

SENIOR CONSTABLE UPSTON

Q1 This is an electronic record of interview between Senior Constable David Upston on Saturday, the 3rd of the 7th, 1999, and Charles Roger Badham at the New South Wales Water Police, Sydney. And also present is Detective Senior Constable Gray from Bega Detectives who is seated to my immediate right. The time on my watch is now 10.00am. And Roger, for the purpose of the interview, could you please state your full name?

A Charles Roger Badham.

Q2 And you prefer to be known as Roger.

A That's correct.

Q3 And your date of birth?

A 9th of the 11th, 1948.

Q4 And your address?

A 60 Buttonshore Drive, Coledale.

Q5 O.K. Roger, prior to the interview, Detective Senior Constable Gray and I explained to you that we are making inquiries into the 1998 Sydney to Hobart Yacht Race. And in particular, your involvement with forecasting weather predictions for a series of yachts that were participated in the race. Is that correct?

A That's right.

Q6 And did you give any other predictions to anyone else that was involved in the 1998 Sydney to Hobart Yacht Race apart from a series of yachtsman?

A No, no, no.

Q7 So, your sole aim as far as the 1998 Sydney to Hobart

Yacht Race was to give weather predictions for participants?

A Yeah. I, I do a package which is a commercial package, it costs \$100 and I did it for, I think there were 22 yachts that bought the package. Some of them just take it by email and some take it by fax. I never see them, I just send it out on the morning and others, I go down to the club in the morning and you tend to spend more time with a couple of the yachts, usually the bigger fancy yachts that, who have navigators that I work with over different campaigns and so, on the morning of the event, I probably spent a very disproportionate amount of time with just a few of the boats and the other ones just got a copy of what it was. I mean, some just want a copy of, of what I've got and take it away and whatever. The boats that I probably spent most time with were Sayonara, Wild Thing and AMRO, I can't think of the one with Ian Murray on it, and B-52, I spent time with, with those guys as well.

Q8 All right. And what, what's your current occupation?

A I'm a meteorologist.

Q9 And you're self employed?

A Yeah. Yeah, I run a company called Marine Weather Services.

Q10 O.K. And where are they based?

A We're just based at Coledale.

Q11 O.K. And what are your experiences and your qualifications in obtaining a meteorologist status?

A Well, I have a PHD in meteorology and I've worked for 25 years as a consultant meteorologist and in the last 20 years doing pretty much nothing but yachting worldwide which includes the America's Cup around, around the BOC's, major yachting races all around the world.

Q12 Right. And is it a fact that you have been employed on a number of occasions for other overseas syndicates such as America's Cup and Admiral's Cup challenges?

A Yeah, yeah, yeah. I, I do the, I've been doing the Admiral's Cup for many years. I worked for the Italians, have worked for the Italians for the last six Admiral's Cups. The Whitbread, I worked for the winning challenge last time out of Sweden. The time before that I worked for Dennis Connor, America's Cup, I've worked for the Italians, I worked for the Americans and I worked for the Australians in different events.

Q13 So, it would be fair to say through your experiences and your knowledge, that you are well known for sailing, for weather for predicting weather?

A Yeah. There's, there's not many, probably, that are, I mean, that's my full time profession in terms of yachting meteorology and there would only be another two or three people in the world that do that. And I'd be the only one in Australia, I think.

Q14 O.K. Do you sail yourself?

A I used to sail. I sailed skiffs when I was young. I

don't have a boat these days. I sail by default, I sail when I go to work for people.

Q15 O.K. O.K. So, you're out on the water a lot of the time when you're not doing predictions in the office?

A No. I'm either, these days, in front of the computer actually preparing or doing predictions or I'm, yeah, if I'm, if I'm on location like, with America's Cup and or a Whitbread or whatever, then you're spending a certain amount of time on the boat for people or, particularly in America's cup, I probably spend half a year or a year out on the water everyday in maybe a chase boat or a rubber boat of some sort, collecting data, talking over the side to the guys on the boat, telling them what they should be doing in terms of weather, not, not how they should sail the boat, they're a lot better than I am.

Q16 M'mm.

A But just talking to them about, about weather and what they should be looking for in the next 10 minutes or the next 10 hours or whatever the time period of the race is.

Q17 O.K. And in regards to the Sydney to Hobart particular series of races, how long have you been predicting weather conditions for those participants?

A Well, I'd say I've probably done every race, done some forecast for every race since the late '70s and I forecast, I've done a package, a commercial package now, I think for about, I'm not even sure exactly but

probably something like, about 12, 15 years, I think, as a commercial package. Before that it was mainly just, I was just employed by different teams or -

Q18 O.K. Right. I show you document here that was given to me by Steve Kemp from Port Lincoln in South Australia and it's, it's headed, "Sydney to Hobart, 1998. Weather notes by Roger Badham". You're familiar with that obviously?

A Yeah. They're the notes I did on that morning, yeah.

Q19 All right. Can you go through that, in brief, page by page and just explain what you've said in the report?

A Well, this, I mean, obviously this was done before the start of the race and I, I, that's just my standard package where I, I give an overview of the situation and just give a quick summary of how I think the next three or four days is gonna behave and then a very, a very cryptic summary of each day, going from the Saturday, the 26th and the 27th, 28th, 29, 30. And then a more detailed thing of each day, going Saturday, a page on each day, Saturday, Sunday, Monday, Tuesday, and then a little bit on the tide and the current. Then some notes about the different coastal places where they might pick up winds, a little to how to interpret those winds, where to get the, what time to get your fax charts, your radio forecast and then usually at the back of that, then there'd be also a series of weather maps, different charts from both the Bureau of Meteorology and some of the overseas models,

just a set of isobars and wind vectors.

Q20 O.K. I'll come back to those shortly. You mentioned weather models. Now, can you explain what you mean by weather models?

A Well, these are numerical finite element models run by different weather offices around the world. These are quite complex bits of numerical code that forecast the weather ahead in time. Generally, the, the big models these days are global models and most of the major countries around the world run a global model, Australian runs one, Japan, America runs quite a number of operational ones, the UK, the Europeans, the Germans, they all have these global models. And the output from these models is available to all the different weather offices around the world by the WMO agreement and the interchange of information. As a consultant, private person, I don't have the, the ability to just tap into those models. There are some that you can tap into freely because the information is available freely. The US comes to mind there, where their information is free and is available to anyone that wants to access it. Other countries then generally have some sort of commercial arrangement if you want to come in from, a person like myself, the, the various weather officers get them because they're contributing in terms of observations that go into those models so therefore they get the output from them. But a person like myself has to buy them, so I,

I subscribe to the Bureau of Meteorology ones and I subscribe to the, the ones from European country, but I don't, for instance, subscribe, I don't pay for the, the UK model. It's fairly expensive to buy and I, I buy it for some specific events that I do but on a regular basis I don't, don't usually purchase it. And there are a number of models around but the, the big players are the UK met office, the American MRF, the European Nation PC and probably then the, the Australians, the Japanese, the Germans. They'd be the big, the big players and those models are generally available, as I say, in the different offices or, you can always subscribe to them.

Q21 All right.

A And I use the output of those models for different things. As I say, I, the US model is, is reasonably freely available, although I do subscribe to a service where I get a better product from it and I used that a fair bit. It's, it's particularly good leading up. It does tend to sometimes give you, it, it, it's, it's run further ahead in time than most of the other models. It, it, it runs operationally at 12 to 14 days every day, whereas most of the other models only run out to seven days. Mind you, the last few days of that's pretty much in fairyland most of time. It's, it, it is operationally run for a longer period and I tend to use that model a fair bit as I use the Australian one and the European one and in the lead-up to the Hobart,

there were all pretty different. So, in other words, the models weren't, if, if, if they're not, if there's no consensus between the models, then you're, you're, you're on your metal knowing that if the models can't agree, that there's obviously some degree of difficulty coming up here and, and there's, there's obviously a fair bit of uncertainty in terms of how things are going to, going to develop. The thing, in this instance, was a cold upper trough which was coming across from the Great Australian Bite, was going to develop into a low pressure system. There was no doubt it was going to develop into a low, it had all the hallmarks 48 hours beforehand of, of, of a, of a low going to develop. The big question was where and, and how intense was it going to be when it did it. And the models were having different bites of this. The model which with hindsight did it best was the US model. And it, right from as early as the 22nd of the December, December and certainly on the 23rd and 24th of December, it had the low being fairly intense and had it just east of Bass Strait, pretty much where it was, where it actually formed. Just, not perfectly, but it had it, it had it by far the best in advance. And while the European model, which is often considered to be the world leader, had it not as intense and further down off the Tasmanian coast, as did the Australian model. So, there was, there was no absolute consensus as to where this low was gunna develop prior to the

event.

Q22 All right. I show you a document which is the Bureau of Meteorology Preliminary Report on Meteorological Aspects of the 1998 Sydney to Hobart Yacht Race. You're familiar with this document?

A Yeah, I've seen it, yeah.

Q23 O.K. On attachment three, it gives a series of models and it continues also on the following page. Basically, what you've just explained to us now, prior to me showing you this page, what can you tell me about this spreadsheet document here?

A Well, it's, it's saying pretty much what I, what I just suggested and that was that the, you know, that, that they had available to them the European model, the Japanese model, the Australian model, the LAFS, the UK met office model. Now, they've got the US aviation model which is actually only a three day run of their global model. That's only the short term. See the, the, the US model is actually run operationally four times a day. It's actually reserved, the reason why they run it four times a day, as with the UK, because those two models operationally run all the, the, they run what they call the WAF system, which is the World Area Forecast system for aviation and so, these two models are run operationally every, every six hours and they do all the forecasting for the aviation, upper air particularly upper air around, around the world. They cut the world up into sections and some of

the output comes from that model and some comes from that model. So, this aviation model is, is, is, but it's only a three day model and it runs every six hours. The longer term US one is the one they call the MRF, the Medium Range Forecast model. And it only runs once a day but it goes, as I said before, it runs out to 12 and 14 days ahead and they don't seem to make reference to that, which is a pity because I know they get it but it's not there.

Q24 O.K.

A And the other one, the LAFS, that's a local area model and these, these from the University of New South Wales and these are LAFS, these are short term models. These tend to be longer term ones, these are short term ones.

Q25 What, what can you explain, and is it the case that in, in some of the boxes there under the various model headings, it's got "not available".

A Well, that's because, you see, this is only a three day model and that's only a, LAFS is 48 hours and that's probably 36 hours and that's probably 24 hours. So, in other words, looking, this is looking 120 hours ahead, so these ones aren't, aren't valid at that time. So, 96, 72 hours, 60 hours ahead, 48 hours ahead, 46 hours ahead. So, this, this is getting closer and closer to the event - - -

Q26 Yeah.

A - - - as to how detailed it going to be. So, prior to the, prior to the start of the race, that's on,

I presume it's probably running at about this one, probably somewhere here.

Q27 That, does this, to you, this plus 48, that indicates 48 hours ahead of the 27th?

A No. No, that's, that's, that's 48 hours ahead to that time.

Q28 To that time?

A Yeah.

Q29 Right.

A Yeah. So, that's when, that's when the, the model would have been based on the 25th at 12.00 Zulu which was Christmas night, early Boxing Day morning. So, that's the, they're, they're the models that they certainly had available at that particular time which would have been prior to the start. They were, they were initialised, if you like, or the model was run at 12 zulu on the Christmas night which was 11 o'clock on Christmas night and the output from that would have been available early on Boxing Day morning. And that's what the forecasts would have been based on, well, some forecasts at that time. I mean, when I do my set of notes, I'm doing them on Christmas night, you know, I sit down, but you've been doing them for several days before that and getting the thing together and, and you're trying to use the latest output but you're taking into account what's been operationally available for the last couple of days in putting that thing together. I mean, in, in my notes, you know, I, the

whole thing was this low pressure system, you know, where was it going to develop? And, and, you know, they had, a low 993, 400 kilometres south-east of Gabo, that's, this is from the Bureau on the ECMFW, it's the European model. Japanese, 400 kilometres east of Hobart, 400 kilometres east of Flinders Island, complex low east of Tasmania, low 250 kilometres east of Hobart, low 998, southern Tasman, not available, not available.

Q30 So, that's, what you've just been reading out then is, is predictions going across the scale - - -

A Yeah, of, of, of, of, of where - - -

Q30 - - - across the, the chart - - -

A - - - of where this low was going to be.

Q31 Right.

A I've found, you know, generally in the lead-up to the Hobart, that the US model had been much more accurate in terms of the intensity and location of the low compared to the other models. The other models all wanted to have the low further away. So, it was a great dilemma. I mean, you know, in terms of what you go for in the morning and on the morning, you know, there was, what, how do you treat this low pressure system? Where is it actually going to form? And, I mean, I've got here, "Sunday, 27th, high pressure must weight over the bite while low pressure system spins up south-east of Tassie", south-east of Tassie, right. The high will reach along the Victorian coast, north

Bass Strait around the New South Wales, but if the low really spins up, then it will become a cyclonic circulation and it will dominate Bass Strait on the New South Wales Coast". Now, this was the, the big, the big crunch here in terms of where was the low going to actually develop. And on the, on the morning of the, of the race, when I wrote these notes very early in the, in the, like 3.00am and 4.00am and 5.00am on the morning of the start, I finally went with the Australian model. I thought it was a good, I actually went with the LAFS one, this one here because I thought it was good compromise between the US one which seemed very bullish about trying to spin this low up too intensely and the, the EC model which was very relaxed about it and had it long, long way to the south-east, whereas the, the Australian one seemed to be a, sort of a middle ground. And so I finally, the, the actual forecast that I went for which was just a pretty standard sort of forecast that went, went for, sort of, you know, 30 to 40 knot winds from the south-west, was on the LAFS model. And I, and I, I say in the notes somewhere here that I, you know, that I have, I've gone with the LAFS because I think it was the best one. I like the Bureau's LAFS, although it only goes out 48 hours, the aviation has nice winds but it keeps the low due east of Tassie, it keeps the low due east of Tassie, as does the GASP model.

Q32 Now, this, this aviation model - - -

A Yeah.

Q32 - - - is that the US aviation model?

A That's, that's the US aviation, yeah.

Q33 Right.

A That was the one that was a that was, it had more circulation and was developing, I think, a little bit more intensely. I mean, in hindsight it was right.

Q34 You, you mentioned the, the other US model - - -

A Yeah.

Q34 - - - which runs over a longer period of time.

A Yeah.

Q35 Out of all of the different models, what you're saying now and in hindsight of course, what was, do you feel, was right on the mark?

A Well, well in advance, definitely the US model. I mean - - -

Q36 US Aviation?

A No.

Q37 US - - -

A USMRF, the, the long term US one.

Q38 Right.

A Which is only run once a day. I mean, it, it was, it was showing a much better depiction of the low pressure system somewhere just east of Flinders Island to be quite intense. And it was showing that on the, on the morning of the 22nd of December and the 23rd of December. It, it, it often does this, it does tend to

spin lows up, sometimes a little bit too freely but it does give you a good indication that, hey, you know, there's a fair amount of vorticity going on here and this low may in fact, you know, develop quite, quite well. And sometimes even five, 10 days in advance, this, this model will show a low developing and then the next day it will drop it and then the next day it will bring it back and then the next day it will drop it and you're just, you got to decide all the time, you know. And like, am I gunna believe this or am I not going to believe it? And you, you've got to run with what you think is, is the best option at the time. So, yeah, so in, in, well in advance, definitely the US model. On the morning of the event, I don't think any of the morning, any of the models were really very good but, of course, after the start of the race then there was a new run of, particularly the, both the US one and also the Australian one, the LAFS model, and they were, they were initialised on the morning of the event, on the morning of the start, that's on Boxing Day morning at 11.00am. And they became available during that Saturday afternoon and they then showed, all of them showed that this low was gunna be quite intense and somewhere in eastern Bass Strait, you know. They were still bearing, was it going to be just east of Flinders, just north of Flinders, whatever. But it was going to be up there, not off Tasmania, not south-east of Tasmania, up there. So, immediately from then, and

it was on that, that run that the weather bureau then brought out the gale warning, the storm warning. And, you know, because the thing was coming, I mean, it was then within 24 hours of the thing actually developing, so the whole thing was the actual upper trough with the cold air andvection coming around the side of it. It was actually occurring, it was actually getting close to Tasmania at that time. So, you know, it was, it was starting to get near reality whether the thing was actually going to start to form. So, the models were then getting a better handle on it and sure, you know, it was, it was definitely on from there.

Q39 What, what were the consequences of, of this happening, that you could see in lieu of what currents were happening and for the information that you had at hand? As soon as you received that final information on the day of the race?

A Well, it was certainly, it was, it was, one, it was going to be a much nastier situation than I'd, than I'd painted in both my notes or, or was available to any of the yachtsmen. It was obviously going to be reasonably nasty and, you know, I, on that Saturday afternoon I, I, I phoned Rob Mundall because, you know, he's a yachting journo and he uses me a lot, he wants to know always in advance, so he's, we've known each other for 20 years and he always just rings me and says, you know, "What's happening, what's happening?". He rang, he had rung me on the morning of the event when I was

around at the CYC, talking to different yachts and I said, "Yeah, it's gunna blow a fair bit but not too bad", you know. So, I, I rang him that Saturday afternoon and said, hey, you know, "This is looking pretty crook and it's, it's obviously going to be a, a fairly nasty low and it's gunna develop particularly tomorrow afternoon/tomorrow night and the winds look like definitely being well up over 50 and it's going to happen right, somewhere in Bass Strait where there's a lot of current". That's all I could say at that stage. And I also tried to phone a couple of the yachts. I don't, I've never phoned a yacht before in my life. I phoned Wild Thing, was one of the yachts but, when I say phoned them, they have mobiles. All their mobiles were off.

A Yeah.

Q40 So, you just left a message on the thing. But I, I mean, you shouldn't, you should never call a yacht. I've never called a yacht during a race. I mean, it's just not something you'd do. And if, if someone had answered on the yacht I would have just said, hey, look, this looks particularly bad. And therefore the only reason I would be phoning would be to say, this is a particularly nasty situation and you just should be aware of it. I, I, no way I'd ever say stop racing or anything.

A Yeah, yeah.

Q41 It's, it's, it's just, it's just something that you'd,

that I thought that, that if those guys had their mobiles on I think I, I, I would have liked to have alerted them to it. But at that stage, I mean, I still didn't foresee that it was going to be as nasty as it was but I still thought it was gunna be nasty. I mean, I forecast during the '84 storm which was a particularly nasty one off Jarvis Bay with very, very nasty seas, and also in '93. And I figured this was going to be of that sort of comparable magnitude, you know, where a lot of yachts were pulled out of the race from, just from, from waves and damage and whatever.

Q42 Right. In fact a life was lost in one of those years too, is that not correct?

A Yeah. I think in '84, yeah, yeah.

Q43 Just, just on that point where you've spoke about phoning a couple of the yachts to let them, to tell them something. Under your understanding of the race rules, would that have been a breach under, under a rule where outside help would have been sought.

Q44 Yeah. In my opinion it would be, yes. I mean, there's, there's a grey area there. As soon as, as soon as the weather becomes extreme then basically, they can seek information or, you know, information can be got to them for the safety of the craft. But that, that wasn't, I, I, I didn't foresee that at the time. I just thought this is going to be pretty nasty, there's a couple of boats here that I've been working with quite a bit, they're brand new boats, they

probably don't want to break them severely and they should be aware of the fact that what they're going into is probably gonna be at least a hundred percent worse than what I'd painted six hours earlier and they should be aware that it's gonna be particularly nasty. Now, how nasty, I wasn't sure, but it was gonna be nasty and therefore they should go into it with their eyes open and, and know to take the foot off when, when, when the time occurs. Now, I mean, these guys are experienced yachtsman and therefore they, they generally know all that anyway but it's sometimes nice to have that advice.

Q45 After you established in your own mind that something severe was going to happen, did you have a, did you feel as though you had a moral obligation to, to ring them and let them know that, probably that you, in fact feared maybe for their safety?

A Well, I, I, I did. I mean, if, if, if there was, if on that afternoon, particularly later in the afternoon, if there'd been some way that I could have contacted the yachts that I particularly, you know, probably spent some time with, I, I would have liked to have contacted them and just said, look, you know, this is going to be much worse than what we thought. But, as I say, I, what you think is much worse and what actually happened, I mean, and it still depended where they were in, in relation to the low and the way the thing developed because obviously where, where the actual

damage occurred and, and where the tragedy's occurred and the yachts got into severe trouble was only in one very small area of the whole race plan. So, you know, and that was, that was reasonably obvious from particularly later Saturday, where that was gunna occur. And, and I conveyed that message to, to Mundall, I remember talking to him that Saturday night and then again on the Sunday morning, saying that, you know, particular in that little area where currents were going to be directly opposing wind and the sea, there was, there was gunna be some, some, some particularly nasty conditions and that was probably where, you know, yachts, yachts would break and, you know, there'd be a lot of damage and a lot of withdrawals.

Q46 O.K. You're, you're familiar with that area with the currents and the winds, the wind waves that are generated in that particular area?

A Sure.

Q47 And you saw what you felt was going to happen, did you inform the CYCA or, did you inform the CYCA of, of what you thought was going to happen?

A Not at all. I mean, I, I, when I, I suppose you don't see in, in advance it was gunna be that bad and it's, it's not my role to, I mean, it's, to, to talk to the CYC. I mean, I, I, I couldn't even imagine even, even right up and until the, the really, the yachts, some of the yachts found it in that particular location, that

is was gunna be quite that bad. And I would have, I imagined that the CYC probably had lines of communication available between the weather bureau who was doing the forecasting and themselves. So, I would, I would imagine that the race director was probably, you know, on top of what was actually occurring. I mean, I, I did the forecasting for the race back in the last '80s and early '90s and I used to talk to the director of the race, Greg Halls or Mike Fletcher or those guys, you know, if there was anything that was untoward and I would imagine that the same lines of communication were, were, were there. I think, in hindsight, they probably weren't there but I'm not sure, I still don't

Q48 Do you know if, if anyone that you spoke to may have informed the CYCA?

A Well, the only person that I spoke to really on, from late Saturday afternoon through until Sunday morning was Rob Mundall. I spoke to him probably three times, I think, or maybe four, a couple of times on the Saturday and a couple of times on the Sunday and each time it was to basically update the situation in terms of where this low was gunna develop, how intense it was gunna be, what the likely winds and waves were. So, and I don't, I don't know what he was, if he was, he was down there, he, he physically moved locations at that time 'cause he flew down to Hobart early Sunday morning.

Q49 Right. You mentioned earlier about speaking to, when you giving predictions to the CYCA and you spoke to the previous race director, Mr Greg Halls, was there ever an occasion where Halls made a decision on weather conditions that they informed the race as a whole?

A No, there wasn't. I mean, the, the period where I did the forecasting, I think it was just typical weather, you know, a couple of fronts. Always with a front you get a few retirements, just, I mean, every front was capable of 30 or 35 knots and a few nasty waves and you usually get someone's yacht that's gunna break something or pull out. There was never any, any severe weather. It was, it was in that particular era was when I was actually forecasting, I was forecasting and sending the forecast to the relay vessel by fax, satfax, it was in the early days of satfax and we were having a lot of trouble just physically trying to send the information. It was always a bit dodgy. The guys on the relay vessel were Lou Carter and Mike Brown and they're still, still the same sort of guys there. They're very good guys. And a lot of the time you'd have a lot of trouble getting the information by fax 'cause the fax over at, satfax was very dodgy, still dodgy, dodgier then. And I used to have to call them, either patch through a connection via HF or just on some sort of communication. I don't think it was a mobile phone. Whatever it was was patched through and I'd, I'd often just actually talk to them direct and

give them the latest bit of the forecast or give them some observations from maybe a few of the stations or whatever and tell them, you know, that there's a front coming and, and this observation here, you can have a look at it, see what Wilsons Promontory's doing or see what Eddystone Point's doing or whatever. So, there was a little bit of, in that particular era, it was probably, the communications weren't very good, but it was very much direct from me to the relay vessel or me to Greg Halls or whatever. So, I mean, there was, it was very much one on one.

Q50 Do you, do you have any knowledge that there may have been a lack of communication line between this year's race director and, and any possible weather

A No. I have, I have no knowledge at all but I, I, I suspect that, that in fact the communications between, you know, the, the person at the sharp end of, at the weather bureau, probably didn't have the facility or know or whatever to talk directly to the people at the, at the, at the CYC. But I, I don't know that but I, I suspect that the, that the channels of communication weren't there as a, weren't in place, I suspect.

Q51 Just on that, do you feel that if, it should have been the club's informed opinion to relay pertinent information to yachts in relation to weather?

A Well, I think it's, it's, that's a definite. I mean, of course it's their, it's their obligation to try and do that but at the same time they've contracted the

bureau to do the forecasting so therefore the forecast that comes out from the bureau should, should be, you know, should, should convey that information. So, therefore if the forecast is, is correct and detailed then that should be sufficient.

Q52 Were you present at the weather bureau's briefing at the CYC?

A Yeah. That's on Christmas Eve, yes.

Q53 On Christmas Eve, yes.

A Yeah.

Q54 What's your informed opinion as to how that briefing was conducted?

A The, the met briefing on, on, I, I don't think that was a particularly good briefing on that particular occasion. I mean, the same person from the bureau, Ken Bat, normally does the briefing each, has done for the last five or so years from the bureau and he's generally, you know, a reasonable job. He was obviously in a bit of a dilemma this time because the models were in disagreement so therefore, what the hell am I gunna say because, you know, are we gunna have a low here, here, or here, or what am I gunna, how am I gunna, you know, confront this and paint a picture that doesn't make it look like I've just got a dart board. But I thought his solution was probably a bit weak in the fact that he basically then had 20 minutes to talk or roughly 20 minutes and, and most of that was taken up with just silliness. I mean, I shouldn't say

silliness, but it was completely irrelevant. He discussed at length all the sorts of weather that you might, that you might get between Sydney and Hobart which was quite irrelevant in terms of thunderstorms and offshore, every sort of wind that you could get, well, it wasn't the case. And he could have been a little bit more specific because there were, there were in that, at that time only three different sorts of, well, I shouldn't say that. There were three most likely options that could occur and during the course of the race. One was nasty, two were not as nasty by any means and one could give a race record and one wouldn't and in that 20 minute period if he said, look, you know, we're gunna have a pretty major front move across here, it's gunna have a nasty low on it. The low could be here, here and here, these are the three scenarios that will unfold from one of those conditions. Now, when you come down on Boxing Day morning, we will now hopefully be able to say that, you know, option B and C are out and option A is the way it's gunna go but these are the three most likely scenarios but that's not the way that it was done on the time, he just basically, sort of, held off. You know, that's, it's, it's, it's a difficult decision, you know.

Q55 The, the time on my watch is now 10.40. We'll suspend the interview for a tape change.

INTERVIEW SUSPENDED

INTERVIEW RESUMED

SENIOR CONSTABLE UPSTON

Q56 The time on my watch is now 10.45am. The interview between Upston and Badham has continued. Now, Roger, just prior to the tape change we were discussing the weather bureau's briefing at the CYCA and that was on Christmas Eve.

A That's right.

Q57 O.K. Now, we've come to a situation where a briefing was given on Christmas Eve which is basically two days before the start of the race, which was at 1 o'clock on Boxing Day. And the weather bureau uses a number of models, as we've already discussed, and two days has since elapsed. So, the majority of the yachts that are competing in the race are relying on a weather briefing that's been given two days previously. Is that correct?

A Yeah. That's right, yeah.

Q58 What are your thoughts on that?

A Well, no. Well, the briefing, yeah, the, well, it's a, it's a, that's a difficult situation in terms of the fact that Christmas Day happens to be the day before the start of the Hobart race. In terms of when to get good information in, I mean, this is probably a good example of, of the fact that the latest information is always better and the fact is that the briefing that was given 48 hours earlier was done on very much conflicting models and therefore didn't elude to any

details. Now, the morning of the start, the models are starting to come in line but it's not until after the start of the race that they're definitely in line. So, a forecast comes out which is obviously going for, you know, a fairly hefty front and a bit of a low pressure system to form with it and winds of probably 30 to 40 knots anyway to develop with this system. But there's no, there's, there's, the weather bureau have, like, like my little package, they, they have a little package which is available there to, for yachtsmen to pick up on the morning of the, of, of the race, they have a little stand there and they've got the latest information and the latest output from the models. They've now been doing this for the last couple of years. It's a bit of hard for me 'cause I'm in a commercial business and they do it for free and they've only started doing this in the last couple of years. But there's no compulsion for skippers to go, even go and pick that information up. Now, I mean, most of them will and certainly they should but not all the, not all the skippers for instance, or boats leave from the CYC anyway. They leave from different clubs around the harbour or they, you know, they may leave earlier in the morning, before the weather bureau get there or whatever. So, it's, it's, there's, there's no good fail-safe system and certainly there's probably room there to think about how to get, to make sure that all the competing yachts get at least the up-to-date

information, even if it's only by package. Now, whether you hold a briefing on the morning of the race, it's certainly an option. The trouble always is to just get one person off the boat or two, you know, and it turns into a shit fight pretty quickly 'cause every Tom, Dick and Harry wants to get in there. And the morning of the start's always a bloody nightmare anyway and that's why they hold the briefing two days before. And, but, you know, two days before it, the weather is, is a bloody long time if you've got a nasty situation developing.

Q59 Yeah.

A And that, that is, and I don't even know in the CYC report how they, how they address that particular issue but it's, it's certainly an issue that probably needs looking at in terms of making sure how to get good information to the yachts on the morning of the start, 'cause they're not all at the CYC and it's, it's generally a very busy, hectic time. Do you try and hold another briefing or do you just give them written information or whatever? And it does come back to the quality or the, you know, the, the quality and the, the, the information that was given 48 hours previously in the briefing. The total package - - -

Q60 Right.

A - - - that should be preparing the skipper and the crew or the navigator in terms of how the situation is unfolding. I mean, I, I reckon they were spending

probably 15, 20 minutes that morning, the, the, the, the morning. The crew of the Sayonara took over part of the coffee shop, just closed off the doors and took over, they had their, their crew breakfast there. And I turned up for that, just the latter part of their crew breakfast and, and had been speaking and Chris Dickson had been speaking and then I arrived and gave the navigator, who is Mark Rudiger, the copy of what I just talked about there. And then, and then got up and gave them a 10 minute talk about all the different options of what was going to happen. In other words, not so much what was in the written word but what was between the lines of the written word. You know, what was the likelihood of it being nasty or not nasty. And that, I, I spoke for 10 minutes just to the whole crew and then I spent another 10 minutes talking to Mark Rudiger and as soon as I'd spoken, Chris Dickson got up again and said, and I clearly remember it because I started then to talk to the navigator in detail and what he should be thinking about. And Chris Dickson stood up immediately after me and just said, "Well, you've heard from It's obviously going to be, it's obviously going to be pretty nasty and knowing from what", I can't remember exactly what he said but, "Knowing if he, if he says it's gunna be nasty, it's gunna be a bloody sight worse than that and this is going to be a rough trip and we've really got to look after this boat and

we've got to look after our crew". And, yeah, I mean, in hindsight, you know, what, what he said was very good, yeah.

Q61 Do you think the CYCA, the CYCA has a duty to keep, to have that information supplied in lieu of the 48 hour difference between their, their obligatory weather briefing.

A Well, it's, it's, it's, it's a matter of, of how good the weather information is. I mean, I think up until, up until present day, you know, weather, weather information and weather forecasts are probably treated, you know, like yesterday's newspapers.

Q62 Right.

A So, in other words, there's, I mean, even if the forecast had been, my opinion is that even prior the start, if you forecast winds of 50 to 60 knots and 10 to 12 metres seas on average in a certain area in eastern Bass Strait, most people wouldn't believe you anyway and even if they did believe you, they'd still go. So, therefore it's, it's only, it's, it's still a forecast. Only, for instance, the next day in the Melbourne to Hobart when they canned the race for a day because it was reality. The winds were blowing 50 to 60 knots directly outside the heads of, of Melbourne and the Melbourne and, and there were waves of 5 to 7 metres outside the heads and, and the whole heads were closed off so they canned the race. That was reality, it wasn't a forecast. And the yachtsmen will, sort of,

believe reality to some degree but they don't, they're, it's, it's difficult in the forecast because most people are fairly disparaging of the forecast. And, I mean, for, for, for correct reasons because it's often wrong or it's often inaccurate and therefore there's, it's, it's difficult. So, but the CYC probably had, well, it's happened anyway in terms of the, whether they had a moral obligation or a real obligation to supply the latest information. The fact is that it's there now anyway, in other words, the bureau come down on the morning of the event and have a free package that they give away and it entails, these days, pretty much everything. I mean, it's very hard for me to compete against that service.

Q63 Was the, the free, are you aware of the free package? Have you, have you seen the free package?

A I have seen it, yeah, yeah.

Q64 That, that was supplied by the, by the Bureau of Meteorology - - -

A Yeah. I mean - - -

Q64 - - - on the morning of the race?

A Yeah, yeah.

Q65 How did that differ to actually what was predicted by yourself?

A It probably wasn't a lot different because I opted that morning to go with the bureau model, the LAFS model and they were forecasting pretty much on that bureau model, on the 48 hour LAFS forecast. So, therefore I'd, in my

notes I'd canvassed the other option and I always tend to, I'm writing them for, you know, the people that I talk to on the phone or, or had meetings with over the previous, probably three to four days, sometimes intensely and sometimes just casually. So, therefore I'm trying to paint a bigger picture and therefore I'm trying to relate what they, what we've discussed previously and, and the different outcomes because if option A doesn't occur and option B does, then they've got a certain strategy that should come into play in terms of should they be inshore or should they be offshore? Should they be looking for current, shouldn't they be looking for current? So, I'm, my forecast is always written from the point of view of the yachtsmen and the, and the navigator or the strategist on the boat in terms of how to win the race or how to do well. And so, you're trying to take into account the whole package of the race whereas the bureau's forecast is just a forecast. It just says the winds will be this at this time and so, it's a, it's a different, I'm probably filling a slightly different market there. But, but generally, in terms of wind forecast, it, it certainly wasn't a lot different because I'd decided to go with their model.

Q66 Right. And, and was there much weight placed on, on what the weather bureau was predicting that day of the race?

A Sure. I mean, you know, there, there was, there was a

lot of talk about, you know, that there was suddenly gunna be a gale warning issued and, and, you know, I think everyone was aware that there was a whopping front coming. Now, the front, and there was gunna be very strong running conditions before the front. Everyone was aware of that. People weren't aware of exactly how strong the thing was gunna be behind the front and that depended on the low forming. So, yeah, there was -

Q67 Let's, let's just briefly talk about that low forming. What, what can you explain a little bit more about that, the low forming behind the front and what was the consequence of that?

A Yeah. Well, the low, I mean, the low was definitely going to form. It, it was a classic meteorological situation, a cold upper trough, it was dragging very warm humid air ahead of it. I mean, the, the computer models, all of them had a low forming. It was just a matter of how intense was it gunna be. And the thing, even on Christmas Eve, on, on, on the night on Christmas Day. The, this upper trough was in the bite and moving towards Tasmania. Yes, it was definitely going to occur but how intense was it gunna be. And it did, it actually started to form very early on the, well, it started to form during Boxing Day and particularly the, the actually upper trough started to, you could see it on the satellite photograph, you could see rotation, you could see cold air andvection, cold

air coming around the top of it. But even by late in the day when they were all running, when the boats were running down the coast, that this low was actually starting to form. But it didn't actually form as an entity until about 3.00am to 6.00am on the, on the next day, on the 27th. And then intensified as it slowly or steadily moved east, across eastern Bass Strait on that Sunday morning. It was a, it developed into a, into a particularly intense low pressure system as, as you would expect from this meteorological situation around it. The low, when, when such low pressure systems do form, they, they, they're invariably never symmetric, in other words, you don't get perfectly uniform winds circulating around it. You, you tend to find that there are trough lines and, and cloud lines imbedded in the, in the circulation which tend to channel the winds to some extent so that you do get bands or areas of winds which are much stronger than, than other areas. So, the, the, the winds around this particular system were not uniform but they were certainly going to be easily 40 to 50 knots. And that was the, the typical warning and forecast that was issued by the bureau during the event. However, because the thing is asymmetric, you'd tend to find that there are often areas where the winds are gunna be much stronger than that and there are gunna be other areas where the winds are softer than that, not as strong as that. And that's always, well, it's not a difficulty. That's,

that's, that's some, can be a difficult thing to portray but it's not impossible. I mean the, if you look at the standard, sort of, forecast that is issued around the tropical cyclone anywhere off the Queensland or West Australian coast, you tend to find that the, that the forecast is, is quite detailed in its structure. It says that there is, the, the winds average between so and so and so and so, but maximum sustained winds are expected to be and they might mention 90 knots or 110 knots. They'll say that they're, they'll paint out the, radially where the areas of, of gales or storm winds or hurricane strength winds, cyclonic, tropical cyclonic strength winds are expected to form in relation to it. And whether the system is symmetric or asymmetric, in other words you might have stronger winds on the southern quadrant of it. So, it is certainly possible to paint a more detailed picture, picture of, of, of an intense low pressure system but you need more words to do it. And if I had a slight criticism of the weather bureau, I think it would be that during the course, particularly of the Sunday when the low was actually forming and, and actually moving across towards the, the fleet on Sunday afternoon, on the forecast that was issued both on Sunday at 2.00am in the morning and Sunday, 2.00pm in the afternoon, that both times the forecast was a very bland forecast. It was just a straight, straight off the shelf west to sou-westerly winds, 30, 40 to 50

knots. And then its seas, 4 to 6 metres. I mean, it's, it's very, it's a, it's a very cryptic, short piece of information. For a specific forecast, this is not a forecast that's issued to anyone else except a hundred yachts. And if you're gonna issue a forecast to a hundred yachts of, about an intense low pressure system, you can afford to take a little bit more detail and say that the winds in this area are gonna be stronger and the winds in this area are gonna not be as strong. I think you can afford that luxury and I don't think anyone would mind reading, you know, double the amount of words if it painted double the complexity of the situation.

Q68 Right. Now, with that, let's, let's move across now to the, the winds that were actually taken from the Esso's Kingfisher B platform in Bass Straight.

A Yeah. Well, I mean, the - - -

Q69 I'll show you, I'll show you a diagram - - -

A Yeah. There's a - - -

Q69 - - - which is, which is from the Bureau of Meteorology's preliminary report. And it's labelled figure 36.

A Yeah. Well, that's a good trace over the 48 hour period of the winds at Kingfisher B showing the average, or the mean wind, as well as the maximum gusts or the strongest wind. And it shows that during the course of the low pressure system just crossing to the south of Kingfisher B and going across towards the

fleet late on Sunday morning, that the winds averaged up as high as 55/56 knots and that there were gusts, maximum gusts of 64 knots and that's quite, what's the word, they're, they're almost equivalent readings to what was recorded at Bass, at Wilsons Promontory. Now, Wilson's Promontory, of course, severely over-reads because of its location in, in the promontory. If, if, at the, at 9.00am that morning you'd had a wind speed of 72 knots, gusting 92. Now, an average of 72 knots is, is quite extreme but you get an enormous amount of channelling and, and, and compression over, over Wilsons Promontory. As a rule, I usually take off 30 percent and if you take 30 percent off 72 gusting 90, then in fact you come back with exactly what was recorded at Kingfisher B and that was about 55 knots, gusting 65 knots. It's almost, they're almost on a parr. So, that gives you a good feeling for the winds that were being recorded on the north-west quadrant of that low as it moved towards eastern Bass Strait. Now, that's, they are probably typical of the sort of winds that were experienced. Now, now, as I say, as I said before, low pressure systems of this nature are not uniform. They, they're, they're, you do tend to get trough lines and cloud lines which do tend to band the winds and you get more wind in some of the regions and less in the others. And you find, for instance at, you know, around that particular low that, although the winds across Wilsons Promontory and, and Kingfisher B,

which were well on the north-west quadrant of where the low was, but actually closer into the, not right at the centre, but between where those recordings were made and the centre of the low, that the winds, there was in fact a well defined cloud line or trough line rotating around the low at that point and the winds probably would have been stronger. I, I, I'm sure that the winds would have been stronger at that, in that location. How much stronger you, it's up, purely conjecture but I would, I would imagine that instead of averaging probably 55, it probably averaged about 60. But it's, it's, it's, it's a temporal and a spacial thing, you know. In other words, here's a thing which was intensifying over time and space and it's moving along and sure, you know, there happened to have been locations where the winds were, were, were recorded to be 55, 56 knots average and gusting to 64. Now, that, the weather bureau forecast was for 40 to 50 knot winds so, in fact, you know, their forecast the time probably could have been a little bit stronger than that, I, I, my opinion, they could have upped their forecast a bit, just in terms of what they were actually observing at that point, let alone somewhere else in the, in the circulation of this low. But it's, yeah, it's, it's a good storm force type wind. It's, it's winds averaging over, you know, over 50 knots.

Q70

O.K. From where these readings were taken, Kingfisher B to an area where most of the damage occurred, would

it be fair to say that these winds would be experienced in the area of damage?

A For sure. It was at least that or maybe even a bit more. So, in other words, as the low pressure system moved across to where the fleet were, was positioned or, or where the bulk of the fleet was. But the same sort of winds would have been recorded and that is winds of, averaging between, certainly around 55 to maybe 60 knots average and gusts of at least 65 to 75 knots, and that's consistent. I mean, it's, it's, it's very hard to get good accurate readings from yachtsmen because the anemometers on the yachts are not particularly good at the best of times, let alone in, in severe winds. They're very, very small little cups. They tend, they're, they're certainly not calibrated for these sort of wind strengths. You get a hell of a lot of pumping of the mast and it tends to over read from the rocking and pumping of the mast. So, that you do tend to see stronger winds often recorded from those little instruments than what would be recorded if you had a big solid standard instrument mounted at 10 metres on a huge platform or something. And, but the winds were almost assuredly sitting somewhere between, in, in the mid to high 50s average. In other words, 50 to, 55 to 60 knots average and gusting 70 to 80 knots. But, I mean, a wind speed has never sunk a yacht in my opinion. I mean, if you take down all your, all your gear and you're under bare poles or you're just under

a stormsail, the boat is going to still move along and sometimes too fast, you can be overpowered, but it's not, there's virtually no wind that could ever sink a yacht. It's, it's the associated sea conditions which are going to cause all the damage.

Q71 Right. O.K. I'll go back to Wilsons Promontory in a minute but I'd like to take you to another section in the weather bureau's report and it's wave height at the Kingfisher B platform. What can you tell me about that diagram and that figure, 37.

A Well, these are the waves that are recorded at Kingfisher B and once again, this is on the north-west quadrant of the, of the low pressure system. And that shows a significant wave height, typically between 5 and 7 metres prior to the, as the, as the nastiest, most intense piece of the storm moved across near Kingfisher B. And maximum waves of, between 9 and almost up to 12 metres. Now, that's, that's, they are, I would imagine, would be very consistent with the sorts of waves that were generated in Bass Strait from those sort of winds. In other words, you had 50 to 60 knot average winds operating for a 12 hour period around a low pressure system that was moving east and in an area like Bass Strait where you've got wind and the sea and the wave trains all moving in the same direction, you will quickly generate a sea of that magnitude. That is typical somewhere around, particularly around 6 and 7 metres average wave height

with a maximum wave height of anything up to a hundred percent more than that. In other words, up to 10 to 12 metres. Now, the, the bureau used the, their, their forecast which, which was issued at the time, is for the significant wave height which is what's, what's been recorded here. And that's the height of the one-third highest waves and then they also claim in, in their report in here that the waves can be 86 percent higher than that. Well, that's, that's strictly true, I mean, mathematically. But what that actually means is that the, if you get, if you count a thousand waves then one in, one in those 1000 waves will be 86 percent bigger. So, that's, that's an extreme wave and it's not necessarily likely that you would encounter many of those in terms of a thousand waves, only one of them is going to be double the, or 86 percent bigger. Now, in fact that's, all of that is, is, is, is, fits in with the sort of winds that were operating across from Wilsons Promontory across to the Kingfisher B area. However, that's not the situation that was occurring where the yachts foundered and where most of the tragedy struck because it so happens that where the yachts got into trouble is the location where the east Australian current came round past Gabo Island and was feeding down into Bass Strait, that's a current coming from the north flowing to the south, a southerly set flowing down into Bass Strait. And it was well marked by satellite photographs up until the event, up until

the storm that there was a, at least a 2 knot current pushing into Bass Strait, just to the south-east of Gabo Island or Mallacoota. And you could map out that boundary very clearly on the satellite photographs of where the warm current's pushing into Bass Strait. Now, that, that warm current is pushing down in a south or even south-westerly direction directly against where the, the wind, the wave trains and the current are all being pushed by this low pressure system coming out of Bass Strait, heading in north-north-east direction. And those two sets of conditions, there was a confluence of that, the direct head-on current right at the point where the yachts found it. Because the, the influence of a change of current from water going with the wave of up to 2 knots of speed, to suddenly going against the waves of up 2 knots of speed, can virtually double the wave height. And that's exactly what was, what was observed. The sorts of waves that were observed on very late Saturday, very late Sunday afternoon on the 27th, was the sort of sea conditions that occur where current opposes wind and waves. And suddenly what was a 6 to 7 metre sea with a maximum wave height of 10 to 12 metres, becomes an average wave of somewhere between 8 and 12 metres with maximum wave heights of 15 metres or more. And that is very much consistent with what was observed in the area where yachts got into trouble. It was a very small area. It was only something like, about 40 miles by about 30

miles across where the current was directly feeding in against the, the prevailing situation.

Q72 In fact, wasn't it also the case that there was a sou-westerly swell following the 2 knot current south along the coast of New South Wales, leading into Victoria as well?

A A sou-westerly swell?

Q73 Yes.

A Well, the, but the swell, well, the, the swell was being generated around, well, I mean, there is no swell as such. No, I, I -

Q74 Well, let's, let's look about at just wind waves and, and waves generated by the wind and waves generated by winds a long distance away, which is known as swell.

A Yeah. But they become, yeah, but they become more and more irrelevant during the course of this event.

Q75 But what I'm saying is, were you aware of a swell to, to the south - - -

A Well, there was - - -

Q75 - - - coming down the coast of New South Wales, following the current, the 2 knot or 2 knot plus current heading south - - -

A Well, yeah.

Q75 - - - which was in - - -

A Sure, yeah. There was, there, it was a, because the pre-frontal conditions, up until the front arrived the, the, the, all the fleet had come down in something like 30 to 40 knot nor-nor-easterly winds. They'd surfed

down in, in quite good conditions with quite a good set of waves, short wave trains generated in that situation. But the front actually moved across the fleet very early Sunday morning and the wind then went into the west, or went into the north-west to start with and then went round the west as the low intensified. So, the wave trains that were set up from those running conditions the night before were really, pretty much smoothed out or, or got rid of - - -

Q76 O.K.

A - - - dissipated by the time this thing really started to, to, by the time the low pressure system really started to intensify on the Sunday afternoon. So, you've got virtually a 12 hour period where the waves that were, that had been generated coming down around, down the coast were pretty much, were extinguished.

Q77 Right. Now, but that still could have had some effect on the coupling in that danger area - - -

A Yeah. Well, that, that - - -

Q77 - - - we'll call it the danger area.

A The thing that they did was, the sea and the winds all accentuated the current pushing down and, if anything, they were pushing it just a little bit further into Bass Strait and then suddenly it's just all go from the other direction.

Q78 Right.

A But it's the, it's the confluence of currents and overriding of, of wave energy that's, that's really the

cause of the diaster.

Q79 What, the information that you've just told me now and knowing the currents that were coming down south heading across Bass Strait, with the, with the waves that were, were being picked up by Kingfisher B and the intense, was any of that information relayed to the yachts, that something is going to happen in that area?

A No, nothing. To, to my knowledge, nothing. And that, that's, that really is, I, I think a, something that, that, you know, with hindsight, certainly should have been because, you know, when you, when you look at the situation as it unfolded with that, with this sort of intensity of wave trains and, that are generated in Bass Strait, when you throw those towards a counter current, you're gunna get very, very nasty sea conditions which is exactly what, what occurred. And there's no, there was no forewarning of that. It's the sort of thing that, that certainly should come out of this and I, I, I know one set of people at New South Wales Uni are actually trying to look at that right now, to try and come up with a better numerical forecast of wave conditions given current, not just winds. Because currents really have a, so much bigger, it's, it's, it's the winds that generate the waves but the current that, that, that then really makes the waves behave well or not well in terms of dissipating and propagating their energy. And so a good wave model should have as much information about current as it

does about winds and that's certainly something that, that, you know, could be learnt from this disaster.

Q80 All right.

A Because this is not a unique, I mean, well, it's unique place but it's not a unique event because this sort of event, although this, this particular low spinning up to this intensity is not that common in December or January in this location, the fact is that you do get frontal systems at 30 and 40 knots very frequently in summer or winter and you get low pressure systems like this in winter very frequently in Bass Strait. And therefore, you know, the sorts of waves conditions that, and, and, and the very small nature of, of where, in both in time and space, where these wave conditions could become extreme, you know, should, should the forecast better than what they are.

Q81 And it is the case, in fact, that you've spoken to local fisherman down there that experience those conditions - - -

A Oh -

Q81 - - - on a, on a regular basis?

A Absolutely. I mean, I can go back to low's which I investigated back in the mid 80s where a trawler was sunk. You know, these sort of things occur quite frequently and, you know, there, there is, there, there are areas where the currents are, where there is a confluence of currents, where the seas are much nastier than what they are just around that area. And, you

know, fisherman are the guys that are out there each day. An experienced yachtsmen for a Hobart has done 20 or 30 Hobart's, you know. But a fisherman goes out there a hundred to, 150 times year. So, you can't compete in terms of local knowledge for a fisherman to a yachtsman. They're not in the same order of magnitude.

Q82 Right. All right. Now, we mentioned earlier Wilsons Promontory and the wind variations to what were experienced there and also on Kingfisher B, which we've already established, that the, the wind and wave on Kingfisher B is a fair assumption that was going to be experienced, apart from the current heading south, in that danger area which we talked about. What can you tell me about Wilsons Promontory and its, its peculiar weather patterns to what should be forecast at lower altitudes.

Q83 Yeah. Well, it's, I mean, it's certainly a place that, that records some good wind speeds. Just its physical location, it jots right out into Bass Strait, so therefore it's, it's, it's like having a recording which is basically in, in the middle of Bass Strait. But you pay for that in the fact that it's, it's a long promontory and particularly in a, in a sou-westerly wind or a west-sou-westerly wind, you get a huge amount of funnelling of the wind where it comes up over the promontory and accelerates both over the promontory itself as well as over where the actual anemometer is

at the lighthouse. So, you do get, you know, severe over-reading of the, of the conditions. And, and also in the opposite direction, in the, in the easterlies. And you get strong easterlies in there as well, not, not as strong as this usually, but certainly winds of 30 and 40 knots from the east and east-nor-east. So, it's, it's, you do, you do, it's nice to have it there but you do pay for it in, in, in its location because it's land and it's land affected. And, as I say, I, I, I usually just work as a rough rule, I take off 30 percent of the reading to give you some idea but at the same time the sort of the, the, the reading that was made both at 6.00am and 9.00am on the morning of, of the 27th of December, it was an extraordinary reading. And, I mean, it's, it's as strong as you would ever see ever in, in Wilsons Promontory, as strong.

Q84 In fact, I think, was it the case that those readings were broadcast?

A Yes. Yes, they were broadcast and in fact I remember talking after the event to a couple of my guys, you know, because I always recommend that they listen to Wilsons Prom, they listen to the coastal reports both from Sydney radio and Melbourne radio. And they listened to Wilsons Prom and they listen to the fact that it was 79 knots, gusting 92, whatever it, it was and thinking, well, you know, Wilsons Promontory, they read my notes, I'm not even quite sure what my notes say, but I, I remember talking to the, one guy and he

said, "Well, I, I heard the report and I looked at your notes", and he said, "I still thought this is, this is tremendous. If we're gunna get anything like that", he said, "we're, we're really in". Wilsons Promontory, I say funnelling and channelling of winds occur through Bass Strait and across the prom make the winds at the station stronger and favouring east-nor-east and west direction. The direction can be misleading 'cause it tends to funnel and channel the wind and King Island, further west, can often be a better guide for the off-stream wind direction. So, yeah, but it, but it was a very significant reading and therefore if the yachtsman hears that, I mean, if a yachtsman hears 79 knots average, that's, that conveys much more to him than a forecast that says 30 to 40 or 40 to 50 knots. Because a yachtsman, the average yachtsman can cope with gale conditions and the average yachtsman can't cope with storm conditions. That's really what it comes down to. And it's not so much the winds but the associated seas. And gale conditions, although the, although the bureau was forecasting, had a storm warning out, their forecast really was only gale conditions. And I think that's, if I had a criticism of the bureau that would be another one, I think, because they had the correct warning which was a storm warning which is winds of 48 knots or more and yet the forecast that they issued to the fleet was 40 to 50 knots. Now, 40 to 50 knots is mostly gale strength winds. So, their forecast was 40

to 50 knot winds and their forecast seas were 4 to 6 metres. Now, the average yachty will listen to that forecast and say, well, that's pretty nasty but I can cope with that.

Q85 Right.

A Now, if, if, even if they'd read what was actually occurring at Kingfisher B and they said that the winds were 55 gusting 65 knots and there were 7 metre seas with a maximum of 12 metre seas, then the yachty might think, well, hey, actually this is pretty close to, you know, I'll think about this. And if they'd forecast what was actually going to occur, which was, hey, the winds are 50 to 60 knots and the seas are probably gonna be 8 to 12 metres with maximum waves of 15 metres or more, then the yachty might actually take notice. But I still have the opinion that 99 percent of them would still say, well, that's the forecast and I can cope with that and I'll keep going anyway.

Q86 Yeah.

A It's, it's, it's such is the nature of yachting.

Q87 Why do you think the weather bureau padded their, their weather reports, their predictions?

A (NO AUDIBLE REPLY)

Q88 What I'm, what, what I'm saying is, why do you think that they gave softer - - -

A I'd, well, I, I, I don't know because I think their, you'd find that their forecast is actually softer than the conditions that were being observed at, at

Kingfisher B.

Q89 Right, that's what I'm saying.

A Now - - -

Q90 Why do you think they gave them?

A Well, I think it's just a bland forecast. It's forecast that takes into account the whole area of the low, whereas in fact, you know, as I said, certain quadrants and certain sections of the low are gunna have winds much stronger than that. And I mean, even the winds were stronger than that. So, I think it, it's, it, it, it, it's very much just an off the shelf straight forecast.

Q91 Right.

A And I think there's probably, I think, and if I'd issued that forecast I'd, I'd be thinking to myself, I, I think I should do better because I think there's room to do better. I'm not saying that, that, you know, anything else. But I, I think it's just, it's not, I don't think it's good enough for a hundred yachts. If you're doing a specific forecast for yachts then I think you could actually come up with a better forecast. And, and I think that one is just a bit too bland.

Q92 Just back, very quickly, on Wilsons Prom. Do you think that there should be other measuring instruments, perhaps, lower down to give a more accurate reading further out to sea or is it, is that a possibility

- - -

A Yeah

Q92 - - - because of, because of what was taken into account and the height of Wilsons Prom and that funnelling effect?

A Yeah. Well, just away from Wilsons Prom completely, I mean, if the, there's an automatic weather station on Deal Island but it's way up high and I, I'm not quite sure how that station's working at the moment. But there's certain, there, there is, there is certainly scope there to have, I mean, there are a number of small islands in Bass Strait, in terms of the Kent group, running across from Wilsons Promontory, that chain of islands that runs across there to the top of Flinders Island. There used to be an Esso buoy going back many years ago, at 40 south, 150 east, out in eastern Bass Strait. There is certainly scope there, probably for a tethered buoy again, at some stage, a proper met buoy. Or somewhere that gives a good idea of the flow in Bass Strait. But, I mean, someone has to pay for these things and it comes down to money in the end. And in terms of, you know, I suppose the, the oil industry's probably nearing its maturity down there, so they're not interested probably.

Q93 O.K. The time on my watch is now 11.26am. The interview will be suspended for a tape change.

INTERVIEW SUSPENDED

INTERVIEW RESUMED

SENIOR CONSTABLE UPSTON

Q94 The time on my watch is now 11.32am, and the interview between Upston and Badham continues. Roger, we were discussing Wilsons Promontory and I think we'd, in fact, finished on what we had to discuss on Wilsons Promontory. Is there anything else you'd like to add about that, that particular area?

A Well, no, not that area. I mean, I just think it's, if, if you look at the forecast that actually came out from the Victorian regional office which were only just their standard forecast for eastern Bass Strait and their wind warnings for eastern Bass Strait, at all times their forecast was better then the forecast from the Sydney office or the Hobart office that were forecasting for the fleet as they sailed through that region. So, therefore, I've, I've made the comment in, in my report to the CYC that I thought that it's the, when the bureau do the forecasting next time, then instead of just having the New South Wales office look after one section and the Hobart office, that in fact, when they travel through Bass Strait that, probably they, they should have the, the VRO, the Victorian regional office look after their own turf, that is Bass Strait. Because, I think, in hindsight they forecast better and they, they, they have some expertise in that office from forecasting for the oil rigs in Bass Strait and I think, you know, they should therefore use that expertise and leave the New South Wales office to

forecast the New South Wales coast and the Tasmanian office to forecast the Tasmanian coast, but, you know, I don't know how they, they'll run the system, system this time. Yeah.

Q95 All right. Senior Constable Gray.

DETECTIVE SENIOR CONSTABLE GRAY

Q96 Just one question. The information and the explanation that you gave us in, so far as Wilsons Promontory's concerned, about the wind readings in that area, are you aware if the bureau gave the same explanation to yachties before the race or was it in their package?

A No. I mean, in, in terms of the wind strengths or in terms - - -

Q97 In terms of, if it says it's 72 knots at Wilsons Prom, it's really 55.

A Yeah, yeah. No, I mean, Wilsons Promontory's one of those things that, that, it's like many coastal reports, I mean, where you do tend to get exaggeration due to channelling, funnelling and deflection, all sorts of funny things goes on. And it happens in a lot of coastal area, Eddy Stone Point, Gabo Island, any of those major reporting stations just happen to be located such that you get over reading in some certain winds directions or wind strengths. They, they tend to be a bit high and it's a matter of local knowledge.

Q98 Right.

A Certainly, I'm, I'm not aware of a, of a bureau publication that actually discussed that on a station

by station basis. They, the bureau just go with the blanket thing that their forecast is an average and that the wind can be a lot gustier than that and they claim up to 40 percent stronger. Well, that's technically true, although most air streams don't usually gust 40 percent stronger, 20 or 30 is most, most normal. So, if you have a, you know, a 50 knot wind, then, well, if the wind is averaging 50, then 40 percent more is an extra 20 knots. So, in other words, they're saying that if you, that if they forecast average 50, that you could see a gust of 70. And they, in their forecast, they say that the wind was 40 to 50 knots, so therefore they say that they were forecasting 50 knots - - -

Q99 Yeah.

A - - - and that they, you, that you should have seen up to 70. That's, you know, they're, they're manoeuvring the, the data.

Q100 Yeah.

A I think, generally, that they were forecasting 40 to 50 and most yachties would imagine that if you, if you had a wind which was, which was averaging between 40 and 50 knots, that you'd probably imagine that you might have gusts to 60 or 65 or something like that. And in fact, in Kingfisher B, the, the wind averaged 55 and the maximum gust was only 64.

Q101 Right.

A That's not 40 percent more, that's something like onl

about 15 percent more.

Q102 Yeah.

A So, you know. But it's, it's, you know, in terms of the gustiness or squalliness of an air stream, sure. You know, the wind, the wind is not steady. The wind varies around a mean and you can see variations of up to 40 percent around that mean. So, you've got to, you, you should be aware of that. And I think a lot of yachtsmen, while they're, while they're well and truly aware that the, that the wind is not steady, they weren't aware that, in fact, the wind may gust or lull around the mean up to 40 percent. And I think that, that, that sort of surprised a lot of yachtsman, even though if they actually stopped to think about what they'd ever sailed in, they probably realised that they had actually sailed in airstreams like that, that's event.

SENIOR CONSTABLE UPSTON

Q103 Apart from any comments that you have in relation to the BOM's report, the bureau's report, is there anything, I mean, overall. Do you, how do you see it?

A The bureau's report?

Q104 Yeah.

A I, I don't like the idea of the bureau doing their own report.

Q105 Right.

A I, I think there is expertise outside the bureau in Australia to, you know, to, to have someone from

outside do the investigation into the situation. I don't see why they have to investigate themselves, to some degree. The author's were mainly, were primarily from within the bureau and also persons or people that were, had just left the bureau. I think that's, that's a little bit too incestuous to some degree They're, they're very big on scientific rigour for all their scientific publications and peer review. I think they're gonna peer review for this. And I think it's, it's, I think the report really is, is, has, has not really been pragmatic in terms of how they can improve the situation. I think it's just been too, to show that the bureau had a correct warning and a correct forecast in place and they gave themselves a bit of a tick. I'm not, I don't think the situation needs a tick and I don't think it needs a cross. I think it just needs to be reviewed, I think it needs to be rigorously reviewed and both from outside and within and how these things can be addressed. And I, I, I think the bureau need to, you know, they, they have a commercial client here, in terms of the, the, the yacht race or the, the CYCA who, who have said, you know, we want to employ to provide forecasts for this race. So, therefore they, they need to tailormake that forecast. And I mean, the bureau have a section within the bureau for the SSU, the, the Special Services Unit, that, that particularly handle commercial contracts. Now, it should either go through that section or there needs to

be some detail and guidelines given where, I mean, what's happened is that the, the standard forecast, the forecaster that's been doing just the forecast for everything, just the general weather forecast and the, and the, just the normal warnings and the coastal waters forecast has said, well, I've also got to do the Sydney/Hobart forecast.

Q106 Yes.

A So, we'll grab the standard warning issue and we'll just basically reissue that and tailor that around it, and bang, it's out, it's done. This is a commercial contract and therefore, you know, and it's for a specific set of people doing a specific race at a specific place. Therefore, I think, you know, there's probably room there to come up with a more specific product.

Q107 Over and above what is ordinarily supplied?

A Over and above what's ordinarily supplied. I mean, someone's got to pay for the product and someone is paying for the product, so therefore, give it, produce it.

Q108 Right.

A The expertise is within the bureau to do that, but I, I think on this occasion, I think it was, it was probably fairly average.

Q109 Yeah. All right. Just one final thing, Roger, what are your thoughts on the general perceptions of a, of a yacht master or, or crew that race in the Sydney to

Hobart or other races around, that their general knowledge is of weather?

A It's often frightening, I can tell you. I work with a
- - -

Q110 Would you like to expand on that?

A I, I work with a lot of yachtsman of all grades from the bottom to the very top, and it's frightening from all of them. The average yachty has a very intuitive feel about the wind. They intuitively, or have a feeling for the nature of the windstream they're sailing in and they do have an intuitive feeling for whether the wind is actually getting, the situation is deteriorating or improving, but it's a feel. It's just an intuitive feel, rather like, like a fisherman to some extent, I suppose. And the, the actual knowledge that's, that they have in framework around that is usually very poor. And, I mean, the fact that every yachty was so surprised that the wind can gust 40 percent more than the average, it should not have been a surprise. I mean, they, they've all experienced that
- - -

Q111 Yeah.

A - - - but they've never stopped to think about it. Well, they should and, and generally most yachties just don't have a good expertise in, in weather or oceanography in, in any sort of sound framework. That's an over-generalisation too, because there are obviously some yachtsman that have a very good detailed

knowledge. But on the, on the whole, no, they're not particularly good and there, there's, there's always room for improvement, always. But the room for improvement won't always address this sort of situation. This is an extreme event and it wouldn't matter how much knowledge you had, the fact is you're, you're working on what you can see at the time and the forecast that you have at hand. And both what you can see at the time as you go into that situation and the forecast that you had at hand, both of those said, hey, I can handle this. And when you get there you suddenly find extreme conditions that you can't handle. No-one can handle them in that particular craft and therefore either the forecast has to be improved, you know, on a very small local, regional scale or, you know, tragedy's happen. And I mean, when you, it doesn't matter whether it's yacht racing or mountain climbing or skydiving or whatever. I mean, if you're gunna battle yourself against elements, extreme events occur and tragedies happen.

Q112 So, you feel that yacht racing, obviously extremely dependant on weather, that there is vast room for improvement, to extend the knowledge of, of yachtsman as a whole - - -

A Oh -

Q112 - - - on weather, on weather.

A On weather and, and oceanography.

Q113 Oceanography.

A Yes, for sure, yeah.

Q114 O.K. Is, just on wrap up, is there, is there anything else that you can think of now that you feel that, as Stewart has just mentioned, that would assist us, that we can pass onto the coroner?

A No. Not, not really. I think it all just comes down to understanding the, the nature of, of the effect of waves with current in very small areas and, I mean, that's something that, that is on a much smaller scale than what typically is forecast or what is handled by the current, a set of numerical models, and that's, that's where improvement is gunna have to be and, you know, when those sorts of models are developed then, you know, the forecast will become better, more warning will be given. That's not to say that a similar tragedy wouldn't be averted.

Q115 No.

A No.

Q116 O.K, then. All right. The time on my watch is now 11.47am. This interview has now concluded.

INTERVIEW CONCLUDED