

Tidal Observation in Singapore

Dr. Arthur Lim Teck Bin
Maritime Research Centre
School of Civil & Environmental Engineering
College of Engineering
Academic Complex North
Block N1, Level B4, Rm N1-B4b-03
50 Nanyang Ave
Singapore 639798
E-mail ctblim@ntu.edu.sg

Tidal observation activities on Singapore Water has been around for quite a while, with a tidal station first installed and commissioned in 1966 at Keppel Harbour, at the southern portion of Singapore Island. Historically, all the tidal gauges used were the mechanical type, consisting of paper drum roll for plotting of tidal level, till end of 1996 when they were all replaced with the digital tidal gauges.

Presently, the activities over observation of sea level changes fall under the purview of the Hydrographic Department of the Maritime Port Authority (MPA) of Singapore, which is responsible for the monitoring, processing and publishing the tidal level data obtained from its network of tidal gauges.

There are a total of 12 tidal stations maintained by MPA, and of which, the tidal data of 9 stations are published annually in the Singapore Tide Table for maritime usage. Every two years, MPA would conduct rigorous calibration and leveling exercises on all these tide gauges to ensure the recorded tidal level within the accuracy of +/- 2mm. These stations are mainly distributed along Singapore Straits as given in the following table.

Tidal Stations Information Available to Port Users

Tidal Stations Name	Location		Type of TideGauge	Since (Year)
	Lat (N)	Long (E)		
Tuas (West Jurong)	01° 17.4'	103° 39.9'	Acoustic	1977
Raffles	01° 09.6'	103° 44.5'	Acoustic	1977
West Coast	01° 17.5'	103° 45.7'	Acoustic	1977
Bukom	01° 13.5'	103° 46.7'	Acoustic	1977
Sembawang	01° 27.9'	103° 50.1'	Acoustic	1977
Tanjong Pagar	01° 15.7'	103° 51.1'	Acoustic	1977
Tanah Merah	01° 18.7'	103° 59.3'	Acoustic	1977
Tanjong Changi	01° 23.4'	103° 59.9'	Acoustic	1977
Horsburgh	01° 19.8'	104° 24.2'	Radar**	2003

**** In 2003, the acoustic tidal gauge was damaged during a monsoon storm and has since been replaced.**