Introduction of the projects running at the Marine Meteorology Center in CWB

Yueh-Jiuan Glory Hsu
Marine Meteorology Center
Central Weather Bureau

Abstract

Infrastructures consist of an ocean observation network and a suite of marine forecast computer models are established in MMC/CWB. Accordingly MMC/CWB has successfully developed several information products serving a number of major user groups including marine transportation, fishery, recreation and tourist industry, and coastal hazard mitigation including search and rescue on occasion. Our future emphasis will be on product quality, reliability, and information presentation and delivery, streamlining our products and facilitating our services.

Due to restricted resources most marine related organizations in Taiwan develop limited-area ocean models for their specific mission purpose and all face to a common problem that is short of lateral boundary condition provided from an upstream circulation model. The accuracy of driving forces for ocean models from lower layer of atmospheric model also needs to be improved. Furthermore sufficient computing resource is necessary for model calculation to meet the forecast need. We need to overcome those bottlenecks on improving prediction products. Therefore a four-year (2008-2011) project on developing an operational 3D baroclinic ocean current modeling system for real-time forecasting of the ocean currents in the seas around Taiwan is performed in CWB. The complete operational results can be widely used in downstream units with specific small-scale applications.

Information products are now available to the public via internet web pages in near real-time. A more effective information delivery system including presentation, database and dissemination is continuous improving. Another four-year (2008-2011) project on the integration and establishment of marine information e-service system is performing to integrate both observed and forecast data and explore greater use of GIS techniques, such as the presentation of environmental information along major shipping routes, at major recreational and tourist coastal areas, for harbors and fishing grounds. We corporate with the Coast Guard Administration in some tasks of this project on developing a search and rescuing system which is connected to the current model result and is applied at times of disasters and emergencies.

Key word: operational 3D ocean model, marine information e-service, GIS techniques