COMPETENCY 1: ANALYSE AND MONITOR CONTINUALLY THE MARINE WEATHER SITUATION

Competency description

Continuously monitor the latest observations, advisories, forecasts and warnings of marine weather parameters and variables, and significant weather phenomena. Determine the need for issuance, cancellation or amendment/update of advisories, forecasts and warnings according to documented thresholds and regulations.

Performance criteria

1. Maintain a weather watch over the marine weather situation, evolving significant weather phenomena and, where available, advisories issued by other meteorological services, and model guidance;
2. Compare current forecasts and warnings with observed conditions;
3. On the basis of the weather watch, appraise the need for amendments to forecasts and updates of warnings against established and documented criteria.

Background knowledge and skills

* Knowledge of marine meteorological products (routine and non-routine), their issue times and the priorities applied in the region;
* Knowledge of non-routine weather conditions that trigger gale warnings, special marine warnings, storm warnings, wave warnings, surf warnings and advisories;
* Knowledge of meteorological analysis techniques (subjective and objective);
* The ability to interpret:
  + Radar and satellite imagery to identify fog, rapid cyclogenesis, frontogenesis, severe convective systems, tropical cyclones, thunderstorms, squalls, sea ice and other potentially dangerous phenomena;
  + Numerical weather prediction (NWP) guidance (including Ensemble Prediction Systems (EPS)), marine meteorological products and other types of objective guidance, and their assimilation in the preparation of forecasts and warnings;
  + Observed variables and parameters, when there are differences between automatic sensor technologies and manual observing techniques, and their impact on forecast and warning products;
  + Coded real-time raw data including buoy and ship reports.
* Knowledge of relevant observing systems, platforms, and sensors that may include remote sensing (satellite altimeters, scatterometers, microwave sensors, radar, lightning detection systems); in-situ sensors (anemometers, tide gauges, moored wave buoys, drifting buoys, bottom pressure sensors); human observing procedures (ship, shore) and how their advantages and limitations vary with respect to prevailing seasonal and meteorological conditions;
* Knowledge of bathymetry, local topography, coastal geomorphology, marine climatology and local weather systems and their potential impact on winds, waves and other phenomena, such as abnormal water level or currents, in the forecast area of responsibility;
* The ability to perform manual and subjective analyses (including techniques for analysis in data-sparse areas);
* The ability to perform analysis on weather-related images;
* The ability to perform statistical data analyses;
* The ability to apply statistical analysis and other informational techniques to data that have a geographical or geospatial aspect.