


Severn Bridge Wave Radar

Location			
OS	351587 E 186389 N		
WGS84	Latitude: 51° 34.457' N Longitude: 02° 41.999' W		
Instrument type			
Rosemount WaveRadar REX		Rosemount WaveRadar REX	Location of radar (Google mapping)
Water depth	N/A		

Data Quality

Recovery rate (%)	Sample interval
97	30 minutes

Monthly Averages - 2014

All times are GMT

Month	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	SST (°C)	No. of days
January	0.12	4.1	2.2	-	-	29
February	0.19	4.3	2.4	-	-	28
March	0.10	6.0	2.2	-	-	30
April	0.09	5.7	2.2	-	-	30
May	0.12	4.8	2.3	-	-	30
June	0.08	5.1	2.2	-	-	29
July	0.09	5.1	2.2	-	-	31
August	0.11	4.8	2.2	-	-	30
September	0.08	6.8	2.2	-	-	27
October	0.12	5.0	2.2	-	-	31
November	0.09	5.4	2.2	-	-	28
December	0.13	5.1	2.3	-	-	30

Storm Analysis

Date/Time	H _s (m)	T _p (s)	T _z (s)	Dir. (°)	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
12-Feb-2014 11:30	1.23	6.1	4.1	-	-3.56	HW +6	8.8	0.36	2.77
10-May-2014 22:00	1.15	5.8	4.7	-	-2.96	HW +6	8.0	0.61	0.92
08-Feb-2014 19:00	1.10	5.3	3.9	-	-1.29	HW +6	5.4	1.61	2.12
14-Feb-2014 23:30	1.03	6.7	5.8	-	-0.70	HW +4	10.8	0.91	2.27
03-Jan-2014 09:30	0.94	5.3	5.5	-	7.05	HW +1	13.7	0.84	1.27

Annual Statistics

Year	Annual H _s exceedance* (m)						Annual Maximum H _s	
	0.05%	0.5%	1%	2%	5%	10%	Date	A _{max} (m)
2011	-	-	-	0.40	0.31	0.22	06-Sep-2011 06:40	0.91
2012	0.69	0.46	0.40	0.32	0.23	0.17	22-Nov-2012 15:00	0.90
2013	0.82	0.52	0.44	0.34	0.24	0.18	02-Nov-2013 17:30	1.08
2014	0.97	0.59	0.47	0.37	0.25	0.18	12-Feb-2014 11:30	1.23

* i.e. 5 % of the H_s values measured in 2011 exceeded 0.31 m

Distribution plots

The distribution of wave parameters are shown in the accompanying graphs of:

- Annual time series of H_s (red line is 0.7 m storm threshold)
- Percentage of occurrence of H_s and T_z for 2014
- Incidence of storm waves for 2014. Storm events are defined using the Peaks-over-Threshold method. The highest H_s of each storm event is shown
- Joint distribution of all parameters for all measured data, given as percentage of occurrence

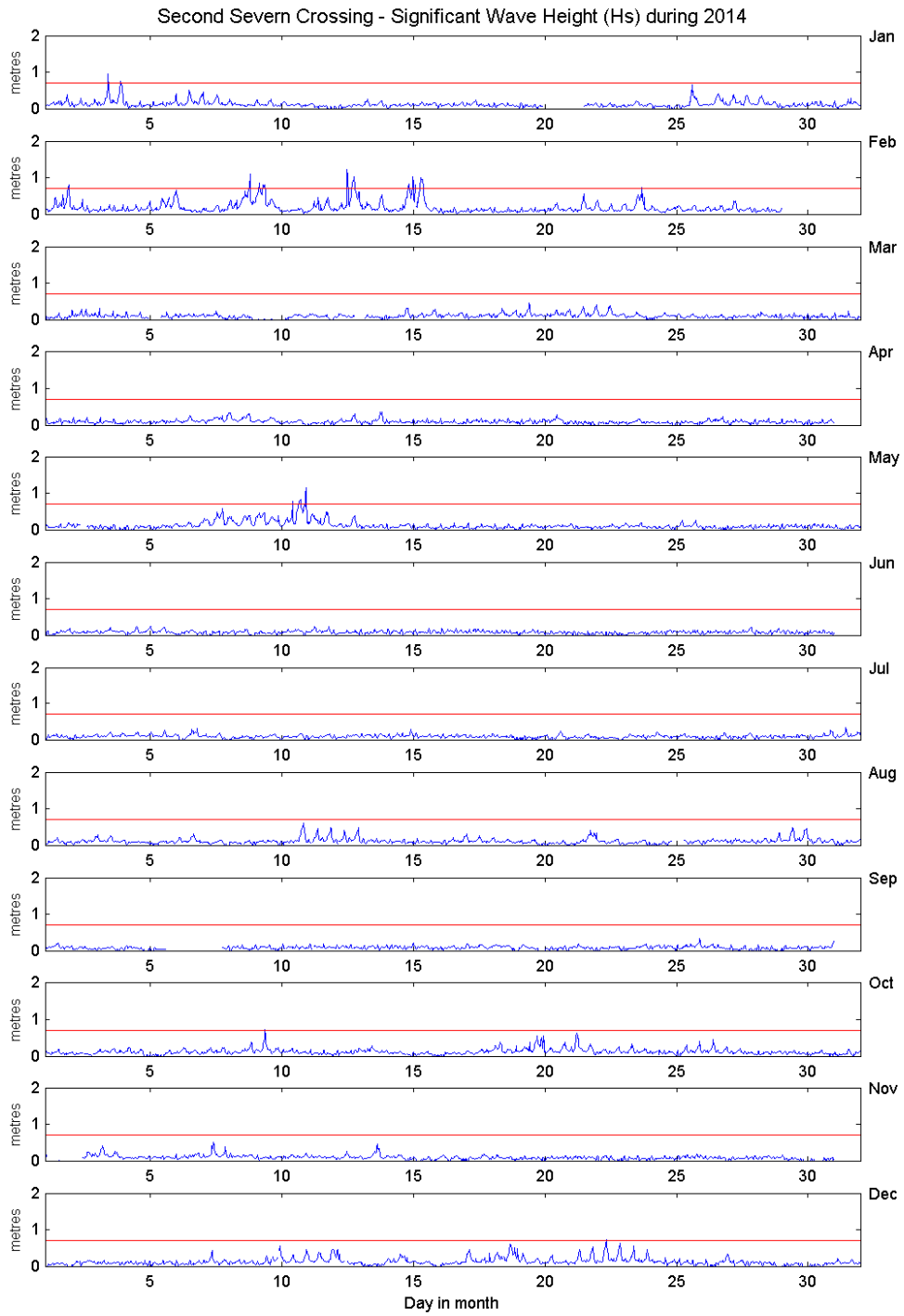
General

The WaveRadar REX was installed on 1 August 2011.

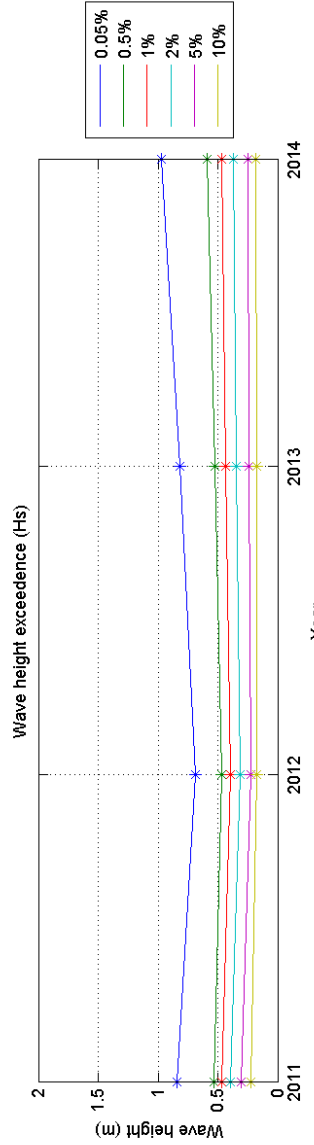
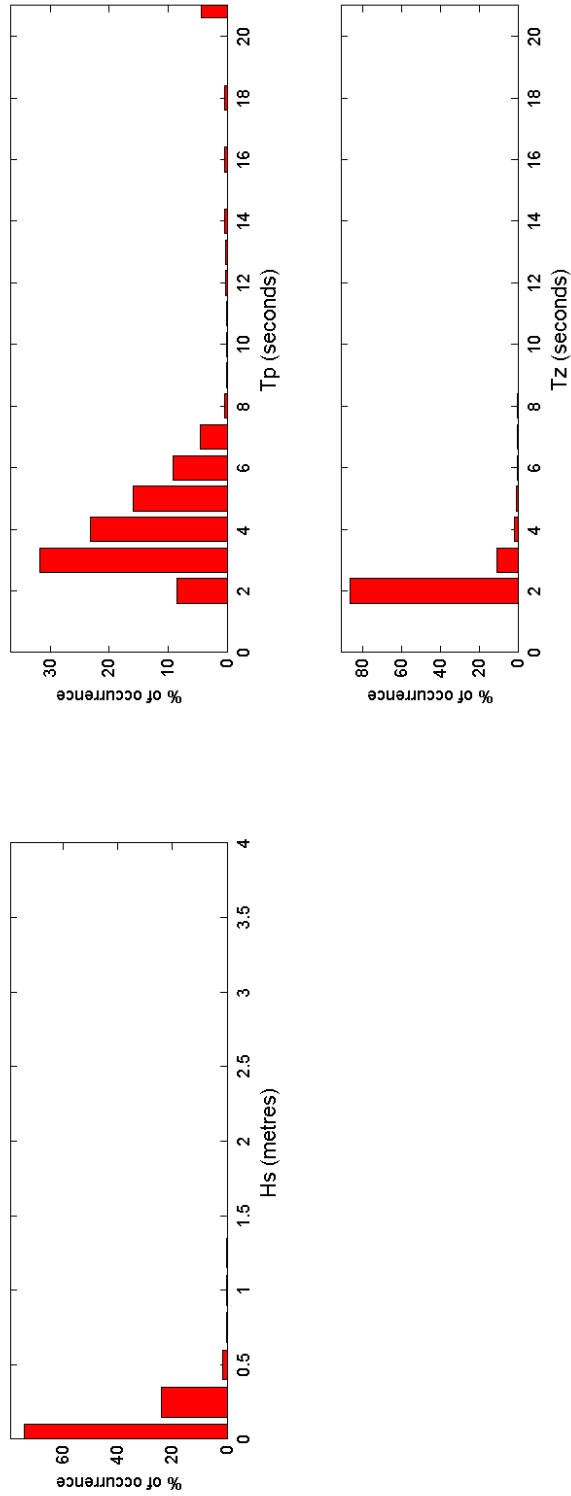
Acknowledgements

The WaveRadar REX is installed on the Severn Bridge by kind permission of Second Severn Crossing Partnership. TASK2000 tidal prediction software was kindly provided by the Permanent Service for Mean Sea Level, Proudman Oceanographic Laboratory.

* Tidal information is obtained from the nearest recording tide gauge (the radar also provides tidal data). The surge shown is the residual at the time of the highest H_s. The maximum tidal surge is the largest positive surge during the storm event.



Second Severn Crossing 2014



Second Severn Crossing 2011 to 2014 - Joint distribution (% of occurrence)

