

## Wind and wave conditions for a late season tropical cyclone

Written by Lui Wing-hong December 2014

Tropical cyclone Hagupit formed over the western Pacific near the Caroline Islands on 1 December 2014. It intensified into a super typhoon as it approached the Philippines on 4 December and moved across the Philippines on 7 - 8 December. Hagupit weakened significantly while crossing the Philippines and entered the central part of the South China Sea as a tropical storm on 9 December. It intensified into a severe tropical storm over the South China Sea on the following day before dissipating over the coast of southern Vietnam on 12 December.

Hagupit demonstrated the classical feature often associated with a late season tropical cyclone. As Hagupit moved across the Philippines and the South China Sea, the northeast monsoon associated with an anticyclone over China helped maintain the non-symmetric wind distribution in the vicinity of the tropical cyclone. Figure 1 shows that under the combined effect of the northeast monsoon and Hagupit, a belt of strong to gale force winds affected the central and northern part of the South China Sea to the north and west of Hagupit.

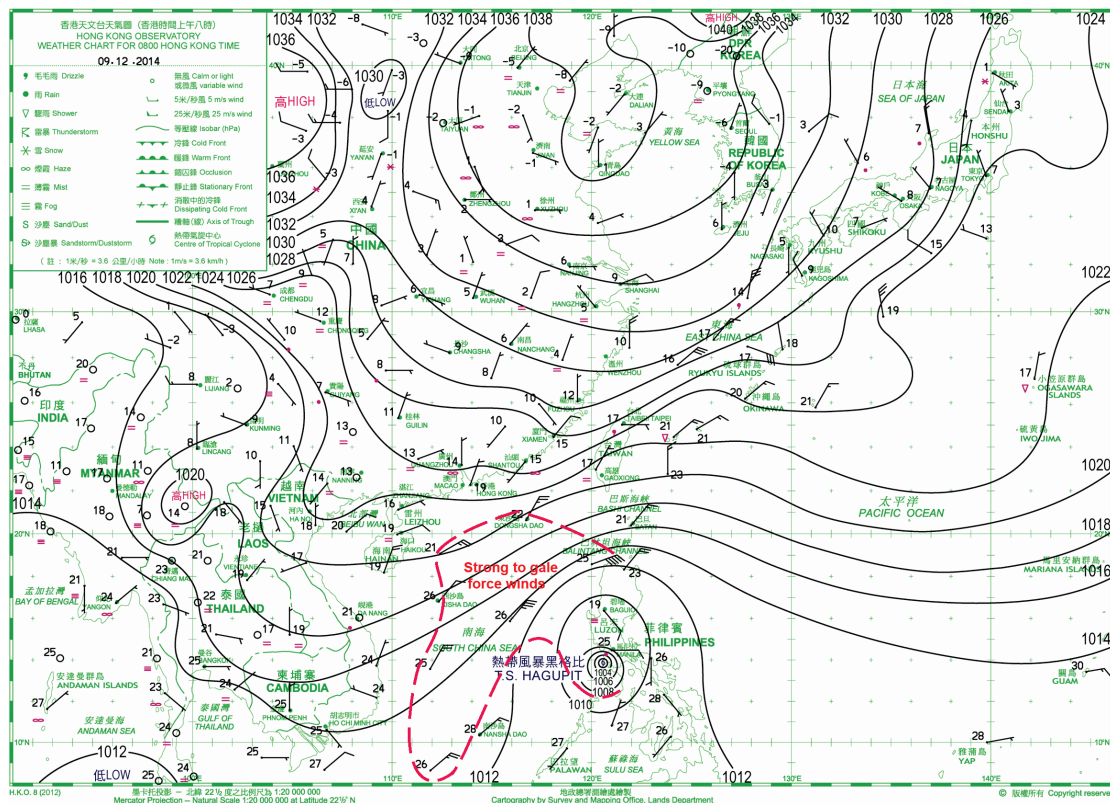


Figure 1 Hong Kong Observatory weather map of 9 December 2014.

The sea waves in the area surrounding Hagupit showed a similar pattern. For example, at 0000 UTC on 10 December 2014, ships over the South China Sea reported wave heights of 3.0 to 4.0 m over the region to the north and west of Hagupit, while another ship south of Hagupit reported a wave height of only 0.5 m (Figure 2). The non-symmetric distribution of winds and waves surrounding the tropical cyclone has to be taken into account in issuing marine forecasts. During such situations, timely ship reports would be very useful reference materials for the forecasters.

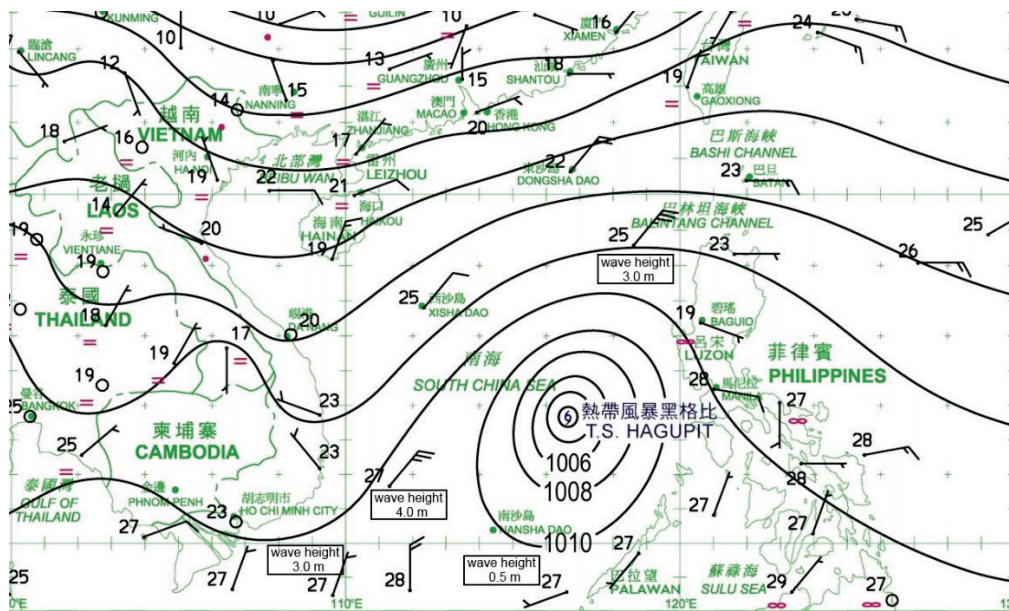


Figure 2 Wave heights reported by ships over the South China Sea as at 0000 UTC 10 December 2014