

## "SAFETY AND EFFECTIVENESS OF OPERATIONS AT SEA"

F.J.M. Davidson<sup>1</sup>, A. Allen<sup>2</sup>, G. Brassington<sup>3</sup>, O. Breivik<sup>4</sup>, P. Daniel<sup>5</sup>, B. Stone<sup>6</sup>

<sup>1</sup>*DFO, St. John's, Canada*

<sup>2</sup>*USCG, Groton, USA*

<sup>3</sup>*BOM, Melbourne, Australia*

<sup>4</sup>*Met No, Bergen, Norway*

<sup>5</sup>*Meteo France, Toulouse, France*

<sup>6</sup>*CCG, St. John's, Canada*

### Abstract

GODAE's purpose is to provide an international coordinated development push for operational oceanographic systems. These systems include the blending of ocean observations (in-situ and remotely sensed) with numerical models describing ocean physics. In the development stages of ocean forecasting systems, validation is accomplished by inter-comparing among different ocean forecast systems and among observational data in a prescribed manner called metrics. As the ocean forecast systems progress, ocean forecast system performance is valued more heavily on the contribution made to improving day to day safety, effectiveness and efficiency of sea going operations.

Herein we look at the applicability of the various ocean forecast systems in existence or in development to the improvement of safety and effectiveness of operations at sea. The paper reviews the requirements that ocean forecast systems need to possess for various safety applications at sea including: search and rescue drift calculations, oil drift calculation for containment-clean up, ice berg drift calculations, ice cover prediction and safety of offshore operations. Additionally a review of the decision tools used to make safety related decisions at sea is done along with their various oceanographic environmental input requirements. The need and mechanism for timely delivery of oceanographic information to various decision makers related to at sea safety and efficiency will be explored.

The objective of this paper is to identify the current readiness of operational ocean forecast systems for increased use by various safety and efficiency conscious ocean end users such as search and rescue agencies, the offshore oil industry, fishing industry, shipping industry and ecosystem management agencies. We focus on the applicability for both regional (shelf systems) and global forecast systems with a brief mention of near shore applications. Finally the paper will identify target issues for future development to increase applicability and use of ocean forecast systems to further increase safety and efficiency of decisions at sea.