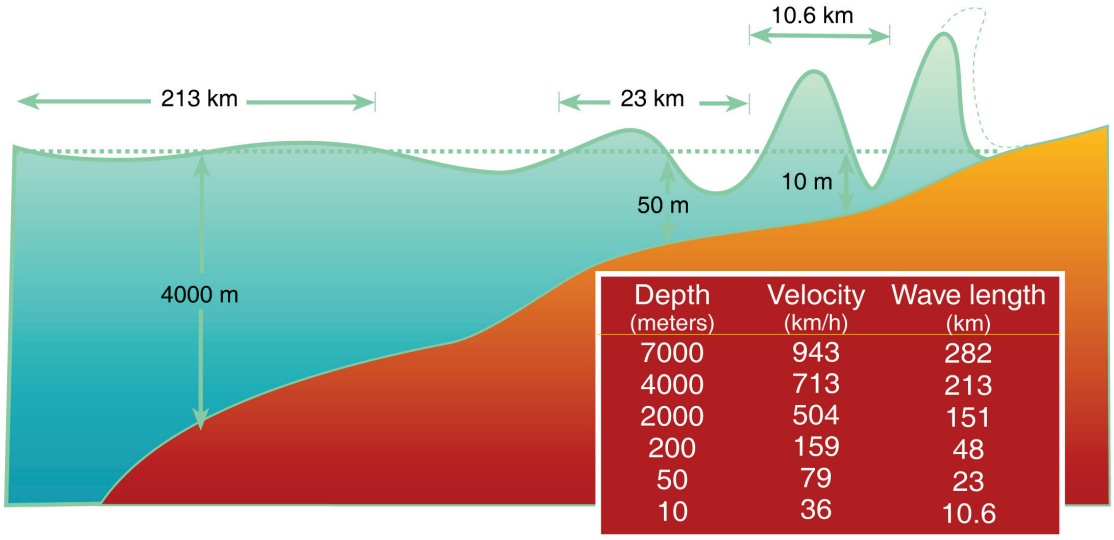
**Tsunami Safety for Vessels**

Written by Lau Dick-shum December 2014

Tsunami is a Japanese term meaning wave ("nami") in a harbour ("tsu"). It is a series of travelling waves of extremely long wavelength and time period usually generated by a submarine earthquake with vertical movement of the seafloor.

In deep oceans, tsunami waves can propagate as fast as a commercial jet plane but has a small wave height of only a few tens of centimeters or less and will not easily be detected by vessels at sea. However, when they reach the shallow waters of the coast, the waves will slow down to speed similar to those of a car moving on a road. The sea water will then pile up into a wall of destruction of meters or more in height, inundating low-lying coastal areas and causing severe damages to vessels staying at ports.




Tsunami speed is reduced in shallow water while wave height increases rapidly
(Courtesy of International Tsunami Information Centre)

Hence, vessel masters have to consider taking appropriate safety measures and responses depending on the size of the tsunami, time left before the arrival of the first tsunami wave and weather condition at sea. Most tsunamis are relatively small to cause damage to vessels, but mega tsunami may occur on rare occasions. As tsunami wave height is small in deep sea, it would be relatively safe for vessels to remain staying at or evacuate to deep sea before the arrival of the first tsunami wave. However, for vessels which do not have enough time to evacuate to deep sea but have to remain moored in ports, their moorings should be doubled and all personnel

should leave the vessels and head for higher grounds. Vessels already evacuated to deep sea should not approach to the coast until the tsunami threat has been over. They should keep close watch of the latest tsunami warning messages issued by local authority when it is safe to return to ports and make sure that the conditions in the ports are safe for navigation and berthing.

Damage caused by Japan Tsunami on 11 March 2011 (Photo courtesy of Prof. Ian Robertson, University of Hawaii)