language)

And now MarTEL Plus

-To overcome the problem of not having international or European standards for Maritime English through transfer of innovation from existing English language standards and maritime English model courses

-Maritime language competency assessment for the language certification

Partners : Factories of the Future (C4FF); Satakunta University (SUAS), Tromsø University College (TUC); Maritime University of Szczecin (MUS), Spinaker (SPIN) ; MarEdu



EDUCATION AND CULTURE

E – G M D S S and E-GMDSS VET

The projects focus on the provision of vocational education and continuing vocational training for Short Range Certificate (SRC) E-GMDSS VET concerns LRC.

The projects outcomes are two GMDSS e-learning systems accessible on the Internet web site www.egmdss.com in all EU languages

Partners : Spinaker Si ; CFF (Centre for Factories of the Future); Facultad de Ciencias Nauticas; Cetemar; C.S.S.; SE.MA2; Maritime Institute Willem Barentsz; Maritime University of Szczecin;TUDEV



EDUCATION AND CULTURE

Ongoing Projects : 2008 - 2011

TRAIN4Cs – Mobility

TRAIN 4Cs is a series of mobility programmes for cadets from the SOS project to have the opportunity to acquire sea training qualifications which will be recognised throughout the EU and worldwide



EDUCATION AND CULTURE

SURPASS

(Short Course Programmes in Automated Systems in Shipping)

The main aim of this project is to fill the gap created as the result of emergence and application of the automated systems by developing a training course on automated systems on board vessels, and these systems' weaknesses and limitations

Partners: Satakunta University (SUAS), FI; Glasgwo College of Nautical Studies (GCNS), Scotland; Tromsø University College (TUC), NO; Maritime University of Szczecin (MUS), PL; Spinkar (SPIN), SL; Centre for Factories of the Future (C4FF) UK; Plymouth University (PLY), UK



EDUCATION AND CULTURE

M'AIDER (MAYDAY)

- To identify emergency situations and create knowledge based scenarios for simulators and PC based
- To develop scenarios on real accidents for self assessment.
- To streamline actions needed when emergencies occur.
- To develop e-learning/assessment to integrate the scenarios and exercises created based on above aims.

Partners: Satakunta University (SUAS), FI; Glasgow College of Nautical Studies (GCNS), Scotland; Tromsø University College (TUC), NO; Maritime University of Szczecin (MUS), PL ; Spinker (SPIN), SL ; Centre for Factories of the Future (C4FF) UK



EDUCATION AND CULTURE

EBDIG

(European Boat Design Innovation Group)

Aims to provide marine industry professionals with the skills and infrastructure to understand and exploit the opportunities presented by design, ergonomics, sustainable materials and ICT.

The intention is to use on-line courses and an interactive e-learning environment to transfer existing innovation in the automotive industry to small craft design and production so that the European marine work force develop world class skills and competencies to ensure the continued growth and competitiveness of the European Marine industry.

Partners: Coventry University – ; KKG ; Ladida International; TU Delft ; University of Genoa ; Ricardo ; TUDEV - The Institute of Maritime studies



Piri Reis University - Budget 75 Million EUR

**TURKISH Maritime Centre of Excellence – Budget 43
Million EUR**

Partners: Chamber of Shipping and many major shipping companies



EDUCATION AND CULTURE

PICK-UP **Professional, Industrial, Competence and sKills –** **UPdating**

This is a project to update the knowledge, skills and understanding of those working in the water transportation sector. The proposal responds to the needs of the sector for training of employees and employers, paying particular attention to the training and re-training needs of smaller companies and self-employed.



EDUCATION AND CULTURE

MariFuture

**This is an European initiative
aiming to integrate Maritime
Education, Research and
Innovation**

See www.MariFuture.org

ACADEMIC RESEARCH – With De Montfort

Activity Based Costing for Ship Builders

To investigate the needs for costing systems for SMEs in the maritime sectors.

To design, develop and test a generic costing system which is capable of associating costs and margins with products, processes and customers.

MPhils/PhDs in collaborations with De Montfort University, UK and Centre for Factories of the Future, UK

ACADEMIC RESEARCH – with De Montfort

Sustaining competitive advantage through co-operative decision making

- **To study competitive advantage and how it can be sustained through co-operative decision making processes**
- **To develop a checklist as a basis for constructing a model for family businesses in shipping industry, particular with a view to help them to remain competitive for generations to come.**
- **MPhils/PhDs in collaborations with De Montfort University, UK and Centre for Factories of the Future, UK**

ACADEMIC RESEARCH – TUDEV and De Montfort

Predicting Demand for ships in the future using AI

- **MPhils/PhDs - TUDEV in collaborations with De Montfort University, UK and Centre for Factories of the Future, UK**

ACADEMIC RESEARCH – With Coventry University

Clean Diesel II

This project is based on the successful EU funded Clean Diesel project. The project comprises an Engine management system capable of real-time simulation of a diesel propulsion unit in parallel with actual Engine Finger-print software (Heat release and Rate of Injection Programs)

TUDEV, C4FF and Coventry University

ACADEMIC RESEARCH

Application of Neural and Expert Systems in Capacity Requirement and Ship Building

- To use novel tools to predict capacity requirement and apply neural and expert systems to build ships at a minimized cost**
- An activity based costing system to be adapted to ship construction and maintenance process and the dismantling arrangements.**

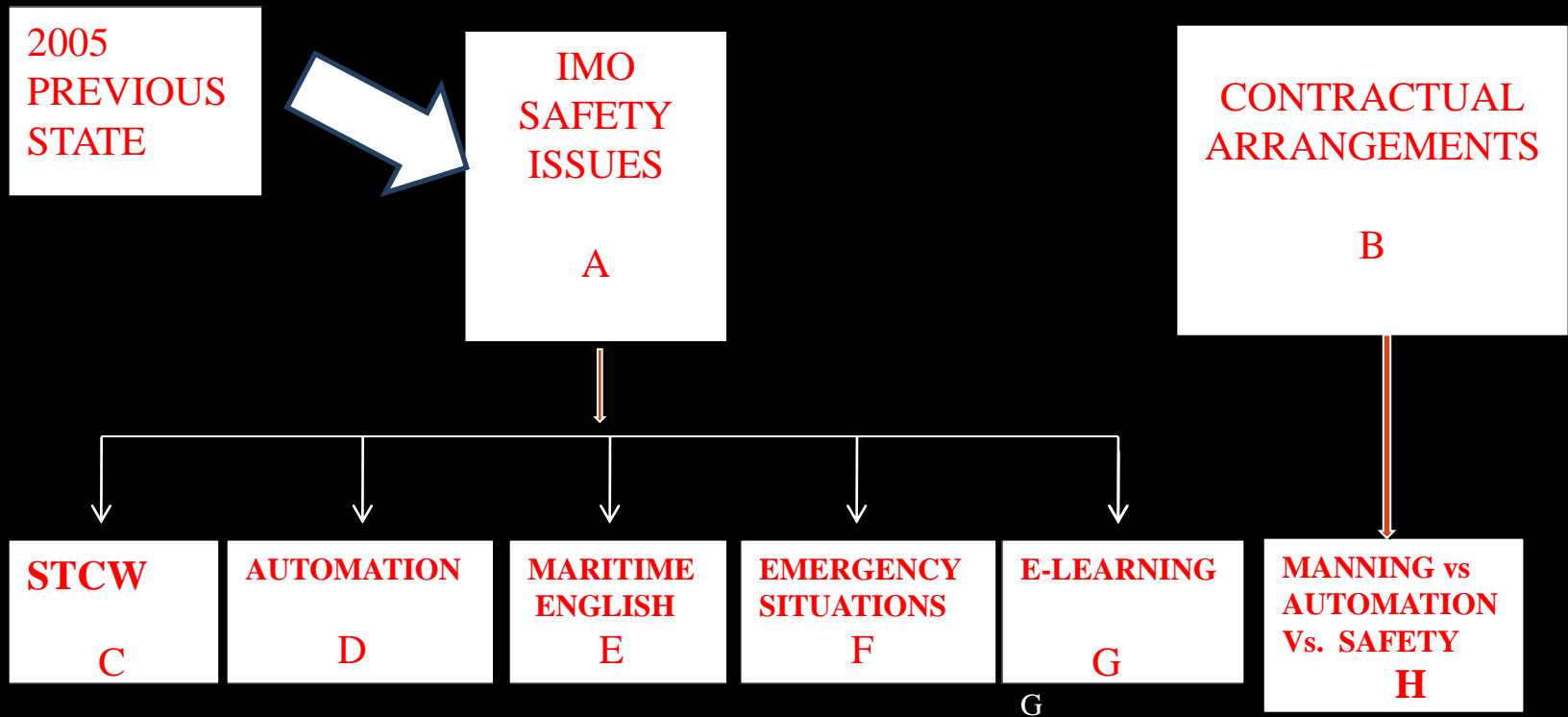
ACADEMIC RESEARCH

Improving estimating and forecasting model

A joint Project with De Montfort

The project is intends to assist those business organizations who make frequent use of quantitative and/or qualitative models for making a variety of business decisions. It will achieve this aim by automating the data identification, collection and analysis tasks involved in the modelling process hence considerably reducing the high levels of cost, expertise and time resources required.

MariFuture Map – Previous State



MariFuture Map - Current State

2009/10



Current

MAR

ENG I

H

MARTEL

I

SOS

J

TRAIN

4CI

K

E-GMDSSI

(SRC)

L

MAR

ENG II

M

SURPASS

N

MAIDER

O

TRAIN

4CgII

P

E-GMDSSI

(LRC)

R

SAIL

AHEAD

(2011-13)

CAPTAIN

S

(2010-12)

MARTEL

PLUS

(zd0-12) J

UniMET

(2011-13)

MariFuture Map - Future State

MARIFUTURE

1

2

3

4

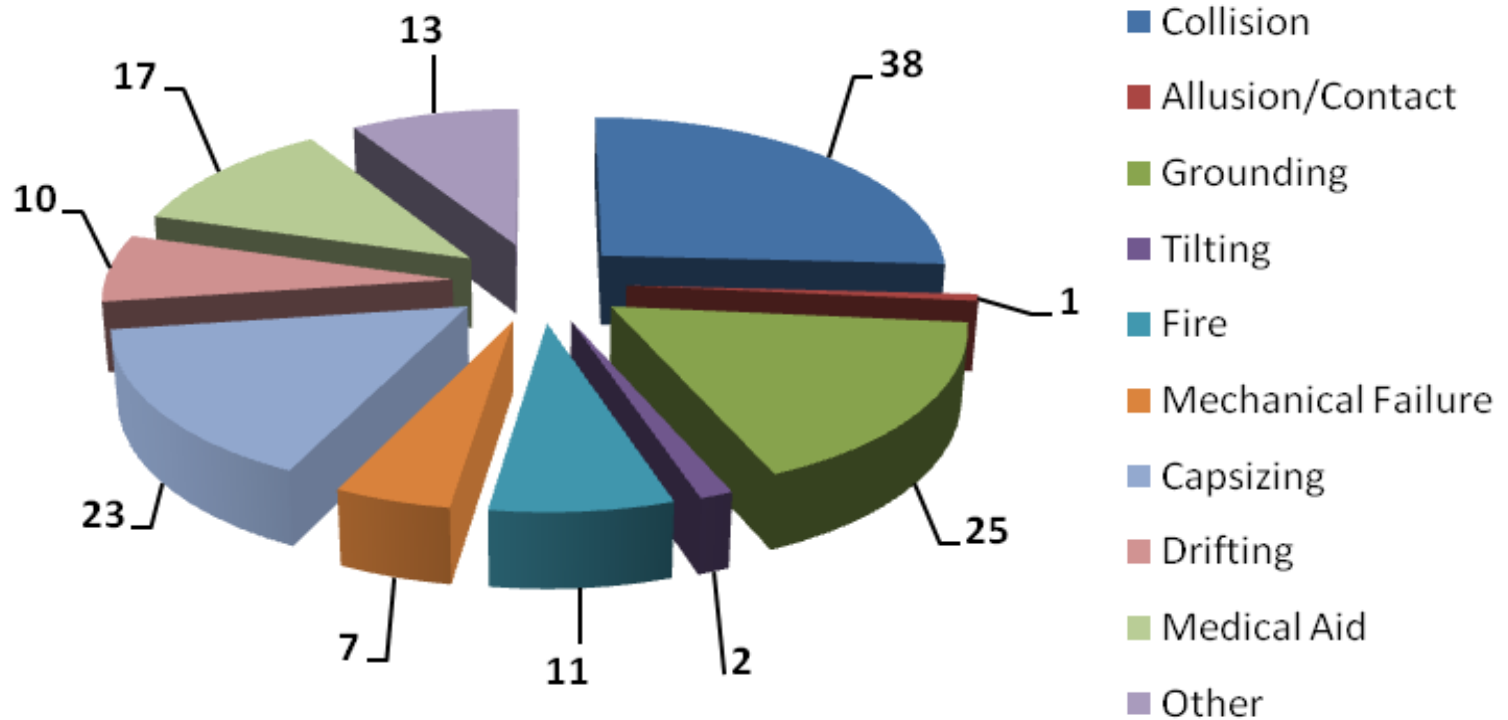
ATTRACTING
YOUNG
PEOPLE INTO
SEAFARING

STCW
REVISION
IMPLEMENTATION
(2010-2012)

PERSONNEL
SHORTAGES

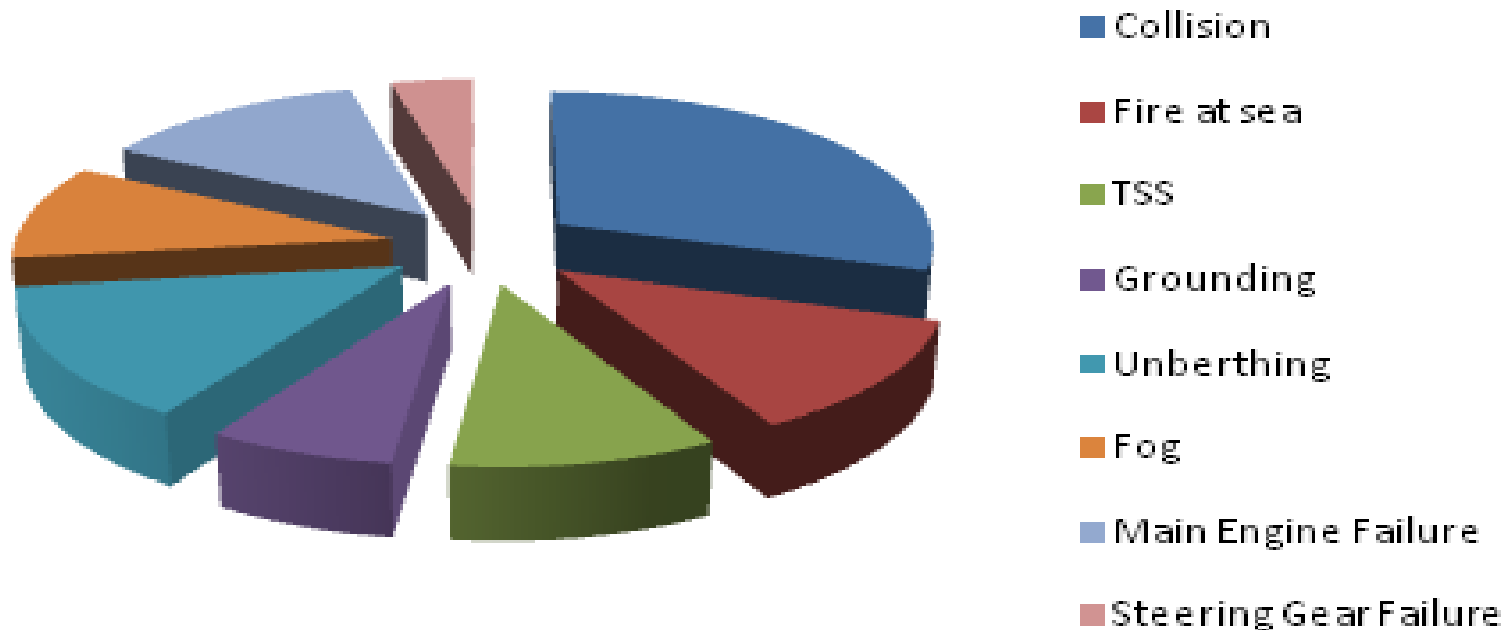
Turkish Maritime
Centre of
Excellence

TR or UK?



TR or UK?

Maritime Accident Types





www.marifuture.org

THANK YOU FOR YOUR ATTENTION



Professor Reza Ziarati

