Policy Suitability of Weather and Sea Conditions - Yacht Racing Events

Purpose: Mitigation of damage to boats and injuries to crews participating in organised club yacht racing events.

Procedure

- The Sailing Office is to monitor weather and sea conditions prior to and during club organised yacht racing events.
- In the event of a Bureau of Meteorology issuing a Strong Wind Warning (26 - 33 knots) for the event area, the Sailing Manager, or his representative, must consult with the Principal Race Officer and Commodore or Vice Commodore to ascertain whether it is necessary to shorten courses, postpone, or cancel the racing. This consultation must also consider the combined effects of sea and swell in the event area, number of support vessels and experience of skippers and crews.
- If the event goes ahead the Sailing Office will continue to monitor the weather and sea conditions throughout the duration of the event and will communicate with the Committee / Vessel(s) supporting the event advising on the suitability, or otherwise, of the conditions.
- The Principal Race Officer must, after receiving advice from the Sailing Manager, advise competitors of any deterioration in weather conditions and any subsequent decisions to apply Yachting Australia (YA) Racing Rules of Sailing (RRS) Rule 40 (Sound signal and Flag “Y” - all competitors to wear PFDs), or YA RRS Rule 32 - shortening course or abandoning the event after the start.
- A decision to race on any given day does not relieve any competitor of his or her obligation under the YA RRS Fundamental Rule 4. Attention is also drawn to YA RRS Fundamental Rule 1
- A decision on whether or not to race must consider that wind gusts can be a further 40 percent stronger than the averages provided in a Bureau of Meteorology forecast, and that the maximum wave height may be up to twice that forecast. Annex A contains definitions of Bureau of Meteorology terminology.
- The processes for assessing suitability of weather and sea conditions for cruise and centreboard events are described in the Cruise Management Plan and the Centreboard Race Management Plan.

ANNEX A

Bureau of Meteorology - Terminology

Wind

The wind is a continuous succession of gusts and lulls associated with equally rapid changes of direction over a range which may exceed 30°. The mean wind speed over a period of time is therefore the mean of many gusts and lulls. Usually only the 10 minute mean wind speed is forecast, unless the gusts are expected to be a significant feature. For instance, *Fresh, gusty southwest winds* indicates that the mean wind speed will be between 17 and 21 knots and the mean wind direction will be from the southwest, but that there will also be gusts to speeds significantly higher than the mean.

Gust: A gust is any sudden increase of wind of short duration, usually a few seconds.

Squall: A squall comprises a rather sudden increase of the mean wind speed which lasts for several minutes at least before the mean wind returns to near its previous value. A squall may include many gusts.

Wind descriptions (derived from the Beaufort Wind Scale) Wind speeds are given as the equivalent speed, averaged over 10 minutes at a standard height of 10 metres above open flat ground

Wind Description	Wind Speed (km/h)	Wind Speed (knots)	Description on Land	Description at Sea
Calm	0	0	Smoke rises vertically	Sea like a mirror.
Light winds	19 or less	10 or less	Wind felt on face; leaves rustle; ordinary vanes moved by wind.	Small wavelets, ripples formed but do not break: A glassy appearance maintained.
Moderate winds	20 - 29	11 - 16	Raises dust and loose paper; small branches are moved.	Small waves - becoming longer; fairly frequent white horses.
Fresh winds	30 - 39	17 - 21	Small trees in leaf begin to sway; crested wavelets form on inland water	Moderate waves, taking a more pronounced long form; many white horses are formed - a chance of some spray
Strong winds	40 - 50	22 - 27	Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty.	Large waves begin to form; the white foam crests are more extensive with probably some spray
	51 - 62	28 - 33	Whole trees in motion;	Sea heaps up and white foam from

			inconvenience felt when walking against wind.	breaking waves begins to be blown in streaks along direction of wind.
Gale	63 - 75	34 - 40	Twigs break off trees; progress generally impeded.	Moderately high waves of greater length; edges of crests begin to break into spindrift; foam is blown in well marked streaks along the direction of the wind.
	76 - 87	41 - 47	Slight structural damage occurs -roofing dislodged; larger branches break off.	High waves; dense streaks of foam; crests of waves begin to topple, tumble and roll over; spray may affect visibility.
Storm	88 - 102	48 - 55	Seldom experienced inland; trees uprooted; considerable structural damage.	Very high waves with long overhanging crests; the resulting foam in great patches is blown in dense white streaks; the surface of the sea takes on a white appearance; the tumbling of the sea becomes heavy with visibility affected.
	103-117	56 - 63	Very rarely experienced - widespread damage	Exceptionally high waves; small and medium sized ships occasionally lost from view behind waves; the sea is completely covered with long white patches of foam; the edges of wave crests are blown into froth.
Hurricane	118 or more	64 or more		The air is filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected.

Sea and Swell

Inshore: The coastal waters zone adjacent to the coastline within which the majority of small craft operate and which is usually within 5 to 10 nautical miles of the coastline.

Sea waves: Waves generated by the wind blowing at the time, and in the recent past, in the area of observation.

Swell waves: Waves which have travelled into the area of observation after having been generated by previous winds in other areas. These waves may travel thousands of kilometres from their origin before dying away. There may be swell present even if the wind is calm and there are no 'sea' waves.

Wave period: The average time interval between passages of successive crests (or troughs) of waves.

Wave length: The mean horizontal distance between successive crests (or troughs) of a wave pattern.

Significant Wave Height: The combined height of the sea and the swell experienced on open waters. The height of the combined sea and swell refers to the average wave height of the highest one third of the waves. A lookup table which outlines how the combined sea and swell is calculated is shown below.

Sea

Description	Height (m)	Effect
Calm (glassy)	0	No waves breaking on beach
Calm (rippled)	0 - 0.1	No waves breaking on beach
Smooth	0.1 - 0.5	Slight waves breaking on beach
Slight	0.5 - 1.25	Waves rock buoys and small craft
Moderate	1.25 - 2.5	Sea becoming furrowed
Rough	2.5 - 4	Sea deeply furrowed
Very rough	4-6	Sea much disturbed with rollers having steep fronts
High	6-9	Sea much disturbed with rollers having steep fronts (damage to foreshore)
Very high	9-14	Towering seas
Phenomenal	over 14	Precipitous seas (experienced only in cyclones)

Swell

Description	Wave Length (m)	Period	Wave Height (m)
Low swell of short or average length	0 - 200	Less than 11 sec	0 - 2
Long, low swell	over 200	Greater than 11 sec	0 - 2
Short swell of moderate height	0 - 100	Less than 8 sec	2 - 4

Average swell of moderate height	100 - 200	Greater than 8 sec, less than 11 sec	2 - 4
Long swell of moderate height	over 200	Greater than 11 sec	2 - 4
Short heavy swell	0 - 100	Less than 8 sec	over 4
Average length heavy swell	100 - 200	Greater than 8 sec, less than 11 sec	over 4
Long heavy swell	over 200	Greater than 11 sec	over 4

Total Wave Heights

		SWELL HEIGHT (metres)											
		0	**0.5**	**1.0**	**1.5**	**2.0**	**2.5**	**3.0**	**4.0**	**5.0**	**6.0**	**7.0**	**8.0**
WAVE HEIGHT (metres)	**0.5**	0.5	0.7	1.1	1.6	2.1	2.6	3.0	4.0	5.0	6.0	7.0	8.0
	1.0	1.0	1.2	1.4	1.8	2.2	2.7	3.2	4.1	5.1	6.1	7.1	8.1
	1.5	1.5	1.6	1.8	2.1	2.5	2.9	3.4	4.3	5.2	6.2	7.2	8.1
	2.0	2.0	2.1	2.2	2.5	2.8	3.2	3.6	4.5	5.4	6.3	7.3	8.2
	2.5	2.5	2.6	2.7	2.9	3.2	3.5	3.9	4.7	5.6	6.5	7.4	8.4
	3.0	3.0	3.0	3.2	3.4	3.6	3.9	4.2	5.0	5.8	6.7	7.6	8.5
	4.0	4.0	4.0	4.1	4.3	4.5	4.7	5.0	5.7	6.4	7.2	8.1	8.9
	5.0	5.0	5.0	5.1	5.2	5.4	5.6	5.8	6.4	7.1	7.8	8.6	9.4
	6.0	6.0	6.0	6.1	6.2	6.3	6.5	6.7	7.2	7.8	8.5	9.2	10.0
	7.0	7.0	7.0	7.1	7.2	7.3	7.4	7.6	8.1	8.6	9.2	9.9	10.6
	8.0	8.0	8.0	8.1	8.1	8.2	8.4	8.5	8.9	9.4	10.0	10.6	11.3
	9.0	9.0	9.0	9.1	9.1	9.2	9.3	9.5	9.8	10.3	10.8	11.4	12.0
	10.0	10.0	10.0	10.0	10.1	10.2	10.3	10.4	10.8	11.2	11.7	12.2	12.8

Total Wave Height = $[(\text{Wind Wave Height})^2 + (\text{Swell Wave Height})^2]^{1/2}$

Note: As swell and sea are forecast to nearest 0.5m, total wave height values in the above table should be "rounded" to nearest 0.5m.