



Article

## NEW RESEARCH BASED E-LEARNING MODEL COURSE TO AVOID COLLISIONS AT SEA

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### Introduction

Since ancient times, in the wake of accidents and disasters at sea, huge changes in the individual and collective knowledge and behaviour of those engaged in navigation at sea occurred. In modern times, to improve safety at sea and to avoid collisions, several attempts have been made to improve the collision regulation.

A study of the reports on collision regulations reveals that “85% of all accidents are either directly initiated by human error or are associated with human error by means of inappropriate human response (Ziarati, 2006). This is in line with the findings of a recent paper (IMO, 2005) that 80% of accidents at sea are caused by human error. The paper by Ziarati (2006) notes that mistakes are usually made not because of deficient or inadequate regulations, but because the regulations and standards that do exist are often ignored. The IMO MSC (Ziarati, 2006) clearly indicates that the causes of many of the accidents at sea are due to deficiencies in maritime education and training of sea farers, or disregard for current standards and regulations. Ziarati (2007) the outcome of this latter study has recently been validated by the research findings of the ACTs (Avoiding Collisions at Sea) project. Several of Ziarati’s recommendations have been led to the identification of skill gaps ([www.maidr.pro](http://www.maidr.pro) and [www.maredu.co.uk](http://www.maredu.co.uk))”

### Recent Developments

The Maritime Safety committee of IMO (International Maritime Organisation) in its proposal (93/20/3) mentioned the development of a new model course related to the 1972 convention on the international regulations for preventing collision at sea (COLREG). In November 1981, IMO’s Assembly adopted 55 amendments to the 72 COLREGS with a set of thirty eight internationally agreed rules which became effective on June 1, 1983. The IMO also adopted 9 more amendments which became effective on November 19, 1989. “The model course programme commenced in 1985 and has involved in the production of a substantial number of model courses over the years, covering various subjects under the STCW Convention and the STCW Code, as amended. The main purpose of IMO model courses is to assist maritime academies and their teaching staff with organizing and introducing new training courses on safety of shipping operations or with enhancing, updating or supplementing their existing training materials so that the quality and effectiveness of the existing training courses may be improved.”

IMO’s development of a new model course, however, does not address any dedicated model training course that specifically addresses the COLREGs and the navigational watch-keeping standards that are required to ensure a proper appreciation of the different rules, and competency as to when and how to apply them in the interests of effective collision avoidance. Yet, adequate and appropriate application of the COLREG across the board is a core element of safe navigation.

According to IMLA, the “IMO, has provided a clear text for COLREGs and relevant organizations have developed interpretations thereon. There are very few discussions among maritime education and training institutions for the clarifications of COLREG clauses as well. As for the existing "COLREG-specific" maritime accidents, IMLA is of

the view that most of them can be concluded as being "the unsatisfactory results of maritime training" or "seafarers not being able to use COLREG properly at sea", instead of a "lack of uniform interpretations on COLREG", the former due to, for example, insufficient simulator training or seafarers' insufficient understanding of COLREGs, and the latter being determined by the prevailing circumstances, for instance, when a ship is in an emergency situation."

The Maritime Safety Committee's 93rd session (MSC/93/20/7) document provides comments on document MSC 93/20/3 proposing the development of a new model course related to the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (COLREG). The International Maritime Lecturers association (IMLA) believes in "the effectiveness of the COLREG's requirements that have already been included in the existing model courses, which have been revised and updated consequent to the 2010 Manila amendments. However, the intent of IMO model courses, the potential reasons related to the "COLREG-specific" maritime accidents, as well as the revision of guidance for model course development, updating and validation processes which is on the agenda of the HTW Sub-Committee and in progress, should also be considered"(IMLA Newsletter Volume 1 June 2014).

## ACTs Research Findings

A recent study of the existing 1972 collision rules by C4FF in collaboration with five other European countries, in their research project ACTS (Avoiding Collisions at Sea) revealed some very interesting outcomes and predicts the impact of such collision rules. ACT project's research finding suggests inconsistencies in the level of navigators understanding and interpretation and application of COLREGS rules. There is always a question mark how Maritime education institutions teach COLREGs competency to their students. Furthermore, the research indicates the level of competency varies significantly across institutions in a given country and this is even more inconsistent across EU. Despite making several changes in COLREGs, over the last half-century, and despite improvements in navigational aids such as ARPA, ECDIS, AIS, Traffic Separation Scheme (TSSs) and automation, and attempts to raise the standards of training through various STCW conventions, collisions still occur. The aim of the ACTs research project is to develop an e-learning model course based on real life scenarios extracted from accident case studies to develop and improve the safety at sea towards "zero collision"

The research findings of the ACTs project also revealed two generic problems with COLREGS. Firstly, there is no common interpretation of COLREG rules that are widely used, where, navigators could have the same understanding. Secondly, it is difficult to apply COLREGS rules in different locations and situations at sea. To remedy the first problem, there needs to be a common interpretation which is used by countries taking into account where and how those rules should be applied. It is expected that the ACTs on-line model course on COLREG will be recognised by International Maritime Organisation (IMO), (IMLA) and will also be endorsed by major licensing authorities such as Maritime and Coastguard Agency (MCA).

The objectives of the ACTs project are therefore:

- To identify, adapt and/or develop appropriate methods and methodologies for the development of training course content, delivery and assessment.
- To identify the interactive pedagogical methods
- To apply multimedia learning techniques in the development and delivery of training courses

The research findings supported the development and testing of the training module. It also involved in decisions regarding the selection methods of developing and delivering the training tasks, as well as methods of assessment. Particular attention is given to the existing national standards and regulations regarding the training to make sure that they complement the existing structure.

In the development of a methodological and pedagogical framework for the whole project, both qualitative and quantitative methods are used and the strength(s) of each method is considered and its limitation(s) evaluated.

## Conclusion

The ACT project on COLREGs will help to overcome the knowledge deficiency in application of the Collision regulations. The real life scenarios extracted from accident case studies to develop the e-learning model course on COLREG will improve learning and the practical ability to use COLREG effectively by all mariners. It is expected that the on-line ACTs model course on COLREG will be recognised by IMO, IMLA and major awarding bodies such as Edexcel/BTEC, accredited by a major chartered professional institution such as IMarEST (and/or Nautical Institute) and will be endorsed by major licensing authorities such as MCA and also will gain worldwide recognition for the intended E-COLREGS course.

## References

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