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SYDNEY TO HOBART RACE WEATHER WISDOM
by Kenn Batt and Bruce Buckley Bureau of Meteorology, Sydney

DATA ONLY

The question often arises as we head towards the big race at Christmas from a weather strategy point of view: What must I consider as I race to Hobart? This article is an attempt to try to answer this imposing question.

Firstly you must ask yourself: Have I put in the hours studying marine weather in particular? This will help you understand the weather possibilities much better than before. It is very satisfying to know that you got the weather right for the right reasons! It also helps you understand the theory behind severe weather situations. This knowledge increases your ability to bring your vessel safely through nasty weather situations.

Where do I get to find out about the weather? Apart from courses in marine meteorology, there have been a number of weather articles written by Bruce and myself in this very magazine over the past three years. You should not throw these out! Store them away so that you can pull them out from time to time to refresh your memory. Other sailing magazines carry weather articles also. Read them as well. It all helps you. Check out the Bureau's web-site (<http://www.bom.gov.au>) as it does contain some educational material amongst all the other good products. Do a web search under weather or meteorology. You will be amazed how much educational material there is around. Onto the Hobart Race..... We will segment the race track as follows:

Sydney to Gabo Island; Gabo Island to Tasmania; East coast of Tasmania; Tasman Island to Iron Pot (Storm Bay); and lastly the Derwent River.

1. Sydney to Gabo Island: On this part of the race track one must consider the state of the East Australia Current as well as the weather. But firstly the main weather hazards/problems to think about include:

(i) Southerly changes, of which the Southerly Buster is the worst case scenario. Winds behind fronts at this time of the year tend to blow more from the south. We did an article back in the January 1999 issue of this magazine on the southerly change. Be prepared because, as a lot of you

well know, these can be very nasty! Try to get a handle on when the change will arrive (tricky) and what wind speeds will accompany the change. Get the boat snug down early.

(ii) West to southwest changes: If a south to southwest change is forecast, it would pay to be west of the rhumb-line to remain in flatter water.

(iii) Southeast to east winds: In southeast to east winds it would pay to be positioned east of the rhumb-line, especially on the south coast as the wind can get softer close to the coast.

(iv) Pre-frontal troughs: A pre-frontal trough (trough lying east of the cold front) can be a precursor to the formation of a Southerly Buster. It can also bring about the earlier arrival of southerly winds than otherwise expected from plots of the frontal movement. These will later be re-inforced by the passage of the cold front.

(v) Explosive cyclogenesis: (rapid formation of a deep low, commonly known as East Coast Lows) can bring about big problems. The 1993 and 1998 conditions were essentially brought about by such situations. We did an article on this phenomenon back in the May 1997 issue of Australian Sailing.

(vi) Sea breezes: Some of the strongest sea breezes on the east coast of Australia can occur on this part of the race track. These can bring about some very hard running conditions. An article on

sea breezes appeared in the July 1997 issue of this magazine.

(vii) Thunderstorms: Thunderstorms, one of nature's terrors, can be a big problem at this time of the year. Apart from spectacular lightning displays, wind squalls, which are slightly longer-lived wind gusts, can be the big issue here. Savage squalls (up to 60% more than the average wind speed) lasting only minutes and often from directions vastly different to the prevailing direction, can create havoc on sailing yachts. There is also the risk of hail, waterspouts and heavy rain as well!! Be on your toes when any thunderstorm cell is around.

(viii) East Australia Current: We mentioned the East Australia Current above. Apart from the obvious advantages in capturing current moving south with you, whenever the situation arises where surface wind opposes the current, a very nasty seaway can be created. This is where the brains trust on the boat will have to make some serious decisions as to boat positioning especially if a front is expected to pass through the fleet on this part of the race course.

2. Gabo Island to NE Tasmania: This part of the race encompasses the infamous Bass Strait or "The Paddock". This piece of water between the north and south islands of Australia is one of the most changeable stretches of water in the world. Bruce and I wrote an article on this area for the November 1997 issue of this magazine.

(i) The wind direction behind cold fronts is usually more west to southwest, compared to more southerly up the NSW coast.

(ii) Funnelling between the Australian mainland and Tasmania will see wind speeds associated with broad westerly flow at eastern Bass Strait somewhat stronger than those at the western entrance to the Strait. This funnelling effect can be more pronounced in Banks Strait (between Cape Barren Island and NE Tasmania).

(iii) The "Corner Effect" which will see the wind speed enhanced around obstacles (capes, islands, etc) in its path. We see this a lot around Gabo Island during west to southwest flow.

(iv) Since Bass Strait is relatively shallow, a dangerously steep sea will come about very quickly after the onset of strong west to southwest flow.

(v) The pre-frontal trough can also pose problems. In the Strait we have a better chance of observing a roll cloud marking the position of the trough. As with the same feature moving up the NSW coast, this trough will herald gusty/squally stronger winds typically over a 15 to 60 minute period before being followed by sustained strong to gale force westerly winds associated with the passage of a cold front.

(vi) Explosive cyclogenesis (or even a "common" low pressure system passing through Bass Strait) could also be a problem in eastern Bass Strait. The 1993 and 1998 races were associated with explosive cyclogenesis situations.

(vii) Wave conditions in strong westerlies will settle somewhat once one is in the lee of Flinders Island. This can be a blessing for most competitors. The closer you are to the island, the more pronounced the effect will be. This will apply to the speed of the surface wind as well.

(viii) Thunderstorms can still pose problems, but their severity is generally less than those that occur along the NSW coastline.

(ix) At times an eddy of the East Australia Current will flow around Gabo Island and into the northeast part of Bass Strait. This can see unwary yachts being "sucked in" to the Strait, ending up further west of where they would like to be. If you can see the Bass Strait oil rigs, then you are in trouble!

(x) The situation where any swell train opposes a large wind wave train and a strong, south setting current could see very dangerous wave conditions being set up. The 1998 race was one such situation.

3. The East Coast of Tasmania: There are two positions on the race track that one should stick to religiously. The first is stay at least 30 nm off Eddystone Point and the second, stay at least 15

nm off Maria Island. Inside of these distances, wind conditions can be very flukey (apart from wind directions from the south through the east to the north). It is hard to do at times but do it! Complex tidal and ocean currents can draw yachts in being closer than they would like to be. The navigator should be particularly vigilant.

(i) Under broad westerly (NW to SW) wind flow, the east coast of Tasmania, say within 30 nm of the coast, can come under the influence of a lee trough. This will lead to the situation where winds to the north of Freycinet Peninsula will not be markedly affected, apart from a slight decrease in wind speed, but to the south of the Freycinet, winds will start off as light to moderate NE. As yachts sail south, the wind direction will veer to the E and then SE. When yachts are close to Tasman Island the wind direction will veer quickly to the SSW and the speed can increase quite dramatically! By utilising the 30/15 rule, one will be out of the worst part of the lee trough. You would have to be at least 50-60 nm off the coast to be sailing in the true wind flow. This is just a little too far off under most circumstances unless you are going for the SE "blinder". This is the situation where you might have westerly winds going very quickly through the south to the southeast following the passage of a cold front. The associated low pressure system is generally close to southern Tasmania. Most of the time however, fronts are embedded in a very persistent west/southwest flow.

(ii) When yachts are at Tasman Island, wind speeds can increase and decrease (gusts/lulls) quite rapidly and the direction can also jump around all over the shop. Be prepared!!

(iii) You can generally go very close to Tasman Island, apart from its southern extremity, where there is a reef!

(iv) As you approach Tasman Island under west through to southerly flow, it generally pays to lay inside of the Hippolyte (at least between the Little Hippolyte and Cape Hauy). This firstly keeps you out of current that is generally setting northeastwards around Tasman Island and in flatter water. Secondly, on starboard tack you can get a nice lift along Munroe Bight if you are fairly close in. There is a definite line of pressure on the water that you have to be inside of to gain the maximum advantage.

(v) Thunderstorms could also pose problems with the passage of a cold front.

(vi) Intense Low pressure systems passing very close to southern Tasmania could see gale to storm force wind conditions prevailing through the southern part of the race track.

4. Tasman Island to the Iron Pot (Storm Bay): Once you get around Tasman Island and clear away to the west, wind conditions will generally ease.

(i) Under most conditions, one would straightline it from Tasman Island to Cape Raoul, but giving the Raoul a slightly wide berth (about 1nm off). The only situation that you would want to be slightly north of this rhumb-line and closer to the Raoul would be in smooth water and/or under sea breeze conditions. In the sea breeze situation, the NE ocean sea breeze can get squeezed between Tasman Island and Cape Pillar (Tasman Passage) and slightly more pressure can result just to the north of the rhumb-line.

(ii) Under a northwesterly gradient windflow, Storm Bay will be in a wind shadow created by the Central Plateau. Similar to the east coast under a broad westerly flow, variable wind conditions can be experienced.

your course.

(v) Storm Bay can live up to its name!!!

5. Iron Pot to the Finish (the dreaded Derwent River): Definitely a place that you can love or hate. It all depends on what time of the day you reach the Derwent!

(i) Under most regimes the River "shuts down" wind-wise from about 2200 hours local and does not "open" until 0600 to 0700 hr.

(ii) Once you reach the Iron Pot (which you leave to port by about 100m) it generally pays to work the eastern side of the river (staying about 100m off the headlands), especially at night with an ebb tide and after heavy rain. Under situations where heavy rain has fallen and light winds prevail, you may have to scallop in and out of the bays. But watch the headlands, not too close please!

(iii) It generally doesn't pay to work the western side of the river, especially from White Rock to the John Garrow Light (which you leave to starboard)

(iv) Under broad westerly flow, Mt Wellington can induce standing wave and rotor activity. Standing wave activity will generally be felt the most north of the Garrow Light and can lead to very flukey winds from around the middle of the river westwards. Slightly stronger westerly winds will occur towards the eastern shore. Rotor activity can lead to light southeast to easterly winds being generated over much of the river, especially north of the Garrow Light.

(v) The sea breeze during the day is mostly a southeaster and will draw more easterly out of the bays along the eastern side of the river. Under this situation, more pressure will occur eastwards of a line White Rock to the Finish. At times the east coast northeast seabreeze may break through to the Derwent.

Now for some general words of wisdom.

* Try to listen to all broadcast weather forecast sources. That crucial wind warning may be broadcast well before you get to hear about it from the official race schedule.

* The Bureau will issue wind warnings according to the following:

Strong wind warning: 10 minute average wind speeds from 25 to 33 knots

Gale warning: 10 minute average wind speeds from 34 to 47 knots

Storm warning: 10 minute average wind speeds 48 knots or more.

* Wind speed and direction quoted in warnings, forecasts and observations are averages. Wind gusts may be up to 40% more than average.

* Wave heights in warnings, forecasts and observations are significant wave heights (Average height of the highest one third of waves in a wave train). Maximum wave heights can be double or more the significant wave height.

* Keep that weather eye open at all times