

## West Bay Directional Waverider Buoy

### Location

OS: E 347102 N 88446  
 WGS84: Latitude: 50° 41.593' N Longitude: 002° 45.020' W

### Water Depth

10m CD

### Instrument Type

Datawell Directional WaveRider Buoy Mk III

### Data Quality

C1(%)	Sample interval
79	30 minutes

### Monthly Means

*All times GMT*

Month	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Direction	SST	No. of days
	(m)	(s)	(s)	(°)	(°C)	
January	1.46	8.8	4.8	209	10.2	31
February	1.35	10.9	5.5	207	9.2	28
March	1.94	10.4	5.9	211	10.0	8
April	-	-	-	-	-	0
May	0.60	6.8	3.8	209	13.5	7
June	0.73	8.0	4.5	214	15.6	30
July	0.89	5.7	4.0	214	16.3	31
August	0.56	6.8	3.9	211	17.3	31
September	0.53	6.3	3.9	208	17.2	30
October	0.62	8.3	4.6	203	15.3	31
November	0.65	6.7	4.0	211	12.7	30
December	1.28	8.6	4.8	205	10.3	31

Tables and plots of these values, together with the minimum and maximum values and the standard deviation are available on the website.

Highest storm events in 2007									
Date/Time	H <sub>s</sub>	T <sub>p</sub>	T <sub>z</sub>	Dir.	Water level elevation* (OD)	Tidal stage (hours re. HW)	Tidal range (m)	Tidal surge* (m)	Max. surge* (m)
06-Mar-2007 02:30	5.61	11.8	7.8	212	1.28	HW -6	2.0	0.77	0.81
18-Jan-2007 12:00	4.63	10.5	7.5	225	1.10	HW +6	1.4	0.43	0.60
11-Jan-2007 10:30	4.44	10.0	7.0	225	1.78	HW	0.9	0.12	0.39
02-Dec-2007 11:00	4.22	9.1	7.1	217	-	HW -1	0.9	-	-

\* Tidal information is obtained from the nearest recording tide gauge (the National Network gauge at Weymouth). The surge shown is the residual at the time of the highest H<sub>s</sub>. The maximum tidal surge is the largest positive surge during the storm event.

Year	Annual $H_s$ exceedance* (m)						Annual Maximum $H_s$	
	0.05%	0.5%	1%	2%	5%	10%	Date	$A_{max}$ (m)
2007	4.88	3.7	3.31	2.92	2.45	2.03	06/03/2007 02:30	5.61

\* i.e. 5 % of the  $H_s$  values measured in 2007 exceeded 2.45m

### Distribution plots

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

- Percentage of occurrence of  $H_s$ ,  $T_p$ ,  $T_z$  and Direction for 2007
- Percentage wave height exceedance (all recorded years) – note that the statistics for 2003 were based on measurements from July to December only
- Joint distribution of all parameters for 2007, given both as number of observations and as percentage of occurrence
- Cumulative joint distribution of parameters from start of records (percentage of occurrence only)
- Incidence of storm waves for 2007 and for all previous years. Storm events are defined using the Peaks-over-Threshold method. The highest  $H_s$  of each storm event is shown. Note that the buoy was not deployed during the late autumn storms – see below.
- Annual time series of  $H_s$  (red line is storm threshold)

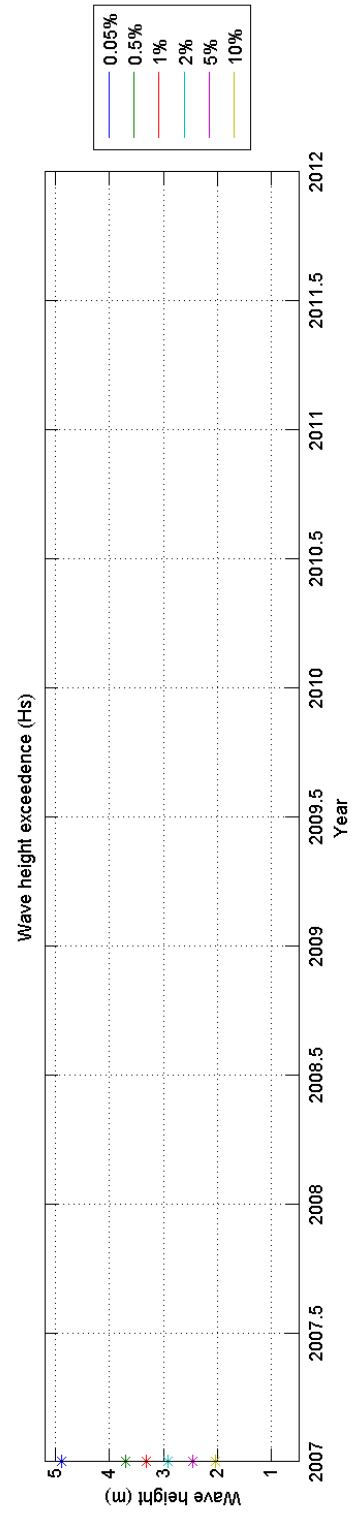
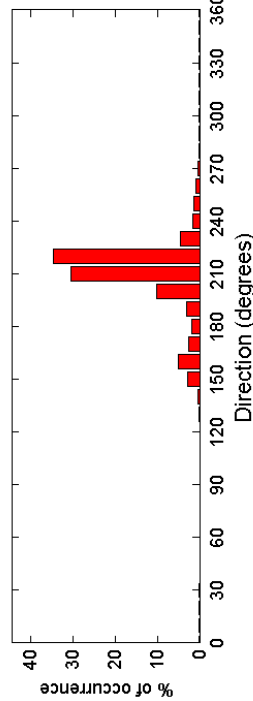
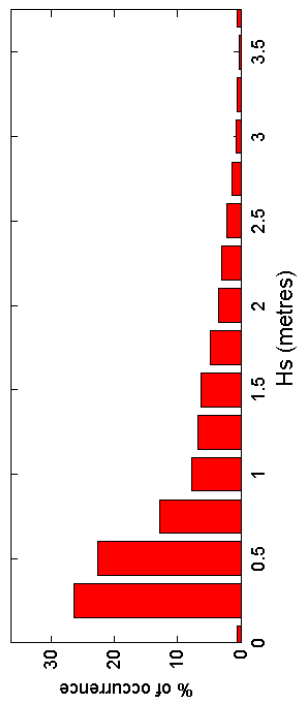
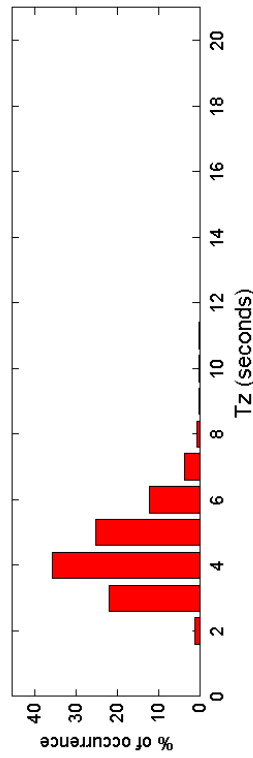
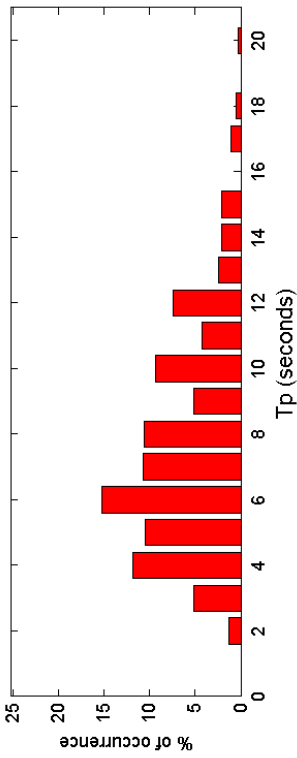
### General

The WaveRider was deployed on 19 November 2006. It was cut from its mooring on 10 January 2007 and re-deployed on 12 January. In early March a fault was discovered which required repair by Datawell. The buoy was re-deployed on 24 May 2007.

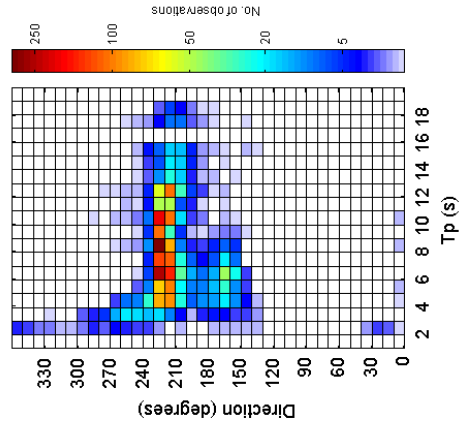
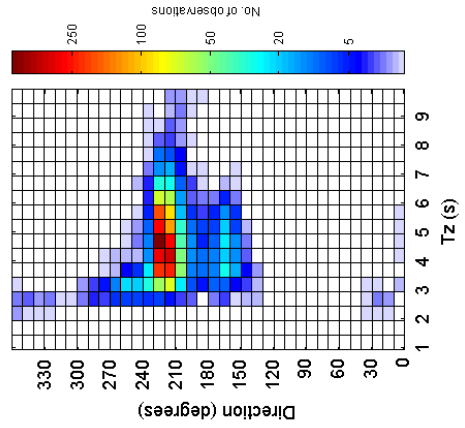
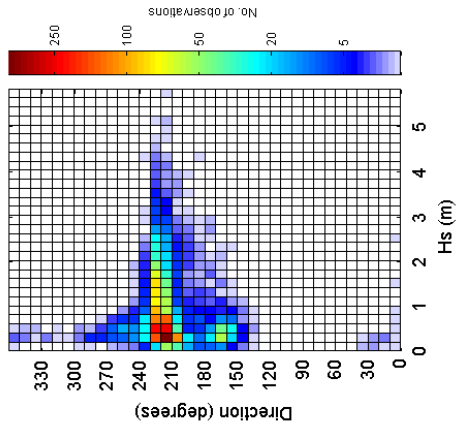
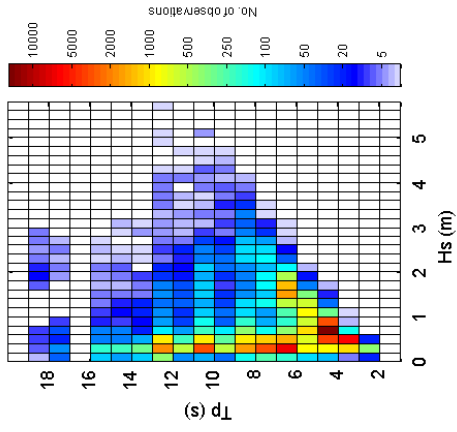
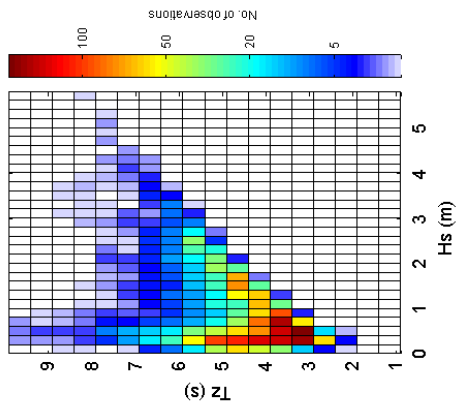
### Acknowledgements

Tidal data were supplied by the British Oceanographic Data Centre as part of the function of the National Tidal and Sea Level Facility, hosted by the Proudman Oceanographic Laboratory and funded by DEFRA and the Natural Environment Research Council.

West Bay 2007



West Bay 2007 - Joint distribution



West Bay 2007 - Joint distribution (% of occurrence)

