

Repairs undertaken in Brisbane 20-27 July 2007

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	<b>Location</b>	<b>Repair</b>
1	Forepeak tank	Temporary repair carried out in Port Vila removed and defect area cropped and renewed.
2	Forepeak tank	Second area of deep corrosion cropped and renewed.
3	No 1 deep tank	Crack in port side shell plate and deep stringer cracked in way of damaged shell plate. Area cropped and renewed.
4	No 1 deep tank	Transverse girder found detached from deckhead, and re-attached.
5	Bulkhead between No 1&2 deep tanks	Possible hole between tanks. Bulkhead hose tested, no hole found. Ballast valve changed.
6	No 2 deep tank	Crack in port side shell plate and deep stringer cracked in way of damaged shell plate. Area cropped and renewed.
7	No.2 deep tank	Brackets connecting stringer to forward bulkhead cracked. Brackets cut out and replaced.
8	No 2 deep tank	Starboard side lower bracket cracked at frame 191. Bracket cropped and renewed.
9	No 2 deep tank	Localised deep pitting. Where identified, areas ground out and puddle welded.
10	No 2 deep tank	Small hole in bulkhead between tank and No 3 void repaired with doubler plate.
11	Ventilation duct at frame 31 starboard	Cement box fitted at Port Vila removed, and corroded area cropped and renewed.
12	Ventilation duct at frame 42 starboard	Wasted shell plating discovered by NDT cropped and renewed.

13	Port tailshaft	Minor oil leak discovered and repaired.
14	Forecastle bulwark	Damaged area and wasted face bars on adjacent support brackets cropped and renewed.
15	Bosun's store	Centreline girder tripped. Damaged area cropped and renewed.
16	Ducktail tanks port and starboard	Minor leak from plug welds identified. Not repaired due to possibility of damaging internal foam.
17	TV satellite dome (Starboard side)	Damaged beyond repair and replaced.
18	Antennae and aerials	Numerous small aerials and antennae were lost or damaged during the storm. All navigation and communication equipment inspected and repaired as required.
19	External stairway from forecastle deck.	Treads replaced.
20	Broken windows	Where available, glass replaced. Glass of correct standard ordered for remaining windows, and windows blanked with suitable steel inserts.
<b>Additional work completed not associated with storm damage</b>		
21	Engine room	Starboard side frames 70, 72 and 75 at connection with tank top, found wasted, and cropped and renewed.
22	Fuel tanks 90,91 and 92	Contaminated tanks pumped out and cleaned.
23	Ventilation ducts	16 ducts were identified as forming part of the ship's side. All extensively examined using ultra-sound NDT to determine shell plate thickness. (see item 12 above)

24	No 3 void	3 ballast valves replaced due to suspected leakage.
25	No 3 double bottom ballast tank	On flooding up, a small hole was identified leaking water into No 3 void. Doubler fitted over the hole.
26	Lifeboat No 12	GRP repairs completed around "P" bracket and shaft realigned.
27	Lifeboat davits	Sticking trackway rollers identified for corrective maintenance.
28	Lifeboat No 15	Winch motor swapped for a reconditioned spare.
29	Ballast system hydraulic power pack	Removed ashore for overhaul.

Selected Forecasts – Meteorological Service of New Zealand Ltd  
Period 9th and 10th July 2007

Selected Forecasts – Meteorological Service of New Zealand Ltd  
 Period 9<sup>th</sup> and 10<sup>th</sup> July 2007

Key

C – Colville  
 H – Hauraki Gulf  
 B – C Bream Head to Cape Colville

MWB Marine Weather Bulletin  
 RMF Recreational Marine Forecast

Issued time (NZ local time)	Type of forecast	Area	Valid to	Main details	Outlook
09 – 00:35	MWB	C	09 - 2359	GALE WARNING IN FORCE wind to east 35 knots	10 <sup>th</sup> AM to 50 kts easing on 11 <sup>th</sup>
09 – 01:01	RMF	H	09 - 2359	25 gusting 35 but 30 gusting 40 tonight	Tues (10 <sup>th</sup> ) SE rising to 50 kts, Weds SE 50 kts easing later in the day
09 – 04:39	MWB	C	09 - 2359	GALE WARNING IN FORCE NE 25 knots rising E 35 knots Sea very rough	Tues (10 <sup>th</sup> ) SE 50 knots high seas, Easing late weds(11 <sup>th</sup> )
09 – 05:05	RMF	H	09 - 2359	25 gusting 35 but 30 gusting 40 tonight	Tues (10 <sup>th</sup> ) SE rising to 50 kts, Weds SE 50 kts easing later in the day
09 – 09:03	MWB update	C	09 - 2359	GALE WARNING IN FORCE E 25 knots rising to 35 knots. Sea becoming very rough	Easterly rising Tue(10 <sup>th</sup> ) to SE 50 knots with high seas, easing late Weds (11 <sup>th</sup> )to 30 knots
09 – 11:09	RMF	H	10 - 2359	GALE WARNING IN FORCE NE 25 knots gusting 35 knots, rising to 30 knots gusting 40 knots overnight. Sea rough	10 <sup>th</sup> . NE 30 knots gusting to 40 knots, rising to E 35 knots gusting 45 knots in the morning. Sea becoming very rough in the morning
		B - C		STORM WARNING IN FORCE NE 25 knots gusting 35 knots rising 30 knots gusting 40 knots. Sea rough	10 <sup>th</sup> . Tending easterly 40 knots gusting 50 knots in the morning rising to 50 knots gusting 60 knots in the afternoon. Very rough sea.

09 – 12:57	MWB (amended)	C	10 - 2359	STORM WARNING IN FORCE. NE 25 knots rising to E 35 knots overnight and to 50 knots pm 10 <sup>th</sup> . Sea becoming high with swell to 5m.	For following three days, SE easing to 35 knots by 11 <sup>th</sup> evening, 12 <sup>th</sup> to 25 knots and 13 <sup>th</sup> to 15 knots. High sea easing late 11 <sup>th</sup> . Heavy easterly swell easing 12 <sup>th</sup> .
09 – 16:39	MWB	C	10 - 2359	STORM WARNING IN FORCE. NE 25 knots rising to E 35 knots overnight and to 50 knots 10 <sup>th</sup> afternoon. Sea becoming high, NE swell rising to 5m	SE easing to 35 knots on 11 <sup>th</sup> night, later to 25knots 12 <sup>th</sup> , and 15 knots 13 <sup>th</sup> . High seas easing on 11 <sup>th</sup> , heavy easterly swell easing 12 <sup>th</sup> .
09 – 16:52	RMF	H	10 - 2359	GALE WARNING IN FORCE NE 25 knots gusting 35 knots rising 30 knots gusting 40 knots. Sea rough	10 <sup>th</sup> . NE 30 knots gusting to 40 knots, rising to E 35 knots gusting 45 knots in the morning. Sea becoming very rough in the morning
		B - C		STORM WARNING IN FORCE NE 25 knots gusting 35 knots rising 30 knots gusting 40 knots. Sea rough	10 <sup>th</sup> . Tending easterly 40 knots gusting 50 knots in the morning rising to 50 knots gusting 60 kts in the afternoon. V rough sea
09 – 19:52	MWB	SubTropic	10 - 1200	Area of winds moving with fronts and spreading with Low to cover whole region by 10 2359 and may rise to storms by 10 1800	
10 – 00:37	MWB	C	10 - 2359	STORM WARNING IN FORCE. NE 35 knots rising to E 50 knots 10 <sup>th</sup> afternoon. Sea becoming high. NE swell rising to 5m	SE easing to 35 knots 11 <sup>th</sup> night, 25 knots 12 <sup>th</sup> , and 15 knots 13 <sup>th</sup> . High sea easing on 11 <sup>th</sup> , Heavy swell easing 12 <sup>th</sup>

10 – 01:08	RMF	H	10 - 2359	GALE WARNING IN FORCE. E 30 knots gusting 40 knots rising to 35 knots gusting 45 knots, and 40 gusting 55 knots by afternoon 10 <sup>th</sup> . Sea becoming very rough	11 <sup>th</sup> SE easing to 30 knots at night, and further to 25 knots on 12 <sup>th</sup> . By 13 <sup>th</sup> wind eased to SE 15knots.
		B - C		STORM WARNING IN FORCE. E 35 knots rising to 40 knots gusting 50 knots in the morning and rising to 50 knots gusting 60 knots in the afternoon. Very rough sea becoming high.	
10 – 04:36	MWB	C	10 - 2359	STORM WARNING IN FORCE. E 40 knots rising to 50 knots 10 <sup>th</sup> afternoon. Sea becoming high. NE swell to 5 m	SE easing on 11 <sup>th</sup> night to 35knots, later 12 <sup>th</sup> to 25 knots and 15 knots on 13 <sup>th</sup> .
10 – 05:06	RMF	H	10 - 2359	GALE WARNING IN FORCE. E 30 knots gusting 40 knots rising 35 knots gusting 45 knots this morning (10 <sup>th</sup> ) and to 40 knots gusting 55 knots late afternoon.	11 <sup>th</sup> SE easing to 30 knots at night, and further to 25 knots on 12 <sup>th</sup> . By 13 <sup>th</sup> wind eased to SE 15knots
		B - C		STORM WARNING IN FORCE. E 40 knots gusting 50 knots, rising to 50 knots gusting 60 knots this afternoon (10th). Very rough sea becoming high.	
10 – 07:55	MWB	Subtropic	10 - 2359	Second low expected to develop by about 10 1800. Around Lows, winds 25 knots with gales and storms.	Trough extending from second low. Broad area of 25 knot to gale force winds possibly increasing to storm force until 11 2359. Heavy swells easing by 131200.
10 – 09:14	MWB (Updated)	C	10 - 2359	STORM WARNING IN FORCE. E 40 knots rising to 50 knots this afternoon (10 <sup>th</sup> ) sea becoming high. NE swell rising to 5m.	SE easing on 11 <sup>th</sup> night to 35knots, later 12 <sup>th</sup> to 25 knots and 15 knots on 13 <sup>th</sup>

10 – 09:35	MWB (Updated)	C	10 - 2359	STORM WARNING IN FORCE. E 40 knots rising to 50 knots this afternoon (10 <sup>th</sup> ) sea becoming high. NE swell rising to 5m	SE easing on 11 <sup>th</sup> night to 35knots, later 12 <sup>th</sup> to 25 knots and 15 knots on 13 <sup>th</sup>
10 – 10:59	RMF	H	11 - 2359	GALE WARNING IN FORCE. E 35 knots gusting 45 knots rising 40 knots gusting 55 knots this afternoon. Tending to SE overnight tonight.(10 <sup>th</sup> )	11 <sup>th</sup> SE 40 knots gusting 55 knots, easing to 30 knots gusting 40 knots in the evening
		B - C		STORM WARNING IN FORCE. E 40 knots gusting 50 knots rising to 50 knots gusting 60 knots this afternoon. Tending SE overnight. Very rough sea becoming high.	SE 50 knots gusting 60 knots easing 40 knots gusting 50 knots in the evening.(11 <sup>th</sup> ). High seas easing to very rough in the evening.
10 – 12:50	MWB	C	11 - 2359	STORM WARNING IN FORCE. E 45 knots rising to 55 knots this afternoon (10 <sup>th</sup> ), easing to 40 knots by evening. Sea becoming high for a time. E swell rising to 5m for a time.	SE easing to 25 knots on 12 <sup>th</sup> night, and 15 knots on 13 <sup>th</sup> . Very rough seas easing 12 <sup>th</sup> , heavy easterly swell easing 12 <sup>th</sup> .
10 – 15:27	RMF (Updated)	H	11 - 2359	STORM WARNING IN FORCE. E 45 knots gusting 60 knots, but 60 knots gusting 75 knots north of Whangaparaoa Peninsula. Tending SE 45 knots gusting 60 knots everywhere tonight. Sea high but very high in North tonight	SE easing to 40 knots gusting 55 knots in the morning and 30 knots gusting 40 knots in the evening.
		B - C		STORM WARNING IN FORCE. E 60 knots gusting 75 knots tending SE overnight. Sea very high	SE easing to 50 knots gusting 60 knots in the morning (11 <sup>th</sup> ), and to 40 knots gusting 50 knots in the evening.. Seas easing to very rough in the evening.

10 – 16:28	MWB	C	11 - 2359	<p><b>STORM WARNINGS IN FORCE.</b> E 65 knots easing to 55 knots in the morning, and to SE 40 knots on Wednesday (11<sup>th</sup>) evening. Very high sea easing. E swell rising to 5m for a time.</p>	SE easing Thursday (12 <sup>th</sup> ) night to 25 knots and later on Friday (13 <sup>th</sup> ) to 15 knots. Very rough sea nad heavy swell easing Thursday (12 <sup>th</sup> )
10 – 16:47	RMF	H	11 - 2359	<p><b>STORM WARNING IN FORCE .</b> E 45 knots gusting 60 knots, but 60 knots gusting 75 knots north of Whangaparaoa Peninsula. Tending SE tonight. Sea high but very high in north.</p>	SE easing to 40 knots gusting 55 knots everywhere in the morning and 30 knots gusting 40 knots in the evening
		B - C		<p><b>STORM WARNING IN FORCE.</b> E 65 knots gusting 80 knots tending SE tonight (10<sup>th</sup>). Sea very high</p>	SE easing to 50 knots gusting 60 knots in the morning (11 <sup>th</sup> ), and to 40 knots gusting 50 knots in the evening.. Seas easing to very rough in the evening
10 – 20:24	RMF (Updated)	H	11 - 2359	<p><b>STORM WARNING IN FORCE.</b> E 50 knots gusting 65 knots but 65 knots gusting 85 knots north of Whangaparaoa Peninsula, tending SE tonight. Sea high but very high in North.</p>	SE easing to 40 knots gusting 55 knots everywhere in the morning and 30 knots gusting 40 knots in the evening
		B - C		<p><b>STORM WARNING IN FORCE.</b> E 65 knots gusting 80 knots tending SE tonight (10<sup>th</sup>). Sea very high</p>	SE easing to 50 knots gusting 60 knots in the morning (11 <sup>th</sup> ), and to 40 knots gusting 50 knots in the evening.. Seas easing to very rough in the evening
11 – 00:34	MWB	C	11 – 2359	<p><b>STORM WARNING IN FORCE</b> E 65 knots easing to 55 knots this morning (11th), and to Se 45 knots this evening. Very high seas easing, Easterly swell 5m easing.</p>	SE easing Thursday (12 <sup>th</sup> ) night to 25 knots and later on Friday (13 <sup>th</sup> ) to 15 knots. High seas and heavy swell easing Thursday (12 <sup>th</sup> ).

## Observations

In the following tables, the following definitions apply:

**Dirn** is the direction, measured in degrees clockwise from Geographic North, that the wind is blowing from, and is the mean over the 10 minutes

immediately before each hour.

**Speed** is the mean wind speed measured over the 10 minutes immediately before each hour.

**Gust** is only reported if the highest gust during that 10 minutes is 10 knots higher than the mean speed. (Not available for Whangaparoa.)

**MxGst** is the highest gust during the whole hour before the observation time.

NZ Standard Time	Mokohinau AWS				Tutukaka Harbour AWS				Whangaparaoa AWS			
	Dir'n	Speed	Gust	MxGs	Dir'n	Speed	Gust	MxG	Dir'n	Speed	Gust	MxG
	DegT	Knots	Knots	t Knots	DegT	Knots	Knots	st Knots	DegT	Knots	Knots	st Knots
09-07-2007 00:00	09	20			06	22		25	06	16		
09-07-2007 01:00	08	18		28	06	21		27	06	14		
09-07-2007 02:00	08	20		25	06	22		26	06	14		
09-07-2007 03:00	07	15		24	07	18		24	06	14		
09-07-2007 04:00	07	17		23	06	22		29	06	14		
09-07-2007 05:00	07	18	28	28	07	22		28	07	17		
09-07-2007 06:00	07	18		25	07	22		24	06	14		
09-07-2007 07:00	09	22		29	07	21		26	08	14		
09-07-2007 08:00	08	23		31	07	23		27	05	17		
09-07-2007 09:00	08	22		27	07	26		32	05	18		
09-07-2007 10:00	08	25		31	06	22		28	05	21		
09-07-2007 11:00	08	24		34	06	25		33	06	18		
09-07-2007 12:00	07	21		29	07	24		28	07	20		
09-07-2007 13:00					06	25			06	21		
09-07-2007 14:00	07	22		29	06	25		31	06	21		
09-07-2007 15:00	07	17		31	06	27		32	07	20		
09-07-2007 16:00	07	20			07	27		34	06	22		
09-07-2007 17:00	08	27		34	07	27		31	07	21		
09-07-2007 18:00	07	23	32	33	06	27		33	08	19		
09-07-2007 19:00	07	25		33	06	28		36	08	17		
09-07-2007 20:00	08	27		34	07	28		37	08	18		
09-07-2007 21:00	08	31		39	06	31		36	06	21		
09-07-2007 22:00	08	34		40	06	30		37	07	19		
09-07-2007 23:00	08	30	41	41	06	33		39	08	22		

NZ Standard Time	Mokohinau AWS				Tutukaka Harbour AWS				Whangaparaoa AWS			
	Dir'n	Speed	Gust	MxGst	Dir'n	Speed	Gust	MxGst	Dir'n	Speed	Gust	MxGst
	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots
10-07-2007 00:00	080	30		41	060	35		43	070	24		
10-07-2007 01:00	080	33		42	070	34		41	090	25		
10-07-2007 02:00	080	36		44	080	37		50	080	21		
10-07-2007 03:00	080	35		47	080	42		51	080	22		
10-07-2007 04:00	090	36	45	53	090	41		53	090	28		
10-07-2007 05:00	100	40		52	090	43		53	100	22		
10-07-2007 06:00	100	40	50	54	100	46		54	090	26		
10-07-2007 07:00	100	43	54	56	100	47	57	58	110	23		
10-07-2007 08:00	100	47	57	59	100	43	57	59	110	26		
10-07-2007 09:00	100	46	59	59	090	45	55	65	110	27		
10-07-2007 10:00	100	47	59	64	100	52	69	69	100	29		
10-07-2007 11:00	100	50	62	63	100	56	66	68	090	34		
10-07-2007 12:00	100	51	63	65	100	58	73	73	090	35		
10-07-2007 13:00	100	54	69	69	100	56	67	75	100	34		
10-07-2007 14:00	110	61	72	72	100	59	73	78	100	37		
10-07-2007 15:00	110	63	77		110	63	82	82	110	42		
10-07-2007 16:00	110	67	79	80	090	60	87	87	110	45		
10-07-2007 17:00					100	66	81	82	120	52		
10-07-2007 18:00					090	60	73	86	110	51		
10-07-2007 19:00					060	47	82	90	110	53		
10-07-2007 20:00					080	46	59	59	110	52		
10-07-2007 21:00					070	30		54	110	48		
10-07-2007 22:00					090	18		36	110	47		
10-07-2007 23:00					110	41	55	58	110	43		

NZ Standard Time	Bean Rock AWS			Channel Island				Slipper Island AWS				
	Dir'n	Speed	Gust	MxGust	Dir'n	Speed	Gust	MxGust	Dir'n	Speed	Gust	MxGust
	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots
10-07-2007 00:00	070	21		28	070	36		47	080	23		28
10-07-2007 01:00	060	26		34	080	34		44	080	20		28
10-07-2007 02:00	070	25		31	100	33		43	070	25		33
10-07-2007 03:00	080	23		31	090	38		46	080	23		34
10-07-2007 04:00	080	24		33	100	40		46	070	26		34
10-07-2007 05:00	080	26		34	100	41		49	090	25		35
10-07-2007 06:00	080	29		34	090	41		51	080	26		38
10-07-2007 07:00	080	28		40	100	45		52	080	35		42
10-07-2007 08:00	080	29		34	110	45	54	55	090	32	42	42
10-07-2007 09:00	080	23		35	100	50		57	090	30		43
10-07-2007 10:00	080	28		38	100	57	66	66	090	34	45	51
10-07-2007 11:00	080	33		41	100	54	65	65	090	38	49	49
10-07-2007 12:00	080	31		41	110	57	69	69	090	37	50	53
10-07-2007 13:00	090	37	47	47	120	63	73	73	090	37	49	55
10-07-2007 14:00	080	40		52	110	63	73	73	100	39	52	57
10-07-2007 15:00	090	45	57	57	120	65	76	76	100	44	58	58
10-07-2007 16:00	080	46	60	60	120	69		80	100	43	59	59
10-07-2007 17:00	100	50	63	64	120	72	83	89	100	42	60	62
10-07-2007 18:00	090	51	63	70	120	77	89	89	100	46	66	66
10-07-2007 19:00	090	49	63	70	130	80	93	93	090	43	64	67
10-07-2007 20:00	090	46	59	65	120	75	88	93	090	43	64	70
10-07-2007 21:00	090	44	53	59	120	76	90	91	090	34	59	66
10-07-2007 22:00	090	45	57	61	130	75	87	88	090	31	60	61
10-07-2007 23:00	090	41	52	52	120	70	83	87	090	35	54	61

NZ Standard Time	Mokohinau AWS			Tutukaka Harbour AWS			Whangaparaoa AWS					
	Dir'n	Speed	Gust	MxGs	Dir'n	Speed	Gust	MxGst	Dir'n	Speed	Gust	MxGst
	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots
11-07-2007 00:00					100	47	57	57	110	36		
11-07-2007 01:00					120	46	60	64	110	38		
11-07-2007 02:00					120	49	63	63	120	40		
11-07-2007 03:00					130	48	65	66	120	38		
11-07-2007 04:00					130	51	65	65	120	35		
11-07-2007 05:00					120	48	59	65	120	38		
11-07-2007 06:00					120	51	63	64	130	34		
11-07-2007 07:00					130	50	63	70	150	22		
11-07-2007 08:00					140	47	57	63	150	25		
11-07-2007 09:00					140	44	56	56	150	24		
11-07-2007 10:00					140	46	57	60	150	25		
11-07-2007 11:00					150	44	55	59	150	23		
11-07-2007 12:00					140	44	55	56	150	24		
11-07-2007 13:00					150	42	56	59	150	24		
11-07-2007 14:00					160	42	52	56	150	24		
11-07-2007 15:00					150	46	59	61	150	22		
11-07-2007 16:00	130	53	66		140	43	52	57	140	26		
11-07-2007 17:00					140	43	57	63	140	25		
11-07-2007 18:00	130	54	64		130	46	59	63	140	24		
11-07-2007 19:00	130	57	67	67	130	46	57	62	140	23		
11-07-2007 20:00	120	53	62	68	130	47	61	63	140	20		
11-07-2007 21:00	120	52		64	130	49	59	61	150	18		
11-07-2007 22:00					130	47	57	62	150	17		
11-07-2007 23:00	130	48	57	61	130	43		61	150	20		

NZ Standard Time	Bean Rock AWS			Channel Island			Slipper Island AWS			MxGst Knots
	Dir'n	Speed	Gust	Dir'n	Speed	Gust	Dir'n	Speed	Gust	
	DegT	Knots	Knots	DegT	Knots	Knots	DegT	Knots	Knots	
09-07-2007 00:00	080	11	13	070	18	23	170	5	9	
09-07-2007 01:00	080	12	14	070	20	24	230	5	9	
09-07-2007 02:00	080	12	15	080	19	24	210	7	9	
09-07-2007 03:00	090	11	14	090	21	24	220	9	13	
09-07-2007 04:00	080	13	15	080	20	24	230	8	12	
09-07-2007 05:00	070	13	17	090	18	22	210	8	12	
09-07-2007 06:00	070	18	21				250	8	15	
09-07-2007 07:00	070	16	20				220	5	11	
09-07-2007 08:00	070	15	20	070	23		230	2	9	
09-07-2007 09:00	050	19	23	070	22	31	060	13	17	
09-07-2007 10:00	070	14	21	070	21	30	050	16	24	
09-07-2007 11:00	040	19	26	080	22	27	010	13	24	
09-07-2007 12:00	040	20	25	090	23	28	060	15	27	
09-07-2007 13:00	060	19		080	25					
09-07-2007 14:00	050	19	24	080	23	32	050	14	19	
09-07-2007 15:00	050	19	25	090	28	31	050	16	22	
09-07-2007 16:00	060	19	24	060	23	33			22	
09-07-2007 17:00	060	19	28	080	22	26	050	14	22	
09-07-2007 18:00	050	16	24	100	30	33	070	22	25	
09-07-2007 19:00	060	20	28	110	30	35	060	18	25	
09-07-2007 20:00	060	23	28	100	32	37	060	19	25	
09-07-2007 21:00	070	24	29	100	30	37	070	21	25	
09-07-2007 22:00	070	26	32				070	22	27	
09-07-2007 23:00	070	22	31	090	37		070	20	26	

NZ Standard Time	Bean Rock AWS				Channel Island				Slipper Island AWS			
	Dir'n	Speed	Gust	MxGst	Dir'n	Speed	Gust	MxGst	Dir'n	Speed	Gust	MxGst
	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots
11-07-2007 00:00	090	39	52	53	120	65	76	83	090	33	52	60
11-07-2007 01:00	090	35		47	120	60	69	82	100	23	49	56
11-07-2007 02:00	110	29		45	120	60	70	75	090	25	50	54
11-07-2007 03:00	110	27		39					100	21	47	54
11-07-2007 04:00	110	25	34	37					110	23	50	50
11-07-2007 05:00	120	24		41					130	24	40	48
11-07-2007 06:00	150	14		32					140	29	39	42
11-07-2007 07:00	140	18		25					150	35	45	45
11-07-2007 08:00	140	18		28					150	32	42	49
11-07-2007 09:00	140	19		27					150	31	41	43
11-07-2007 10:00	150	17		27					130	26	40	42
11-07-2007 11:00	140	22		28					140	30	40	40
11-07-2007 12:00	120	25		34					150	30	41	44
11-07-2007 13:00	130	23		34					140	29	39	43
11-07-2007 14:00	130	25	34	34	140	58		76	150	33	44	50
11-07-2007 15:00	130	23		35					140	29	43	46
11-07-2007 16:00	130	22		34					140	30	44	46
11-07-2007 17:00	120	22		32					140	32	43	44
11-07-2007 18:00	120	24		33					140	30	40	44
11-07-2007 19:00	120	23		32					130	21	34	39
11-07-2007 20:00	140	16		30					130	22	34	38
11-07-2007 21:00	140	15		21					140	24	34	37
11-07-2007 22:00	150	14		23					150	28		38
11-07-2007 23:00	150	15		20					150	31		39

NZ Standard Time	Mokohinau AWS				Tutukaka Harbour AWS				Whangaparaoa AWS				
	Dir'n Speed		Gust	MxGst	Dir'n Speed		Gust	MxGst	Dir'n Speed		Gust	MxGst	
	Deg	T	Knots	Knots	Deg	T	Knots	Knots	Deg	T	Knots	Knots	
12-07-2007 00:00	13	0	46		75	13	0	41	52	53	16	0	17
12-07-2007 01:00	13	0	41	52	60	14	0	39		48	15	0	19
12-07-2007 02:00	12	0	40		55	15	0	35		47	17	0	14
12-07-2007 03:00	14	0	21	31	47	14	0	29	42	49	17	0	18
12-07-2007 04:00	14	0	22	35	35	17	0	29		45	18	0	16
12-07-2007 05:00	14	0	29	38	38	17	0	32		41	18	0	17
12-07-2007 06:00	15	0	28	38	40	18	0	31		41	18	0	16
12-07-2007 07:00	15	0	28	39	39	18	0	29	39	40	19	0	16
12-07-2007 08:00	15	0	21	34		20	0	21	30	38	19	0	17
12-07-2007 09:00						22	0	18		33	19	0	19
12-07-2007 10:00	17	0	18	32	35	19	0	22	33	34	18	0	19
12-07-2007 11:00	16	0	19	33	34	19	0	22	33	38	18	0	18
12-07-2007 12:00	17	0	16	28	34	18	0	28		37	18	0	15
12-07-2007 13:00	15	0	21	32	32	18	0	25		36	17	0	16
12-07-2007 14:00	14	0	21		35	18	0	26	36	36	17	0	15
12-07-2007 15:00	14	0	28		36	19	0	27		36	18	0	15
12-07-2007 16:00	14	0	22	32	36	18	0	25		36	18	0	14
12-07-2007 17:00	15	0	22		34	18	0	22		33	18	0	13
12-07-2007 18:00	14	0	18	27	33	18	0	24		32	18	0	12
12-07-2007 19:00	15	0	21		30	20	0	17		26	17	0	14
12-07-2007 20:00	14	0	21		30	20	0	17		25	17	0	15
12-07-2007 21:00	15	0	18		28	23	0	14		25	17	0	13
12-07-2007 22:00	14	0	17		29	22	0	16		21	18	0	12
12-07-2007 23:00	14	0	17	26	28	22	0	16		22	18	0	10
13-07-2007 00:00						23	0	10		22	17	0	11

NZ Standard Time	Bean Rock AWS			Channel Island			Slipper Island AWS					
	Dir'n	Speed	Gust	MxGst	Dir'n	Speed	Gust	MxGst	Dir'n	Speed	Gust	MxGst
	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots	DegT	Knots	Knots	Knots
12-07-2007 00:00	160	13							150	28	37	38
12-07-2007 01:00	170	15							150	34	43	43
12-07-2007 02:00	170	17							170	27	36	41
12-07-2007 03:00	160	15							180	29	38	38
12-07-2007 04:00	170	19							190	26		38
12-07-2007 05:00	170	16							190	27		34
12-07-2007 06:00	170	17							190	26	38	38
12-07-2007 07:00	170	19							190	27		36
12-07-2007 08:00	190	18							190	24	33	38
12-07-2007 09:00	180	19							200	24		33
12-07-2007 10:00	170	22							190	29	39	39
12-07-2007 11:00	160	19							190	27	36	39
12-07-2007 12:00	150	19							190	28		39
12-07-2007 13:00	140	17							190	29		38
12-07-2007 14:00	160	19							180	28		35
12-07-2007 15:00	150	19							180	24		34
12-07-2007 16:00	160	16							180	26		32
12-07-2007 17:00	160	16							180	26		33
12-07-2007 18:00	160	14							180	26		34
12-07-2007 19:00	160	14		180	12				190	26		35
12-07-2007 20:00	170	11		160	13		21		180	26		35
12-07-2007 21:00	180	7		180	10		25		180	24		32
12-07-2007 22:00	180	10		160	15		22		190	22		32
12-07-2007 23:00	190	7		150	13		22		190	22		31
13-07-2007 00:00	200	5		160	7		18		190	20		28

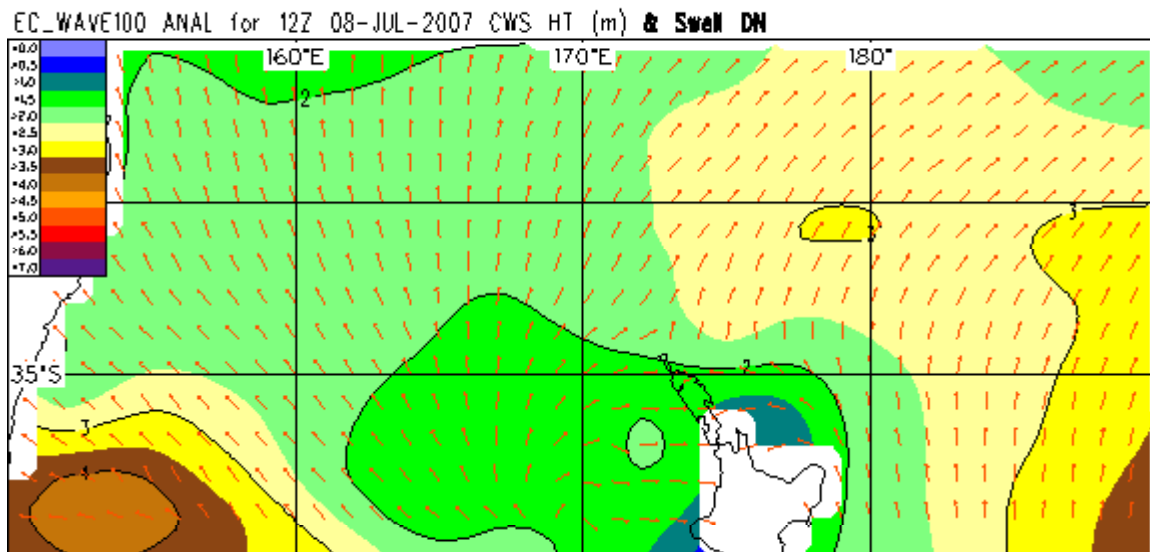
## Combined Wave Analyses from ECMWF numerical model

These are 12 hourly computer generated charts of combined wind wave and swell wave

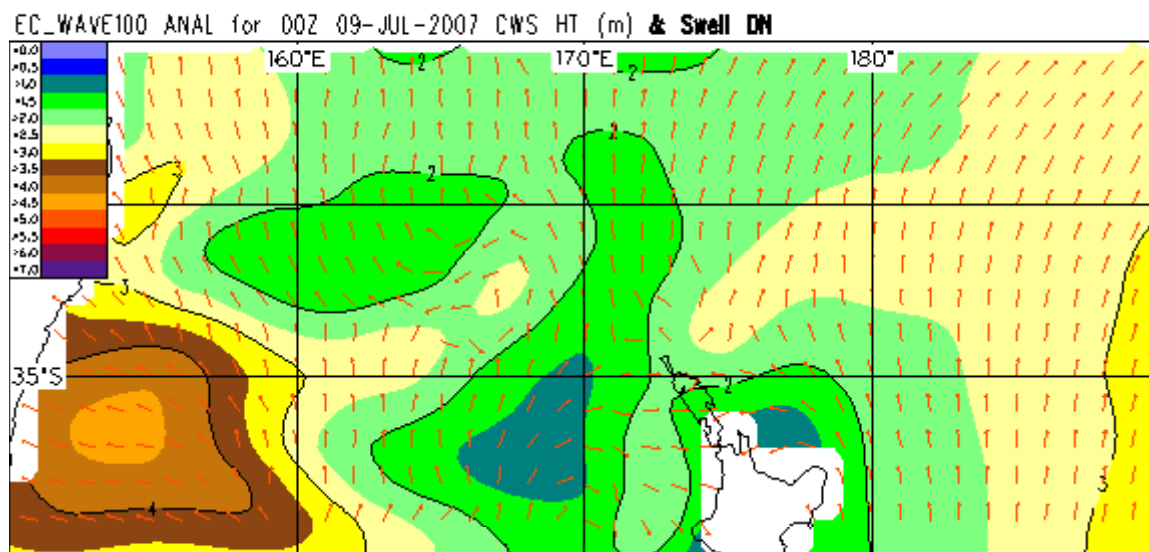
height and direction for the Subtropic area. Times in the charts are UTC, and the captions

are in New Zealand local time.

9 July 2007 00:00

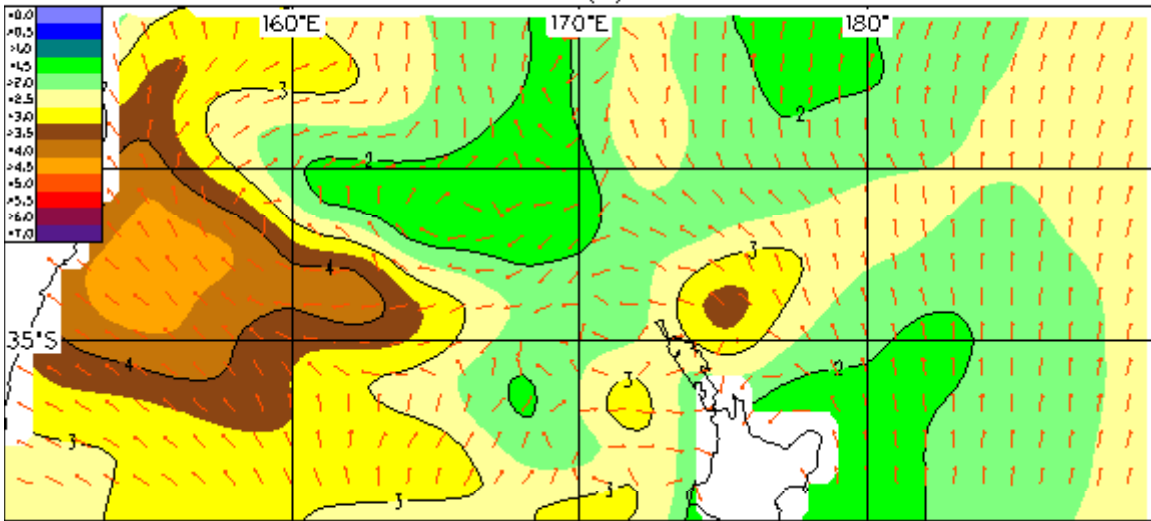


9 July 2007 12:00



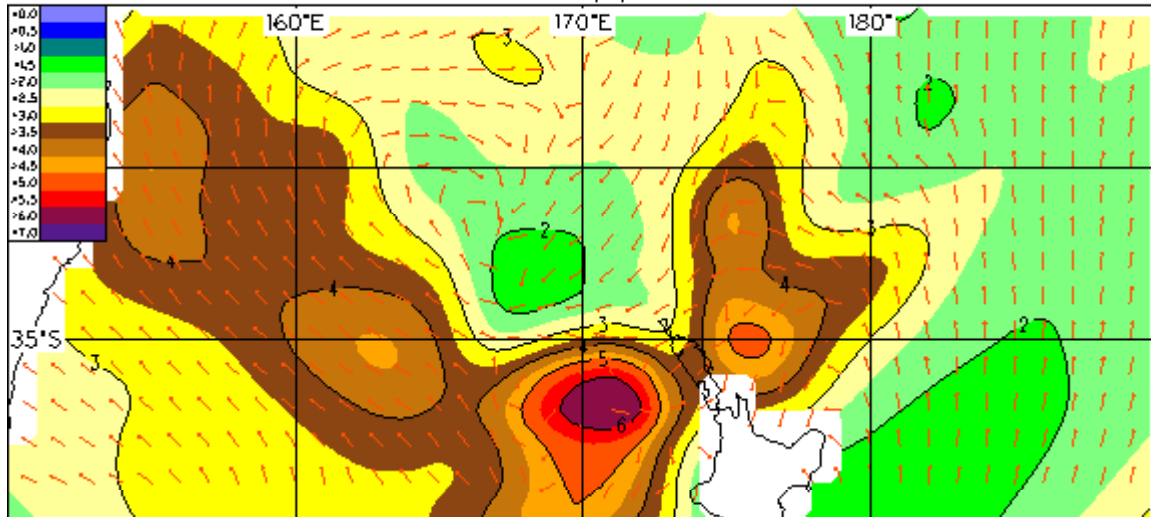
10 July 2007 00:00

EC\_WAVE100 ANAL for 12Z 09-JUL-2007 CWS HT (m) & Swell DN



10 July 2007 12:00

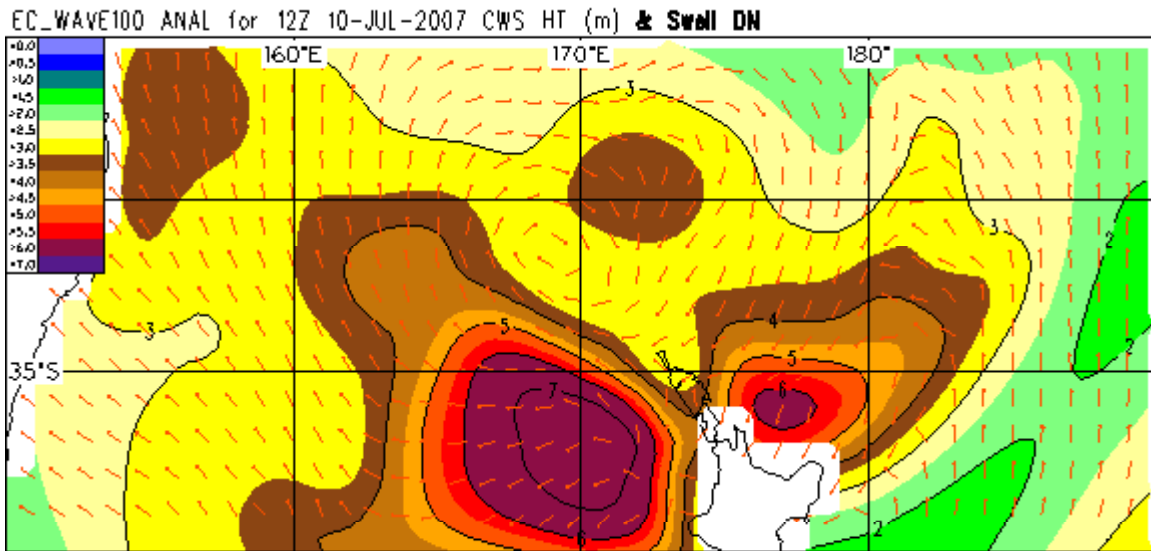
EC\_WAVE100 ANAL for 00Z 10-JUL-2007 CWS HT (m) & Swell DN



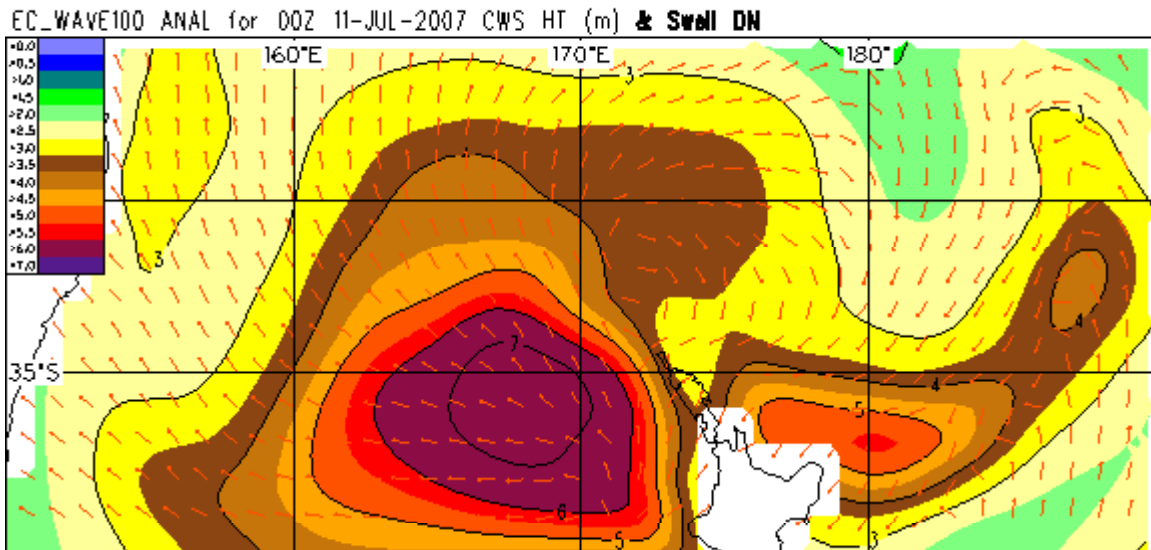
ISO 9001 Certified

Meteorological Service of New Zealand Limited

11 July 2007 00:00



11 July 2007 12:00



ISO 9001 Certified

Meteorological Service of New Zealand Limited

Long-wave monitoring system for Marsden Point -  
monthly report for July 2007

# **Long-Wave Monitoring System for Marsden Point**

## **Monthly Report for July 2007**

**Derek Goring, Mulgor Consulting Ltd**

### **Introduction**

This is the 37<sup>th</sup> of a series of monthly reports on the long-wave monitoring system for Marsden Point that has been commissioned by Silver Fern Shipping Ltd.

### **Progress this Month**

- The storm of 10 July damaged the gasline of the bubbler on Frenchman Island. It was repaired once the storm abated and NIWA personnel were able to land on the island. The instrument was out of action for 47 hours.
- There were no problems with the software this month.

### **July 10 Storm**

The storm that occurred on July 10 caused huge swell and long waves, as illustrated in Figure 1, where for emphasis, the scales are those that have been used in these plots for the last 3 years. Clearly, this storm had wave heights that were much larger than anything that has been measured since records began in 2004. The maximum significant wave height recorded for swell was 5.72 m at 15:00 on July 10. At 19:30, the data from the Triaxys buoy became garbled. At some stage in this time the buoy broke her moorings and washed away. From the record, it is not clear whether the swell had peaked before she washed away or not. The maximum long wave height recorded at Frenchman Island was 1.37 m recorded at 21:00 on July 10. Thereafter, the long waves dropped, so 21:00 is a best estimate for when the storm peaked. This is 6 hours after the measurements from the wave buoy peaked, so it is likely that the measured maximum of 5.72 m for swell was exceeded. At 15:40 on July 11 the gasline in the instrument at Frenchman Island was damaged and recording of long waves stopped. However, by this time, the wave heights had started dropping rapidly and the storm was essentially over.

Statistical analysis reveals that this event had a 7-year return period for both swell and long waves.

A second large event occurred on July 16. Statistical analysis of this event shows that it was equivalent to an annual event (i.e., there is 100% probability that such an event will occur in any year).

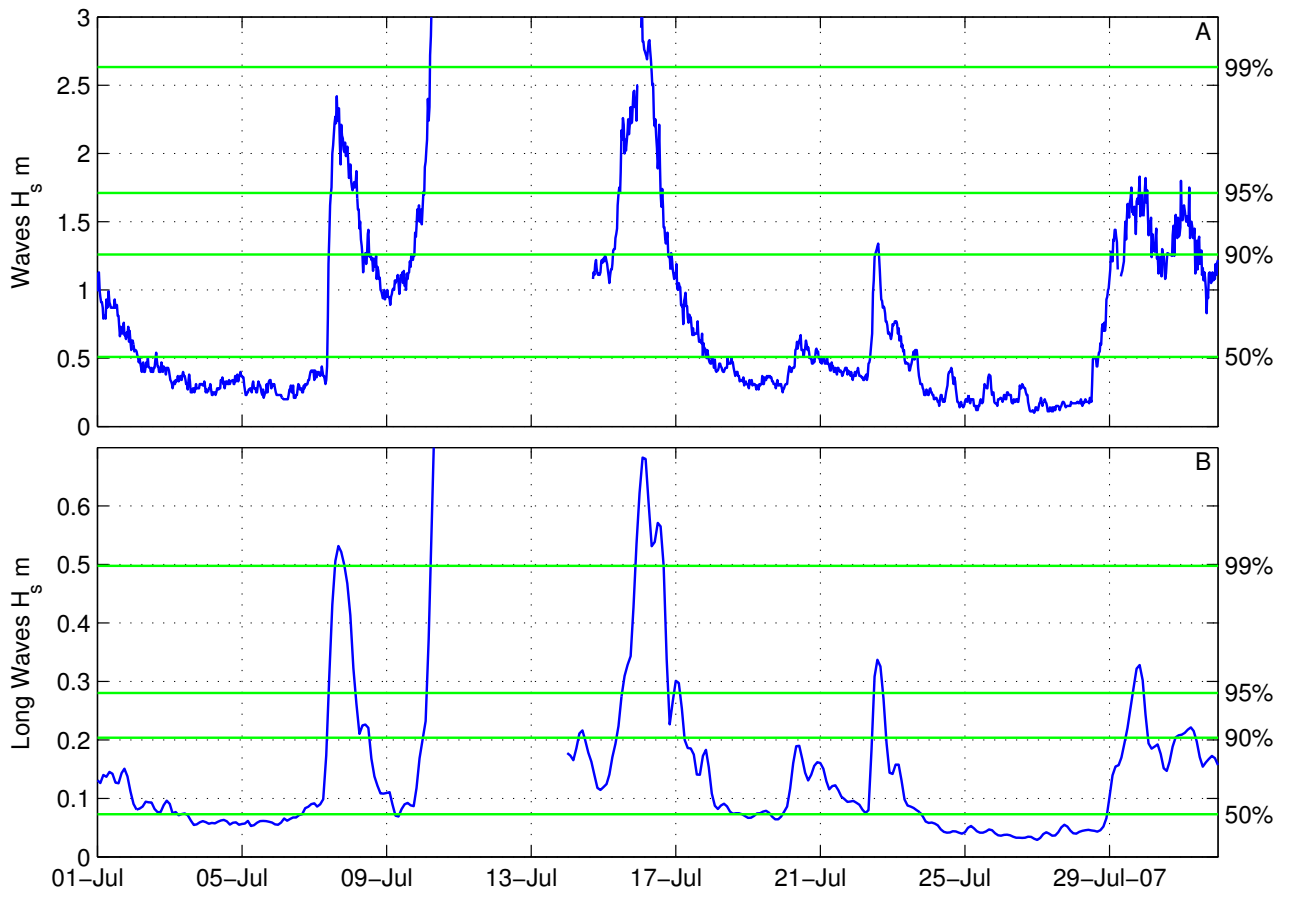


Figure 1. Waves (A) and FIG waves (B) for July 2007, with the long-term percentiles of exceedance.

Heavy weather checklist

Commence frequent checking and recording of meteorological data	
Request frequent WX reports	
Ensure adequate stability	
Reduce free surface effect by pressing up or emptying tanks	
Warn all Heads of Department	
Warn passengers by PA system and make entry in the deck log to that effect	
Extend all stabilisers	
Close all watertight doors	
Close all scuttles and deadlights and protective shutters	
Check all deck equipment securing arrangements ie anchors, lifeboats, mooring ropes (stow below deck or lash) cranes or derricks.	
Check all halyards and standing rigging	
Dump swimming pools	
Close all vulnerable vent covers (Advise Ventilation Officer)	
Sounding pipes secured watertight	
Seal spurling pipes and hawse pipes	
Close all weathertight doors	
Rig rope barriers at doors onto open decks	
Rig hand ropes in foyers	
Engage hand steering	
Reduce speed if necessary	
Make entry in Bridge Logbook as required by DSO BRP 3.17	
Ensure loose items (IE items on shelves in shops, bars etc) are secured	
Close off decks as necessary	
If ship's movement is enhanced in public areas/rooms on upper decks consider closing these areas/rooms to elderly or infirm passengers	
If ship's speed falls below 6 knots make sure all outside discharges are stopped	
Consider rigging hand ropes in rooms with fewer handrails or controlling access to these rooms.	

<p><b>In the event of a heavy roll or list the following should be done</b></p> <ol style="list-style-type: none"><li><b>1. A reassuring broadcast made to passengers and crew explaining roll or list</b></li><li><b>2. Consider altering course or speed or both</b></li><li><b>3. Arrange for teams to check all areas of the ship including passenger and crew cabins for any person that may be injures</b></li><li><b>4. Check for damage</b></li><li><b>5. Sound round</b></li><li><b>6. Secure the VER Disc</b></li><li><b>7. Contact VP Marine/ Fleet Captain/ Director Fleet Services</b></li></ol>	

Amendment to RINa Instructions to Surveyors

**ITS IC3 “Class Renewal Survey” (para 2.2.5), ITS “Hull Annual All Ships” (para HA 1.4) and ITS “Bottom” (para BS.2):**

Structural ventilation ducts, i.e. consisting of two adjacent shell frames, the side shell plating in between and an internal closing plate, may be fitted on any type of ships, but they deserve particular attention on passenger ships, where their positions and routes may render them difficult to access and inspect. Where structural ventilation ducts are fitted, they may have areas prone to accelerated corrosion of both general, local and pitting form often located in the lower end and in those areas where the shell plating is curved, which causes water to be stagnant so favouring corrosion. However, the whole duct may be affected by such corrosion, especially if they are not accessible, as it may have caused that they have not been inspected for long. This fact associated with the age of the ship makes all the structural ventilation ducts areas of great concern, particularly in those sections below the water level, which may lead to water ingress even in the case of small pinholes caused by concentrated corrosion. This phenomenon is further increased if the ducts have not been internally protected by effective coating since construction. The attending surveyor should take the opportunity for an external close-up examination, each time the ship's side shell plating is sand-blasted or hydro-blasted for painting purposes. In general, at each renewal survey starting from the third one, the ship's side shell plating in way of the structural ventilation ducts is to be externally inspected; in addition, thickness measurements from the outside have to be carried out. The measuring pattern in the areas more prone to corrosion (see above) is to be at least equivalent to that of an area affected by substantial corrosion (5 points/sqm). This pattern is to be used in areas BELOW the freeboard deck, while the regular pattern may be used in areas ABOVE the freeboard deck. However, where doubts arise, the regular pattern is to be increased. In addition, at each renewal survey starting from the fifth one, or when any doubt arise following the external examination and/or the thickness measurements, the structural ventilation ducts are to be internally inspected, after a proper de-scaling; thickness measurements from the inside of the ship's side shell plating may be requested, at the attending surveyor's satisfaction.

After the internal survey, the Owner should be generally recommended to apply a suitable protective coating. Following the results of the internal survey, the surveyor may, at his own discretion, recommend annual internal re-inspection. The repairs to be carried out will take account of the extension, location and relevance of the wastage found, and will be carried out as per IACS Recommendation n. 47 (shipbuilding and repair quality standard).