

Simulation and assessment of a North Sea rescue vessel

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Abstract

BP Exploration has developed a new concept for providing safety cover for personnel working on offshore installations. The concept involves the use of a new design of rigid inflatable boat, which can be deployed in emergencies to recover casualties from the water, sustain their life and then return them to a surgical facility for primary care. This paper describes the innovative trials run by QinetiQ in order to simulate elements of the vessel and to build a more complete picture of its usability and operational capability from a human factors point of view. The trials encompass the retrieval of casualties from a wave tank onto an afterdeck mock-up, the flow of casualties within a mock-up of the vessel and treatment under conditions of motion in a large displacement motion simulator. The paper describes how the data gathered from these discrete trials were then integrated to allow an appreciation of likely casualty handling capability of the vessel.

Introduction

A new concept for providing safety cover for personnel working on offshore installations is currently under investigation by BP Exploration. This new concept involves the use of a new design of Rigid Inflatable Boat (RIB), 18.6 m in length (the largest RIB yet designed) with the capacity for six crew and room for up to 21 survivors, including six stretcher cases. It is proposed that this vessel will provide treatment facilities to enable a team of paramedics to administer medical assistance to casualties following an offshore incident. The vessel should provide the means to stabilise casualties until they can be returned to a surgical facility for primary care. Clearly, such a concept requires a robust approach to de-risk the design, and that the concept must be demonstrated to be a true place of safety in the harshest of environments. Consequently, a thorough investigation was required into the design, functionality and suitability of the afterdeck arrangement for casualty retrieval from the water, the assessment of casualty handling (triage), and the medical treatment area and accommodation facilities.

Initial studies were undertaken and reported by Bridger *et al.*, 2002 to the internal design of the treatment facility. However, the central issue was that the customer had a largely unproven concept for which no objective performance data existed. Furthermore, the customer would not wish to go to the expense of manufacturing a vessel that did not meet the specified performance capability. Therefore, QinetiQ

In D. de Waard, K.A. Brookhuis, R. van Egmond, and Th. Boersema (Eds.) (2005), *Human Factors in Design, Safety, and Management* (pp. 405 - 417). Maastricht, the Netherlands: Shaker Publishing.