

Improvement in Wave Forecast Chart

~ New Information on Rough Sea Area Where a Large Wave Such as Pyramidal Waves may Easily Occur ~

It is difficult and sometimes even dangerous for ships to navigate or work in the sea when the sea surface becomes rough, chaotic, complicated and very steep, although those conditions are not necessarily related to wave height. In general, when plural waves approach from different directions, the sea surface may become irregular comparing to a simple wave condition, and sometimes an abnormal high wave such as a pyramidal wave might happen. Current flowing against the wave direction may make wave heights larger and their wave lengths shorter, resulting in much steeper waves, and the sea surface changes quickly and ships may be shaken hard in these areas.

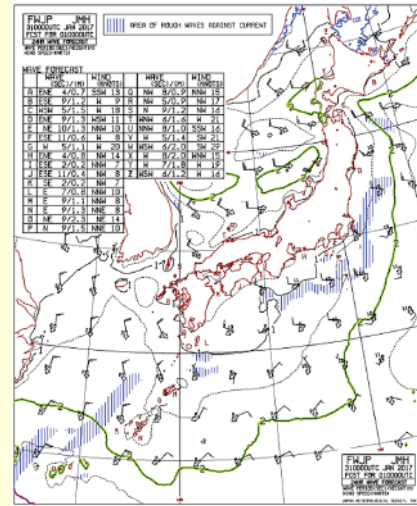
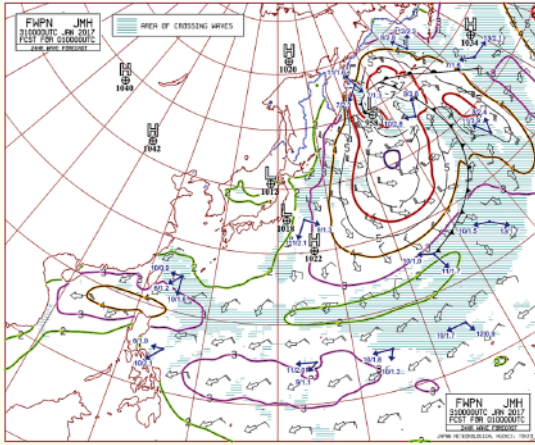
Therefore, the Japan Meteorological Agency has developed a method to detect those areas by analyzing predicted results of wave models. Since the development finished, information on those sea areas was added to the wave forecast charts provided by the Radio Facsimile known as JMH on March 7, 2017. Considering the scale of phenomena, size of affected ships and so on, two conditions described above (areas of crossing waves and areas of rough waves against the current) were added in the ocean wave charts and coastal wave charts respectively.

① Ocean wave charts

Areas where significant wave heights are 1.8m or more, and the sea surface becomes complicated by comparable plural waves are marked. Information on wave components was also plotted.

② Coastal wave charts

Areas with wave heights amplified by 5% or more by an opposing current are marked. Wavelength is also shortened and the sea surface changes quickly, which affects small-size ships in particular.



Example of new wave forecast charts with new information on “Rough sea”

(Left) In Ocean wave forecast chart (FWPN), areas of complicated sea surface by plural waves are marked by horizontal hatching. Each wave condition (wave direction, period and wave height) is plotted. Longer wave direction arrows indicate larger wave heights; numeric values show wave periods [Seconds]/ wave heights [m].
 (Right) In Coastal wave chart (FWJP), areas of waves amplified by 5% or more by opposing currents, where the sea surface changes heavily, are marked by vertical hatch.

Visit following websites of the Japan Meteorological Agency for Ocean/ Coastal wave forecast charts.

- <http://www.data.jma.go.jp/gmd/waveinf/chart/fwpn.html>
- <http://www.data.jma.go.jp/gmd/waveinf/chart/fwjp.html>