

W1036 244/00 RMB-K1

## NEW SOUTH WALES STATE CORONER'S COURT

STATE CORONER: J ABERNETHY

THURSDAY 20 JULY 2000

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5/98 - EVENT OF THE 1998 SYDNEY TO HOBART YACHT RACE

**INQUEST INTO THE DEATHS OF JAMES MICHAEL LAWLER****MICHAEL BANNISTER**

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**BRUCE RAYMOND GUY****PHILLIP RAYMOND CHARLES SKEGGS****JOHN WILLIAM DEAN****GLYN RODERICK CHARLES**

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Mr A Hill assisting the Coroner

Mr P Santamaria for the Bureau of Meteorology

Mr R Weber for the Cruising Yacht Club of Australia

Mr A Colefax for Mr Lew Carter

Mr P Callaghan SC for the Royal Australian Navy

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Mr N Hunt for Mr Richard Purcell

**PART HEARD**

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COLEFAX: Your Worship, I seek to renew your Worship's leave to appear on behalf of Mr Carter, my name is Colefax.

CORONER: Thanks Mr Colefax, leave is granted. Do you have something, Mr Weber?

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WEBER: Yes, your Worship, just in some respects a housekeeping matter. I raise this as a matter of courtesy to the Court. A witness by the name of Amelia Cater, who was a junior in the media office on Boxing Day of 1998, the Crown says has received a letter of 24 May requiring her attendance on 18 July. Her mother has been in touch both with my client and with the Crown to say that she never received such a letter and that she is overseas and that she will not be back in Australia during the currency of this brace of dates.

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CORONER: On that basis, if she's overseas, we'll probably have to do without her.

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HILL: I should perhaps correct my friend. The mother has never been in touch with the Crown.

CORONER: Alright. Thanks for that. We'll probably have to do without her. Thanks, Mr Weber. Did you have an application, Mr Hunt, for anything that you want to put to me? Clear it up now.

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HUNT: Yes your Worship. Just that I've seen there's some difficulties with the 25th.

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CORONER: I know, I understand that. But of course this

matter was firmly fixed for these three weeks and there is a logicality in the way we're trying to proceed, to do what Mr Shand wants to get him here would completely upset a string of other witnesses. I don't believe I can do it. I can only say this and I say it openly as I've said to you by a note I wrote this morning, thanks for that, as far as I'm concerned, the brief - he was in this matter and knew that this matter was on these three weeks before that plane crash. That's the matter that weighs in my judgment. The witnesses have been arranged in order to make the inquest as cohesive as it can be. I also note that Mr Callaghan has no instructions to appear for Mr Kothe. 5 10

HUNT: Sorry? 15

CORONER: Mr Callaghan has no instructions to appear for Mr Kothe, he told me yesterday, I'm sure he doesn't mind me telling you today. I think that Mr Kothe is happy if the matter between them is over and we won't belabouring that, I can tell you know. We really want to talk to your client about matters which are germane to this inquest and I'm quite confident that you could handle the cross-examination or the re-examination of your own witness, your own client. 20

HUNT: I appreciate your confidence your Worship but there are complex issues involved and the material is voluminous and Mr Shand finds himself in a situation where the inquiry into the Whyalla air accident is extending longer than he anticipated. 25

CORONER: I know, I accept that as read, I can't imagine Mr Shand would have accepted a brief which was in conflict with this matter but I can do nothing about that. I don't think that the area of examination by Mr Hill will be of great width. I don't know that Mr Weber will have much to question your client about, if anything. Mr Weber? 30 35

WEBER: As presently advised that is the case, your Worship.

CORONER: Mr Colefax probably the same. He's for Mr Carter. Mr Callaghan's out of it. 40

CALLAGHAN: I won't be here.

CORONER: And I don't know that the BOM are very interested in Mr Purcell either, is that the case, Mr Santamaria? So it comes down to you and Mr Hill. Why don't you discuss the matter with Mr Hill and I'm quite sure he'll let you know in some detail the parameters of his questions. 45

HUNT: Yes, your Worship. 50

CORONER: No surprises.

HUNT: As long as - on that understanding I think it does alter it, certainly in the past there has been some tendency for the issues to be somewhat wider than one would have expected. 55

CORONER: Yes but evidence already heard has limited the areas now, because there is as you know a time period between events which make the saving of a life one of those lost, makes this evidence really irrelevant on that and that's my view and it's counsel's view. That being so, we're proceeding on a much, much narrower basis. So I could only say that I regret that I can't assist you with Mr Shand but I do believe that my inquest has priority over his plane crash, important though it is and I can't grant your application.

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HUNT: As your Worship pleases.

COLEFAX: Your Worship, also on housekeeping matters, I didn't have an opportunity on the previous occasion to raise one transcript error, if I could have your Worship's leave just to record at the moment.

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CORONER: Yes.

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COLEFAX: On 28 March 2000 on page 54 at line 14--

CORONER: Wait a sec, we'd better try to get hold of that. Do you need it, Miss Lazzarini? If the solicitor makes a note of it should do, shouldn't it?

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COLEFAX: Yes, your Worship.

CORONER: Okay.

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COLEFAX: The question that I asked is recorded as follows. "If I tell you that there was only HF radio on Telstra Control, would that come as some sort of news to you." My clear recollection your Worship is that the question was "if I tell you that there was only one HF" and the word "one" has been omitted from line 14 of the transcript.

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CORONER: Okay. Who was the questioner?

COLEFAX: I was the questioner and the witness was Mr Walker.

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CORONER: Alright, one HF radio. Is that acknowledged?

HILL: Yes, I can't recall it so if that's--

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CORONER: No, I can't either.

HILL: I think that it's common ground there was only one HF radio.

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CORONER: That is common ground anyway, isn't it?

COLEFAX: I'm pretty sure it is, yes your Worship.

CORONER: Anything else any other counsel want to say about that?

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WEBER: No, your Worship.

CORONER: Righto, thanks, we'll note that. Are there any other matters before we start to hear a bit of evidence?

HILL: I have one or two, Mr Coroner, only in this regard. Regards the witnesses today. If Mr Collinson should finish his evidence, then Commander Greaves will give his evidence. Commander Greaves is--

CORONER: On the matter that arose yesterday?

HILL: No, on what sort of network the Navy would employ, radio net, if they took 115 units from say Sydney to Hobart.

CORONER: Okay.

HILL: The other thing is this, that Monday, because we are hoping at this stage that Mr John Young, who may be on that phone now, will be here to give evidence from AMSA in regards to what was raised and will be raised again by the commanding officer of the vessel Young Endeavour, Galletly.

CORONER: So that's Monday.

HILL: If that follows, then Monday we will have Andrea Holt and a Mr Green, the chairman of the International Racing Committee, if we get his report or his statement, which we were told we would get today, being Thursday. That would give everyone time then to read what he has to say and we could put him in on Monday, if that is convenient.

WEBER: Next week?

HILL: Next week. No?

WEBER: It's just a question of getting him from the United Kingdom, your Worship.

HILL: I'm sorry, I thought you said that he was here.

WEBER: No, no, no, I never said that.

CORONER: I did too. That was the way I understood it.

WEBER: If I led anybody to believe that he was in Australia, I apologise, I didn't intend to. As to his report, Mr Harris has been making many calls and his secretary is making calls literally at the moment, it's 7.30, quarter past 8 now in England. We had hoped and still do hope that we will serve during the course of the day an unsigned copy and get a signed copy--

CORONER: Alright, just keep in touch with Mr Hill and Miss Lazzarini about how long, when you can get him out here and all that, we'll just have to fit him in as best we can.

WEBER: The Court's preference I take it your Worship is

that he be available on Monday?

HILL: It's only because we've got spare time and we could put him in there. If he's not available then we may have to stand down or bring something forward. 5

WEBER: We'll do our best, your Worship, rest assured.

CORONER: Yes, okay, thanks. I think that's it. Let's do some work. 10

HILL: I'm told Mr Coroner that that was Mr John Young from AMSA on the phone. He will be here tomorrow and there will be representation as I understand it and I will communicate further but he will be here tomorrow. 15

CORONER: Okay.

<MICHAEL JOHN COLLINSON(10.18AM)  
SWORN AND EXAMINED 20

HILL: Q. Sir, would you give the inquest your full name?

A. Michael John Collinson.

Q. And your address sir?

A. 31 Bell Street Newtown Tasmania. 25

Q. And your occupation?

A. I'm presently unemployed, I've just finished a contract as the communications officer with the Australian Antarctic Division. 30

Q. Before we go into the various documents that I have before me, I want to take you through your experience, through your history. I think you first started your career in 1965, is that right? 35

A. That's correct, in 1965 I joined the British Merchant Navy as a radio officer. I served with the British Petroleum Tanker Company on oil tankers for two years as a radio officer. 40

Q. After those two years?

A. I left the sea and joined Feranti Limited which is an electronics company with factories in Scotland and Edinburgh and I worked with them until approximately 1975. 45

Q. What were you doing there?

A. I was first of all a radio mechanic, working on the Harrier systems avionics, I worked later with the Phantom aircraft electronics, the air weapons guidance system and later was a microwave link communications engineer. 50

Q. How long did you work with them for?

A. From 1967 till 1975. 55

Q. In 1975?

A. In 1975 the pay wasn't so good at Feranti and I decided I was going back to sea as a radio officer and I had to

renew my ticket. The college that I went to suggested I shouldn't go to sea, I should join their staff as a lecturer which I did. So I was a lecturer at Leeds Nautical College.

Q. In what?

A. In marine radio communication. 5

Q. How long were you there for?

A. Until I emigrated in 1979. 10

Q. Yes and what did you do then?

A. In 1979 I came to Australia and joined the staff of the Australian Maritime College as senior lecturer in marine radio communication. 15

Q. That's in Launceston is it?

A. In Launceston. I was there for 17 years. 15

Q. You were specialising in what?

A. Marine radio communication, fault diagnosis, radio communication theory, latterly the job of marine distress and safety system in terms of training deck officers to operate the communication systems. 20

Q. I think you were there until 1996?

A. That would be correct. 25

Q. And so you had 17 years there in that position and then you were with the Australian Antarctic Division as a communications officer? 30

A. Between that time I was employed by the Tasmanian police, I was a communications operator with Tasmanian police before going to the Antarctic Division.

Q. I think you have also been teaching radio telephone communications to small boat owners since 1975, is that right? 35

A. That's correct, yes.

Q. And by small boat owners, are we talking about yachts as well? 40

A. Yachts. I used to teach the members of the Royal Fourth Yacht Club in Edinburgh, I've taught the Tasmanian police search and rescue marine officers, marina biologists for the CSIRO, apart from yachties, people with small boats. 45

Q. I think that you were a member of the - you are a member of the Royal Tasmanian Yacht Club, is that correct?

A. That's correct. 50

Q. The first document that we have is a letter that you wrote to Mr Badenach on Thursday 8 February 1999, sorry, 18 February 1999, is that right?

A. That's correct. 55

Q. So this is shortly after the date of the race that we're talking about?

A. Yes.

Q. Who was or who is Mr Badenach?

A. Mr Badenach chairs the Royal Yacht Club's Sydney to Hobart race committee.

Q. That's the Tasmanian - when you say the Royal Yacht Club? 5

A. The Royal Yacht Club of Tasmania.

Q. You state there the radio communication committee of the Royal Yacht Club of Tasmania, now there is a committee is there? 10

A. It is a committee, yes.

Q. How many?

A. Approximately a dozen people involved. 15

Q. And what position did you hold at that stage in that committee?

A. I was asked to co-ordinate the radio operations of the club's radio room for the 1998 yacht race. Prior to that a gentleman by the name of Mr Jeffrey Boys used to co-ordinate it. He fell ill and I was asked to take over. So my role was finding volunteer radio operators, developing a roster and making sure that they were able to fulfil the role of monitoring the race frequency and completing log books and so on. 20 25

Q. So you co-ordinated the I'll use the word staffing of the radio room in the Royal Yacht Club of Tasmania?

A. That's correct. 30

Q. For the 1998 race?

A. Yes.

Q. You say the committee having received a number of statements and observations from radio operators who were on duty during the Sydney to Hobart race. Now is that those that were on duty in the-- 35

A. Radio room. In the radio room. 40

Q. The radio room in Tasmania?

A. Yes.

Q. Wished to place the following points on record for your consideration and submission to the review committee as you see fit. Which review committee are you talking about there? 45

A. We had heard that the CYCA had announced that they were putting a review committee together in order to conduct a review of the 1998 race. 50

CORONER: Q. And you now know that review as the Bush review?

A. That's correct. 55

Q. Was there consensus - was there a discussion with committee members, your committee members, before you drafted the letter?

A. That's correct, we--

Q. And did you show it the completed letter to them before you sent it off?

A. There was a debriefing session. There were perhaps some 20 to 30 points raised in point format and I put those into this--

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Q. Into the letter?

A. --letter.

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HILL: Q. You go on to say the sailing instructions and rules published in the notice of race, that's the CYC notice of race, are lacking in detail concerning radio communication equipment and procedures. Total reliance is placed on the AYF rules, which are also sadly lacking in this area. This was the consensus of your committee?

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A. That particular point was probably more my own view. Others, I wouldn't know how many, others would have possibly agreed with it but that particular point is probably my own.

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Q. You go on to say many yachts suffered radio equipment and battery failure. Reports from a radio surveyor, David Hughes, who was called to repair radio installations after the race indicate that the radio equipment installation on those yachts was not of an acceptable standard. Did he make a report or did he speak to you or what?

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A. It was just a verbal statement to me. He was asked to attend to some of the yachts that arrived in Hobart and his statement was that a few of them, the installations as far as he was concerned, weren't to an acceptable - what he called an acceptable standard. Coaxial cables were of poor quality, earthing systems weren't adequate, that kind of thing.

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Q. You go on to say reliance on the Australian Yachting Federation rules which state that radio transceivers should be checked annually is questionable, there is no standard to which pleasure craft are surveyed. Is that correct?

A. There is no standard laid down by any organisation. It was the term checked, because what is a check. Do you say that the equipment's there physically, do you test it in some way? To what standard do you test the equipment if you are to test it? So it's a matter of the interpretation of that checking.

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Q. So to simply put the words must be checked annually doesn't really mean anything?

A. Not--

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Q. It could mean a physical look to make sure it's there to presumably a test over the limit of its capacity?

A. The nature of the check isn't prescribed.

Q. You then say the AYF's set standards in many areas but sadly in the case of radio communication installations the requirements are woefully inadequate. Radio equipment compared to other items of yacht equipment is given scant

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attention in the Australian Yachting Federation rules.  
That's how your committee saw that, was it?

A. Yes.

Q. Is there something in there that--

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A. To quote an example, these are the AYF racing rules of sailing, immediately prior to marine radio which is covered in one and a quarter pages, whereas advertising takes six pages of this manual.

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SPEAKER: Do you have a page reference?

WITNESS: The page reference, page 166.

CORONER: Q. So you're saying that the marine radio regulations - rules covers one and a quarter pages--

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A. Yes.

Q. --and advertising covers some six pages and that's an example?

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A. As an example. But specifically fuel tanks are referred to on page 166 and there's a standard referred to as Australian Standard AS1799.3 1985. They go to some trouble in some areas to stipulate standards but with reference to marine radio I find it's quite deficient.

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HILL: Q. If I could ask you just to keep your voice up a little bit. Now you say that the reference under rules to prescriptions and safety regulations of the Australian Yachting Federation and that a yacht shall comply with addendum A, AYF's special regulations category 1, has little significance when addendum A states only that marine transceivers shall be fitted with frequency channels specified. What exactly are you saying there?

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A. I'm reading on, I'm saying that the AYF racing rules of sailing say that there should be a marine radio transmitter, a single side band transmitter, with there were four frequencies mentioned, 2524 kilohertz, 2182 kilohertz, 4125 and 6215 kilohertz. That in itself covers three of the international distress emergency calling frequencies, 2524 is not one of those. It includes VHF transceivers with channel 16 and 67 but omits channel 6 which is also an on scene search and rescue channel. It refers to 27 megahertz which isn't applicable in this particular case. It does say that the HF - an HF transceiver should be permanently installed, which you would expect it to be. Section - paragraph (a), I'm only dealing here with category 1 items, marine radio transceiver, when this is VHF it shall have a minimum power of 25 watts, so that's specified and should be provided with a masthead antenna and coaxial feeder with not more than 40 per cent power loss. It says it should be provided with a masthead antenna, should isn't compulsory, it's desirable to have the antenna at the top of the mast in order to achieve the maximum range possible. The coaxial feeder loss in my view is quite excessive, you can obtain coaxial feeder with half that loss, 40 per cent power loss with 25 watts transmitting power would mean that the power reaching the aerial would be 10 watts less. In other words,

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15 watts would reach the aerial.

CORONER: Q. Meaning?

HILL: Q. Meaning what?

A. It's excessive, it's an excessive loss, I find that figure of 40 per cent loss--

CORONER: Q. What's the effect of it though, the excessive loss?

A. It means you're radiating less power.

Q. And that means? The signal's weaker?

A. Yes indeed.

HILL: Q. So you don't get as far, is that what you say?

CORONER: Q. Does that mean that you can't go as far?

A. Yes.

Q. So you're looking at a distance perhaps of from where to where?

A. You can't unfortunately quote distances in that form because it depends on--

Q. No, can you give me a ballpark?

A. A yacht with a 30 foot mast communicating with another vessel with a 30 foot mast might have a range of say 20 miles.

Q. And this will reduce that significantly?

A. It would reduce it perhaps to say 15 miles.

Q. From 30?

A. From 20.

Q. Righto, thanks.

A. Paragraph (b) refers to a VHF transceiver that would include the channel 72, an international ship to ship channel which by common use could become an accepted boat channel for ocean racing boats anywhere in the world. I'm not sure why that should be specifically mentioned.

HILL: Q. The other thing it says in there, in your letter, is that an emergency antenna shall be provided when the regular antenna depends upon the mast.

A. The question I have which relates to that is are they referring to an HF antenna or a VHF antenna, it's not clear from this wording.

Q. I see, so we don't know?

A. No. The assumption is that it's an emergency HF antenna because that's prescribed later on in the CYC documentation but it's not prescribed - I beg your pardon, I'm referring to a 1999 document.

Q. Then again you say there that it says radio - the committee said there radio transceivers shall be checked

annually.

A. That's later. Paragraph (d) states that in addition to (a), which is the marine radio transceiver, VHF transceiver, a water resistant hand held VHF transceiver is recommended and it's going to be mandatory from July 2001.

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Q. We've had a look at some of these radios. Do you have one of those waterproof hand held ones?

A. This is an example of a waterproof hand held VHF transceiver.

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Q. What's the cost on some thing like that?

A. Of the order of \$600.

Q. Do they range in price?

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A. I expect they do, I don't know what different models cost. You can probably get them cheaper than \$600.

Q. We've had evidence that in fact you can get them as \$200.

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A. Waterproof transceivers?

Q. Waterproof transceivers.

CORONER: New Zealand made.

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HILL: Q. So is that in accord with your understanding?

A. I haven't taken any time to see what different models are available. If they're approved by the ACA then they must be acceptable.

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Q. The ACA?

A. Yes, ACA--

CORONER: Q. And if they're used by the Navy?

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A. The Navy is their own authority.

Q. They're likely to be acceptable, are they not?

A. As far as marine communication is concerned the Australian Communications Authority determines standards for communications equipment which have to be met before they're available for resale retail.

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Q. It's hard to imagine the Navy using something that wasn't adequate though?

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A. I'm not aware of what specifications the Navy equipment has and the relationship that the ACA might have. I don't believe the ACA has any authority over the Navy.

HILL: I think Mr Coroner ..(not transcribable).. which used to go through my mind that all of my equipment was made by the lowest bidder.

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Q. You then go on to say a proposed standard which addresses radio equipment installation, inspection, testing and survey is attached as appendix A. What exactly is appendix A, what is it meant to do?

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A. Appendix A was a checklist, it was a list that I

prepared as guidance, as a suggestion to the CYCA that they might adopt that in future races in order that they had some control over the quality of the radio installations on board yachts competing in the Sydney to Hobart Yacht Race.

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Q. This later your committee developed into a radio installation survey and inspection form, is that correct?

A. That's what I entitled it, yes.

Q. I take you to that document and perhaps if you could hold it up so that we could all see it, so that everyone's working off that document, that's if you show the Coroner. Now, you've got some 22 items listed on, if I can refer to as the Collinson document, alright. Was that in fact adopted by the CYCA?

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A. For the 1999 race, the CYCA issued their form which was entitled radio installation survey and inspection form.

Q. So it has the same title as your committee's form?

A. It does.

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Q. Are all the recommendations of your committee taken up?

A. My document had 22 items, the CYCA's has 21.

Q. What has been left off?

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A. The one item that was left off was my item 20, which was a spare VHF antenna, that hasn't been included on the CYCA's inspection form.

Q. So they've left off the spare VHF antenna?

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A. That's correct.

Q. I think you've brought along with you a spare VHF antenna, is that correct?

A. I have. This is a standard marine VHF ..(not transcribable)..

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Q. What, you would just have that stowed somewhere and you just get that out, do you?

A. As a spare, it can be stowed on board and if the main VHF antenna which ideally should be at the top of the mast is lost, then this can be produced and connected and used.

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CORONER: Q. For the record, it's a bit over a metre long, metre and a quarter is it?

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A. About a metre and a half.

CORONER: Metre and a half.

HILL: Q. It could be lashed somewhere on the yacht or indeed held in the hand, is that right?

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A. It could be held in the hand in an emergency if there was nowhere to lash it to. It could be held in the hand.

Q. You would connect it to the main VHF radio aboard the vessel?

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A. It could be connected directly to the main VHF. If the battery powering the main VHF transceiver had failed, it

could be, using an adaptor, connected to the waterproof hand held transceiver.

Q. And you just unscrew the small aerial?

A. You can unscrew the small aerial, use an adaptor and that would greatly increase the range of this. This antenna is quite inefficient. 5

Q. How much would you be - with that antenna, the small antenna that comes with the radio set, what sort of communication distance would you have? 10

A. Hand held to hand held, small craft to small craft, perhaps five miles.

Q. To helicopter? 15

A. The helicopter has a greater height and it could be perhaps 40 miles. This is using five watts output.

Q. If you had the spare VHF antenna attached? 20

A. Without doing any actual measurements, I would suggest you could probably double the range.

Q. So it's as simple as that. If you had the spare VHF antenna you can double the range of the small waterproof one that you would have? 25

A. I believe so.

Q. So even if your main VHF is knocked out, you still had that. What's the cost of a spare VHF antenna? What's the cost of that one? 30

A. Of the order of \$200.

Q. So that was left off the CYC document that they produced? 35

A. It was left off and my only thought is that the AYF document doesn't refer to an emergency VHF antenna and therefore it's not required under the racing rules of sailing.

Q. That's what was said? 40

A. No, no, that's my thought.

Q. Was it ever explained to you? 45

A. There has been no discussion with me in relation to this inspection form by any member of the committee.

Q. Were you told that they were going to adopt the form? 50

A. No.

Q. And you weren't told why they left off the spare VHF antenna? 55

A. There has been no communication with me at all.

Q. You then go on to say although practised in navigation and boat handling few yacht skippers have been actively involved in distress communication procedures. Many yacht skippers and crewmen who gained their radio transmitter certificates some years ago have not kept up to date with

the changes that have taken place in the last ten years in marine radio communication and have not undertaken any refresher education and training in this area. Do I take it that once you are issued with a certificate that's the end of the matter, is it? 5

A. That can be, there's no requirement for anybody to update their knowledge, there's no revalidation process. Once you've obtained a certificate which you could have obtained 20 or 30 years ago, that certificate stands for life. 10

CORONER: Q. Have the changes been substantial in that period in communication procedure and techniques?

A. The changes have been substantial, not only that, the actual examination process to gain the certificate has changed quite significantly. More than 20 years ago the test conducted by the then Department of Transport and Communications varied from state to state, there was no national unified syllabus for the examination which exists now. 15 20

HILL: Q. And there's no requirement of a refresher course as you've said?

A. There's no requirement at all. 25

Q. Do you have to renew the certificate?

A. No.

Q. So if I got one say in 1965 and never used one since, I could still be the radio operator on one of these yachts? 30

A. You'd be qualified to do it, yes, on paper.

Q. You then go on to say it was observed that a great many distress calls and messages were transmitted on 4483 kilohertz which were handled by Young Endeavour, Telstra Control, to the point that the radio operators became overloaded and worked and consequently delays occurred in alerting the shore authorities. I want to digress a little bit there. When you say 4483, what should they have gone on? 35 40

A. 4483 is the specified frequency for communication during the yacht race, during the 1998 Sydney to Hobart Yacht Race.

CORONER: Q. So in effect they've loaded - that had the effect of loading up the Telstra Control operators to an extent, is that right? 45

A. It's a complex issue in that a yacht may use - any vessel may use any frequency at its disposal when it's in distress, to gain assistance. The nature of the wording of the sailing instructions issued by the CYCA appears to lock the competing yachts into the use of 4483. 50

Q. For distress?

A. For communication with Telstra Control, because that's the one frequency that Telstra Control is monitoring. Yachts are still at liberty to transmit their mayday messages on 2182, 4125, 6215, which if a yacht was in distress their prime objective is to alert the shore 55

authorities via either limited coast radio stations or Telstra coast radio stations at Sydney or Melbourne radio and they in turn pass the information to AUSAR in Canberra. That would be the quickest way of doing it, if they've got sufficient power and signal strength from the transmitters on board the yachts to communicate directly with the shore. In doing that, the Telstra Control operators would then be unaware of the situation, because they're monitoring 4483. In order to keep Telstra Control informed, yachts would have to inform Telstra Control on 4483.

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Q. Of the mayday?

A. Of their distress situation.

Q. But using those dedicated distress frequencies would speed the process up would it of notifying AUSAR?

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A. Yes, if they - if an individual yacht is able to communicate directly with the shore using standard international distress frequencies, that would speed up the process but it would bypass Telstra Control.

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HILL: Q. In fact you go on to say that the fact that they didn't contact Melbourne or Sydney radio and come through rather than going through Telstra Control, seems to indicate a fundamental lack of knowledge with respect to the distress communication procedures, and this was the opinion of your committee, is that right? 5

A. Again it's an issue where there appears to have been little written guidance given to competing yachts in terms of what procedures, what radio communication procedures they should adopt in a distress situation. The wording in the CYC's sailing instructions-- 10

Q. What page are the sailing instructions?

A. Page 11 under radio instructions. Paragraph 39 decimal 2 states that "Telstra Control will assist yachts in distress by relaying traffic to the appropriate authorities. Telstra Control is not intended to tow, ferry, crew or relay private messages or telegrams." So the emphasis there is that Telstra Control will monitor 4483 kilohertz and in receiving any distress or mayday calls from yachts will relay those to the appropriate authorities, being AUSAR. 15 20

CORONER: Q. But are you saying that your committee took the view after hearing all the traffic over those days, that other work of Telstra Control had to be diverted to relay these maydays and that needn't have happened? Is that what you're saying? 25

A. What we're saying is that although we didn't monitor the Royal Hobart Yacht Club for 124 or 2182, there may have been yachts who transmitted mayday calls on the international distress frequencies directly. Those that didn't would then - would have transmitted their mayday calls on 4483, which would then have to be relayed on through Telstra Control to AMSA. 30 35

HILL: Q. You then say this, "the attached guide for operators of radio telephone stations in small vessels should be displayed near the radio equipment on every boat." So there is some sort of guide is there? 35

A. It's a single sheet of paper published by the ACA which lays down distress procedures. 40

Q. If that was say covered in plastic, laminated in something, it would be quite useful being aboard a yacht next to the radio? Is that what the committee thought? 45

A. It should be there as a reference, but in my view any person who is operating a marine radio on board the Sydney to Hobart yacht should be fully aware of the distress procedures in full as laid down in marine radio operator's handbook. 50

Q. We'll go into that a little bit more shortly, but what I want to go back to is that second line of this particular paragraph where it starts off 4483 and goes to the position of "to the point that the radio operators became overloaded with work, consequently delays occurred in alerting the shore authorities." You know that there was one principal radio operator on Telstra Control and that was Mr Lew Carter 55



and he had two offsidiers, one who took notes - well they both took notes, and one who read the weather at the beginning of each sked and at the end of each sked. You are aware of that?

A. I'm aware of that, yeah.

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Q. Presumably we haven't got the evidence of Mr Carter, but the Young Endeavour he would have gone aboard on the 26th some time in the morning, approximately 9 o'clock, and they go outside The Heads, as I understand it, and then he would have come up on the radio some time about 3 o'clock is some sort of tune-in type call, and then his sked begins at 8 o'clock that night and I think it takes about two hours to run through. So the next sked then is three the following morning, so we're looking at perhaps between the end of the sked at 8 o'clock and the beginning of the sked at three in the morning, about - what, about four hours sleep say, or there was time to take about four hours sleep. That 3 o'clock sked ends at about five. He might have taken some time to get 40 winks, but by about 9.30 there's lots of messages coming through, and it appears from the tapes that Mr Carter then is basically the radio operator right the way through the whole of the 27th and the night of the 27th, and the morning of the 28th. You've listened to those tapes and you've seen the transcript I think?

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A. I haven't listened to the tapes. I've read the transcript.

Q. You've read the transcript. Can one person possibly manage that?

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A. One person would be extremely tired. There were four or five distress incidents going on. Monitoring the HF radio, recording all the information, passing the information on to the appropriate authorities, discussing the situation with the Master of the Young Endeavour, all of that would have placed quite a severe load on Mr Carter. He would have been extremely tired, exhausted, it would have been difficult to make any decisions that he might have had to have made, especially latterly in the later stages of the race.

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Q. And having read the--

A. I believe that it's too great a task in this situation for one man. If the race goes according to plan, if there are no particular incidences, you can get adequate sleep, the skeds go according to plan, there wouldn't be a problem, but in this situation it was just overload.

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CORONER: Q. Even in an adverse but a less adverse situation it would be difficult for him surely?

A. It would certainly be difficult, yes. I mean there was - in my reading of the transcript, nobody else operated the HF radio and kept records, although he was assisted in keeping log books.

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HILL: Q. Having read the transcripts of those radio messages, what in your opinion was - how did Mr Carter perform?

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A. Mr Carter - I'm not aware of any formal qualifications

or experience that Mr Carter has. In order to be the radio operator on board Young Endeavour he must hold a restricted radio operator's certificate. In distress procedures it in my view is very important to follow the protocols laid down for the handling of distress messages, the response to distress messages, the control of the frequency in order that other vessels don't cause interference. The normal procedures, the distress procedures that Mr Carter adopted I felt did not follow the prescribed protocols of the marine radio officer's handbook.

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Q. But overall, considering the position he was put in?  
A. He did the best he could.

Q. Having that sort of situation and bearing in mind that you organised the radio listening watch in Hobart, did you have a system like that?

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A. We're fortunate in the sense that we're onshore. I'm able to bring in any number of operators. I have six four-hour watchkeeping sessions. Radio operators do a six hour watch and then are relieved. They may not do another one, if at all they may do another one in perhaps 12 hours time at the earliest. I was able to draw on for 1988 something of the order of 15 to 16 operators to cover the same period.

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Q. Well do you know of any reason why the CYC would not have been able to draw on an equal number of volunteers?

CORONER: Q. Or at least a system whereby there was an effective radio watch where Mr Carter could be spelled?

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A. But there is no manual if you like written by the CYCA, there's no procedures that I'm aware of, no document which lays down any system, procedure for the conduct of the race other than the scheduled sked times, so that the skeds are conducted, the yacht positions are recorded and the information is passed on to the CYCA race committee. But there is no document that I'm aware of that lays down what should take place in a distress incident for instance, and there's no guidance as to how the watchkeeping arrangements should be conducted. There are three people on board. There may be limitations on board the Young Endeavour in terms of how many people can be carried in order to perform the radio watchkeeping role. I'm not aware of the berthing arrangements, but the CYC have used those three operators for some time I believe.

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HILL: Q. You then go on to say in the next paragraph "the radio instructions must provide clear guidance for yachts as to the procedures to be adopted in the event of emergency and distress situations. The directions that are given in the radio instructions are inappropriate and out of place," and you say "see radio instructions paragraph 39.2." Was that what you were just reading before?

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A. That is correct.

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Q. That is, that basically the distress were to come through Telstra Control and then they would be passed on?

A. That is the only reference in the CYCA's documentation

on the radio instructions that refers to distress. It's the one sentence in paragraph 39 decimal 2. "Telstra Control will assist yachts in distress by relaying traffic to the appropriate authorities." That's the only reference to distress or any other procedures that may be applicable.

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Q. And in fact the word distress does not appear in the contents page of the sailing instructions.

A. It doesn't and neither does emergency.

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Q. You go on to say "yachts who called Hobart race check on CH81 and were unable to hear the reply from the repeater probably had USA simplex mode selected." What does that mean?

A. This doesn't relate to the actual distress situations that occurred in Bass Strait. This was just one of the perhaps 20 dot points that were raised during the meeting. It was found that yachts entering the Derwent having nearly completed the race, one of the requirements is that yachts give their position report on entering the Derwent, rounding Tasman Island with an ETA into Hobart. We use a VHF repeater which has been established at Cape Raoul which is near Tasman Island. VHF repeaters work on a duplex basis, that is, they receive on one frequency and transmit on another, and in order to use those repeaters the VHF radio equipment must be switched into the duplex mode. Now VHF transceivers are provided with both an international channel option and what is called a USA channel option. The USA channels many of them are switched into a simplex mode when that option is selected. The VHF repeaters don't function correctly if a yacht tries to access the repeater in the USA mode which is a simplex mode. Now it's very easy to switch a VHF on and not check that it's actually in the international channel mode.

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Q. Well actually the committee went on and said that "many users of marine VHF are not aware of the technical difference between the international channel arrangement and that of the USA."

A. It's my experience that people using VHF radio, boat owners, small boat owners, are not aware of the difference between simplex and duplex and how repeaters work and a number of other technical issues. They basically gain an operating certificate without understanding some of the sort of fundamental technical issues.

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CORONER: Q. In the modern course with a modern certificate are these issues covered?

A. They're covered but they still need some amplification by the person covering the course.

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Q. By the teacher?

A. Yes.

HILL: Q. The committee also made a statement saying that "there was a great deal of concern was expressed over the action of Telstra Control stating the names of possibly missing or deceased crewmen over HF radio which is monitored

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by the press and others, thus making those names public knowledge. The nature of such information is extremely sensitive and should have been passed over secure communications via INMASAT to the shore authorities." So there was a system of putting out in a less public way, is that correct? 5

A. It was raised by one of the operators that he felt that this was not acceptable, that the names of possibly deceased members of the yacht crews were publicly broadcast, and if there was a facility on board Young Endeavour to relay the information via secure transmissions then that should have been used. 10

Q. Then there was also concern that "advice was given to Team Jaguar by Telstra Control to activate her EIPRB so that position could be determined was inappropriate as Team Jaguar was not in immediate danger, and comment has been received that professional radio operators should be employed on Young Endeavour." First of all I'll deal with that, the concern about the EIPRB aboard the Team Jaguar being set off. What-- 15 20

A. The authorities deem an activated EIPRB to be an indication of distress. They treat an EIPRB signal, the reception of an EIPRB signal, in the same way that they would a mayday call, a mayday signal. EIPRBs, and there were a number activated at the time, EIPRBs shouldn't be solely used for the purpose of determining a vessel's position unless that vessel is in distress and has no other means of providing that information. 25 30

Q. Because I suppose it diverts the rescue authorities to another position as it were?

A. An activated EIPRB signal that's received by AUSAR is treated as a vessel in distress. 35

Q. Comment, this one here, "comment has been received that professional radio operators ex-Telstra coast stations should be employed on Young Endeavour." Is that an easy thing to do? Are there plenty of them? What's the situation? 40

A. The CYCA did in fact use the services of a professional radio operator during the 1999 Sydney to Hobart yacht race. A Telstra operator from Brisbane Radio was used on board Young Endeavour. 45

Q. How many?

A. Just, just one in addition to the three personnel that had been used previously. 50

Q. In addition, so what, there were four?

A. It's my understanding there would be four, yes. 55

Q. So there was the Telstra operator. Do you know who else?

A. Mr Carter, Mr and Mrs Brown. 60

Q. That's to your knowledge, they were the ones used in the 1999?

A. That's to my knowledge, yes.

Q. The last paragraph on that page was - this is the committee - "it is felt that the role of race support vessel should be reviewed and consideration should be given as to whether the Young Endeavour is the most appropriate vessel for that role." Why?

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A. It's not a criticism of the Young Endeavour as such, it's more - it was made - a comment made by other members of the committee. It really reflects that the whole communication process should be reviewed, not just the Young Endeavour. There's no criticism of the Young Endeavour's role.

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CORONER: Q. And in fact it might be entirely appropriate, is that what you say?

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A. It might be, but the committee felt - members of the group felt - these are the radio operators at the Royal Yacht Club, felt that the whole communication process including the Young Endeavour should be reviewed.

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HILL: Q. And then the committee also viewed - stated this, "a view was held that all yachts competing in ocean races should carry a 405 megahertz EIPRB, especially since the cost for these EIPRBs has reduced substantially in the last few years." I think that--

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CORONER: We've heard a deal of evidence about that.

HILL: Q. We've heard a great deal about this. That's still the view of the committee I take it?

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A. Yes, it's a view held by I suggest most boat owners, yacht owners. The 406 EIPRB is a significant improvement over the 121 decimal 5 and 243 megahertz EIPRBs. It's standard equipment on vessels over 300 tonnes and it has been since 1992 under GMDSS. Not only that, in the year 2005 the transponders on board the COSBAS Sarsat satellites which receive the signals from the 121 decimal 5 EIPRBs they're being switched off, so from 2005 the 121 decimal 5 EIPRBs will not - their signals will not be received and relayed by the orbiting satellites. As far as I know they'll still be received by other flying aircraft. So the trend should be to progress towards the 406 megahertz EIPRBs.

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Q. And you go on to say "yachts" - this was the committee - "yachts should also carry large identification letters on their hulls for better visual identification to avoid confusion in circumstances where a number of yachts in the same area are in difficulties." I take it that your team whilst listening realised what was happening did they?

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A. The radio operators were monitoring the proceedings on 4483, were aware of the difficulties that the search and rescue aircraft were having in locating and identifying particular yachts. There was confusion over whether this yacht was A or whether it was B, and one of the operators felt that this was a method of possibly overcoming any confusion in terms of identifying individual yachts.

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Q. In other words, adopting the position the Navy have. I think all navies in the world don't they, they have numbers on the sides of their vessels?

A. It's very important during distress communication, radio communication, not only to identify the vessel by its name but also by its call sign. It's one of the requirements, one of the protocols laid down that the call sign should be included in any distress communication process. It's very important to identify vessels clearly. There was a case in point where during the '98 race a yacht called Sydney--

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Q. Sydney?

A. --was reporting that it was returning to Sydney, and there was confusion about whether that was the actual case. Was it Sydney returning to Sydney or what was happening. Simply because Sydney is a place and Sydney is a yacht name and there were - reception difficulties made the problem of interpreting the signal more difficult.

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Q. I notice in fact throughout the transcript there are people coming up without call signs. We don't know--

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A. I don't remember reading the transcript reading of any call signs used during the three days involved.

Q. And then the committee said "finally standards for liferafts need to be established and enforced. It was reported that one of the liferafts was black in colour." That was the canopy as well wasn't it?

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A. I'm not familiar with this particular paragraph. One of the committee members either read a press report or was aware that liferafts were difficult to locate and wished that comment to be included in the report to the club's committee.

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Q. You had no feedback of that at all?

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A. No.

Q. You then saw the CYC race review report, or the Bush report as it's been termed, and you had some problems with that as it seemed to miss various points. I'm looking at that, it's report of the Sydney Hobart, of the 1998 Sydney Hobart race review committee briefing paper. Do you have that?

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A. I have that, yes.

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Q. And you say there that this briefing paper has been written on the basis that you may not have had the opportunity to read the report of the race review committee or may not be in a position to determine the accuracy or otherwise of many of the technical comments concerning radio communication, and there you lay out - you say "the briefing paper is intending to highlight certain points concerning marine radio communications mentioned in the report, and to provide comment and correction where technical errors have occurred. It is an attempt to provide information with respect to the findings of the review committee and their recommendations in relation to the education of those sailors in future Sydney Hobart yacht races and other races,

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the planning necessary on the part of those organising such races, and the radio communication infrastructure required to provide safety coverage for the competitors in such events." And in section A you have listed in dot format some of the technical aspects in the report "which deal with the radio communication matters that give me cause for concern." So this is not the committee, this is you? 5

A. This is met.

Q. And in section B you outline those major issues on which you believe further recommendations should be made, particularly with regard to education and training of crews, and the radio installation on board yachts sailing in Sydney Hobart yacht race. And section C covers the recommendations stemming from the report that directly affects the radio installation. If I go to the next page which is section A, and you have taken in dot point and page number each of those, and probably 5 is important. On page 5 rather of the report it says "consistently around 10 per cent of the fleet retires for a variety of reasons. Some typical causes for retirement include electrical problems." So that's in the report and what you say, your comment on this is that "this figure of 10 per cent appears to be an acceptable figure as far as the CYCA is concerned. Given that no effort has been made to investigate the reasons for the electrical problems which arise and no effort made to improve the safety checks that could possibly eliminate some of the causes," and you talk about "it is expected the average yacht will have low battery power or poor battery connections" on page 65. You find that disturbing, that it's simply acceptable as it were or appears to be acceptable that you get retirements for electrical problems? 10 15 20 25 30

A. It was the statement on page 65 that I couldn't come to terms with, the fact that the CYC states that as far as they're concerned it is expected that yachts will have poor radio installations, radio and electrical installations. They're stating that batteries will have poor connections, batteries will be in poor condition, that radios will have ineffective earthing systems and so on. I find it difficult to come to terms with that statement. Those conditions are referred to as faults by the ACA. Poor batteries, poor battery connections, poor earth connections, those are termed faults, and if they're faults they should be corrected. They should not be found on boats before they sailed in the, in the yacht race. 35 40 45

Q. I take it what you're saying is that with a bit of diligence these things can be corrected?

A. Faults can occur during the race, but for a yacht to sail with a poor earth system or poor battery connections or batteries in poor condition isn't acceptable, and that can be eliminated or corrected by adequate inspections before the race. 50

Q. You then looked at page 13, 54 and 69 in its various statements about introduction of a radio certificate, and your comment on that was "the lack of consistency in referring to what in my opinion should be the radio 55

installation survey inspection report form indicates either (1) a lack of knowledge or little command of the particular subject, or (2) a lack of real interest in the particular subject, and you also point out at page 20 there about EIPRBs, or rather page 20 of the report, points about "EIPRBs do not radiate effectively to the satellite or aircraft unless in the water." I think you make in your comment that "emphasis should be placed on the deployment of liferafts from aircraft during the compulsory race briefings but instructions on how EIPRBs should be correctly operated was obviously not thought to be important." What is it, the points that you are making there? 5

A. There's a number of points there, the first point being that either the racing - well not either. The racing rules of sailing as published by the AYF should give adequate emphasis to proper installation, radio installations on board yachts. These would then be reflected in the sailing instructions issued by the CYCA and that the crews of yachts should have - should receive adequate education in terms of for instance EIPRBs. There was a case in point only in the last two weeks. A fisherman in the south of Tasmania activated an EIPRB and he was on television on the Today Show saying the authorities had failed him because they didn't rescue him within an hour, because he had been told on purchasing the EIPRB that that signal would be relayed instantly to the search and rescue authorities and a helicopter would be launched on the way within the proceeding minutes and he'd be plucked from the sea. This is a matter of education and it seems to me that it's sadly lacking everywhere, that boat owners are not aware of the basic technical aspects of EIPRBs and radio equipment, and they are basic technical aspects, they're not difficult to comprehend. 10 15 20 25 30

Q. You then moved on to page 31 and page 166 of the report, and at page 31 it said "forecasts and communications to competitors, weather information was available to the fleet through a number of avenues, by HF radio on board yachts through BIS, BIM and BIH," and at page 166 it's the glossary, BIH was Hobart Radio, and your comment on that is that "the Telstra coast radio station Hobart Radio, call sign BIH" which has been referred to "was decommissioned in 1991." So I presume that if you're trying to listen into that you're not going to get anything? 35 40

A. It's - these references are made to highlight the fact that the sailing instructions issued by the CYCA, report issued by the CYCA is a review into the yacht race. The people involved are not aware of the infrastructure, the radio infrastructure. They're making comments about Hobart Radio which hasn't existed for nearly a decade, referring to weather forecasts transmitted by Hobart Radio which was dismantled. They're referring to OTC, OTC failed to exist since 1993 when Telstra took over. These are just a reflection of if you like the lack of interest given to the subject. 45 50 55

Q. You also - at the bottom of page 63 you have a comment and you say "in my opinion" - and this is because you've



referred to the various pages of the report - "two daily mandatory position reports are quite inadequate for such a race. There should be a provision for up to four safety radio skeds within a 24 hour period for yachts to register their position and conditions with race control." Why? 5

A. Yachts are vulnerable, they're small craft. I sailed on 60,000 tonne ships. Australia in the Ausrep scheme requires that a large ocean-going vessel reports daily. Yachts are a great deal smaller, much more vulnerable, and given the fact of everyone knows that Bass Strait is notorious for its weather, the race sails through Bass Strait, it would seem to me that for safety reasons four times a day, every six hours, some mandatory position reports and status reports should be accepted as a standard rather than two. It was increased for the 1999. They had provision for four position reports during the 1999 race. 10 15

Q. I think you also say there to "see AMSA'S Ausrep scheme for small craft reporting." That sets out a scheme does it? 20

A. Yes, that's just - AMSA is quite prepared to receive from individual yachts, not these competing in the yacht race but individual yachts, a reporting scheme from yachts. 20

Q. So if I set off alone aboard a vessel, say up to Queensland, AMSA's got a system where I can report in-- 25

A. On a daily basis.

Q. --on a daily basis and they keep an eye on me as it were?

A. They keep a record of your reporting, where you've sailed from, where you're sailing to, how many people are on board, relevant details. 30

Q. Over the next page, radio communications, you look at page 64 and there it says "in the report both HF and VHF equipment are prescribed under the category 1 safety. HF is still a major radio communication method for maritime and aeronautical use primarily because of its range. 4483 kilohertz is recognised as being a good working frequency for the race offering good local as well as medium distance communication capabilities." Your comment is "HF is not a radio communication method. The range over which communication can be reliably maintained over a 24 hour period will vary with the time of day," and you say "see the IPS propagation predictions." What exactly are you saying to them there? 35 40 45

A. The frequency 4483 is prescribed as the race frequency, so the race is locked into that one frequency. There is a problem in that Penta Comstat, which is a coast radio station further up the coast, also uses that frequency on a regular scheduled basis for transmitting weather forecasts and also uses that frequency at the time of the Sydney to Hobart yacht race to conduct its own skeds with I think it's the Coffs Harbour yacht race. So during the distress incidents that were taking place on 4483, both Penta Comstat coast radio station were suffering interference from the communications taking place during the - with the Sydney to Hobart yachts and vice versa, so the choice of 4483 in that 50 55

context isn't good. 4483 has to be monitored by the Royal Yacht Club in Tasmania from the radio station there in that if the radio equipment were to fall down, that is fail, for whatever reason on board Young Endeavour, the Royal Yacht Club could take over communication. 4483 as a communication frequency has a range which varies as the IPS, ionospheric prediction service, indicates. During the night reception from the yachts off the New South Wales coast on 4483 is acceptable. In Hobart it's very difficult to receive signals on 4483 during the day because of the variation in propagation.

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Q. I think that when one reads the transcript there was this other race, Penta Comstat?

A. Penta Comstat.

Q. Which was another race working on the same frequency? 5

A. Yes.

Q. I think Mr Carter actually had at one stage a mayday on his hands and they were cutting across?

A. There was some interference caused both to Penta Comstat of course conducting their race and I don't know that their race was going smoothly and Mr Carter in fact apologised to Penta Comstat for causing interference. 10

Q. But surely the situation must have been that if Penta Comstat realised on the same frequency they had someone else had a mayday, they should have kept quiet and simply listened? 15

A. Then there would have to be some procedure established by Penta Comstat for the Coffs Harbour race to say that if this were to occur we will change to another frequency to conduct their communication. It's a case of management, frequency management, procedures established for particular circumstances that might arise. 20

Q. It's not ridiculous to suggest that a mayday would have precedence over a yacht race, is it? 25

A. Any mayday has the top priority in any - over all communication. Mr Carter is a gentleman and he apologised for causing interference. 30

Q. But it should have been the other way around?

A. In a situation where an operator has the responsibility of controlling the situation, he has to take control. There are procedures laid down which enables a radio operator to use the words sealance mayday, in other words keep clear of this frequency there's a mayday situation going on, do not cause interference. 35

CORONER: Q. How can it be that two - the same frequency is used over two races? If I could use the tennis analogy, you're playing tennis on adjoining courts, it's the same game on adjoining courts and the balls are going from one court to the other. I mean, it seems incredible to me that none of the yacht race racers couldn't have used another frequency. Is that not possible? 40 45

A. If you look at what would take place normally, there are schedule times when Penta Comstat transmits its weather forecasts, there are schedule times when the CYCA conducts its race skeds and they interleave. It's only when you find a continuous communication situation developing on 4483-- 50

Q. They encroach?

A. --that interference occurs. 55

Q. Would it be hard to have one of those races on another frequency altogether?

A. No, by arrangement.

Q. Be easy, wouldn't it?

A. Yes.

HILL: Q. Does it cost money to have one of these frequencies?

A. For the 1999 race the CYCA in consultation - I believe in consultation with the ACA negotiated a new race frequency. That frequency was not a maritime frequency and all yachts competing in the Sydney to Hobart Yacht Race had to have their radio equipment either recrystalled if they have old equipment which utilise individual crystals, had to have individual crystals purchased for that, or in the case of more recent equipment which is microprocessor controlled and uses a program chip, they had to have their - obtain a new program chip which cost about \$60.

Q. What about the purchase of the frequency, does that cost money?

A. There is no purchase of a frequency. That frequency was allocated on a once only use by the ACA. The ACA issued if you like an authority for the use of that frequency solely during the Sydney to Hobart Yacht Race and it was rescinded immediately afterwards.

Q. Is there a difficulty with obtaining the two frequencies?

A. I'm not an expert as far as frequency allocation on the international scene is concerned, I think the ACA is the authority to consult on that.

SHORT ADJOURNMENT

Q. The top of page 4 I was at document 3. You see there it's the second bullet point, page 64 of the race review says the radio relay vessel uses a standard marine HF radio transmitting with a power of 150 watts with an antenna system similar to that used by the fleet. The installation and commissioning of the radio on the radio relay vessel is critical and results in a high quality signal which can be heard by the whole fleet as well as the race control centre and the CYCA. Only a few yachts exhibit similar signal qualities. Then at page 65 the review stated the quality and reliability of communication between the race control centre, the radio relay vessel and competitors were not as good as it could have been with some intermittent and low quality transmission taking place. Your comment on that was the expression high quality signal and low quality transmission are not technical terms that would be used in describing radio communication signals. Communication engineers deal in signal strength measured in microvolts per metre, measured at a specified distance from the transmitter, the signal quality is more a function of the type of modulation employed. What is it that you're bringing out there in layman's terms?

A. In layman's terms I think the review committee tried to look at radio communication without referring to somebody with any real technical expertise. I'm being rather pedantic here perhaps as I am through most of my

documentation but page 64 refers to the marine installation on board the Young Endeavour. It refers to a standard marine HF radio transmitter. Many of the yachts sailing in the Sydney to Hobart Yacht Race have radio transmitters which are not of the latest design, some of them are still crystal controlled, some of them only radiate 50 watts of RF. The standard marine HF radio I believe on board the Young Endeavour in fact only transmits 100 watts but that's not a point of issue. I believe here between pages 64 and 65 that the review is actually contradicting itself and saying that it's a high quality installation on board the Young Endeavour which results in good signal transmissions and on page 65 it's contradicting, saying that in fact those good signal conditions didn't occur. The installation on board Young Endeavour in fact had its problems in that the HF transceiver had to be replaced almost immediately at the start of the race and later on a fuse blew and there weren't spare fuses carried on board for the transceiver. So the installation although stated to be reliably maintained and being critical isn't given the importance that it requires.

Q. The review or the Bush report goes on to say at page 65 it should be acknowledged that the average yacht's HF installation will always be less than optimum. At the very least the antenna system used by most yachts, backstay antenna or deck mounted whip are not efficient. The physical length of these antenna is significantly shorter than the required electrical length. The optimum length for a halfwave antenna for 4483 kilohertz is approximately 32 metres. Any other length results in transmitted power being directed through the earth system, that is effectively lost if in addition to this the effect of the antenna being inclined as the boat heels a poor power system due to battery power or poor connections and a poor earth system are taken into consideration, the result is reduced transmitted power, that is reduced signal. Your first comment on that is I find it difficult to come to terms with this statement. For the review committee to admit that the CYCA accepts that yachts are going to have poor battery connections and poor earth connections and further fails to initiate corrective measures is to me quite unacceptable. Now, that's the first part of that and you go on from there and you say the radio operator tunes the antenna to the frequency in use, using a manual antenna tuning unit or the antenna is tuned by the automatic antenna tuning unit which is found with most modern MF--

A. MF and HF, both.

Q. Right, transceivers. This results in the antenna presenting the correct impedance and radiation resistance to the transmitter and the receiver for optimum reception, resulting in the optimum condition for the transmitter to deliver power to the antenna. Are you saying that basically when he talks about the length of 32 metres et cetera that's--

A. There are two points to this, (a) we've covered the poor battery connections and the poor earth connections. The earth connection is very important because it is not an

earth to do with safety, the earth is part of the antenna system. Without a good earth connection the transmitter doesn't radiate effectively. The actual calculation is incorrect in that the antenna should be calculated on the basis of a quarter wave antenna. The overall antenna is a centre fed half wave but the lower quarter if you like is the actual earth connection, so it's actually a quarter wave antenna. I'm just being pedantic saying their method of calculating the antenna length is in fact incorrect. If an antenna is not properly matched to the frequency then it doesn't radiate effectively. So the important thing is that it's the antenna that should be tuned. Again being rather pedantic most radio operators say they are tuning the transmitter. If they understood that they were tuning the antenna they would also realise that they are tuning the antenna for reception as well as for transmission. You can't receive efficiently on an antenna that's not tuned for that frequency. But in being pedantic it makes the point when you gain the understanding. I'm just pointing out again they don't seem to have grasped the technicalities of the subject, there doesn't seem to be somebody on the committee with a background in marine radio communication.

Q. The other fact of course to accept that yachts will always have this HF installation less than optimum. That is unacceptable?

A. From a safety point of view, yes. You shouldn't be putting to sea in a boat that has from the start a poor installation.

Q. Is it--

A. The radio installation on board a yacht is critical not just for reporting your position in a sked situation but in a distress situation it is vitally important for relaying, passing the mayday information and you can't just rely upon an EIPRB in the hope that that's your only means of alerting the authorities to your situation.

Q. The so-called less than optimum, is it curable? Can we--

A. Yes. A proper installation, if it is inspected, would highlight any deficiencies and those deficiencies can be corrected. I've got a copy of a report from a surveyor highlighting the fact that the HF earth system is faulty on a yacht and no doubt that yacht would have to have its HF earth system replaced.

Q. So the statement there that will always be less than optimum is simply incorrect, you can tune the radio, it's as simple as that?

A. You can have an installation that is properly maintained and properly operated.

Q. Over at page 5 then at bullet point - the first bullet point and page 66, another problem that surfaced, that's page 66 of the review, another problem that surfaced in the 1998 Sydney to Hobart Yacht Race was the inability of the relay - sorry, the radio relay vessel to efficiently utilise

an additional channel for distress management. It became very quickly that the load on 4483 kilohertz channel was far too great.

CORONER: We've covered that really, haven't we?

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HILL: Q. The other difficulty about that is of course I think that Mr Carter was obliged to keep a 24 hour watch on 4483, is that correct?

A. Mr Carter as I understand it had no discretion in terms of changing to other frequencies. He had one HF transceiver to monitor one frequency. The race instructions, the radio instructions stipulate that the radio relay vessel, Telstra Control, will be monitoring 4483. If he were to give an instruction to the effect that he would now be transmitting on another frequency, the possibility exists that perhaps only half the fleet would hear that and the other half of the fleet not hearing that instruction would still be assuming that communication was taking place on 4483. So there's a problem in frequency management there. There is no procedure set in place to deviate from the stipulated race frequency of 4483.

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Q. The next bullet point is page 66 where it said finally the radio relay vessel did not have the capability to communicate directly with many of the search and rescue aircraft, particularly fixed wing aircraft. Aircrafts are not normally fitted with marine VHF channel 16 which operates on 141.3 megahertz and use aviation frequencies of 121.5 megahertz distress and 123.1 megahertz search and rescue. Your comment on that is that 156.8 megahertz is the frequency which is designated as VHF channel 16.

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141.3 megahertz is not in the VHF maritime mobile frequency allocation. What exactly are you saying there?

A. Why they have chosen to actually specify the frequency as 141.3 megahertz I don't know. Everybody refers to channels in the VHF marine band as channel 1, channel 16, channel 73. We don't normally refer to the frequencies involved so I'm not sure why they've raised it. I'm just pointing out here that having raised that frequency of 141.3 megahertz it's not correct, it's incorrect. The actual frequency is 156.8 megahertz. It's just another indication that there is no technical expertise on this review committee. It says that the radio relay vessel did not have the capability to communicate directly with many search and rescue aircraft. In reading press reports and other documents, my understanding is that many of the helicopters carried marine VHF channel 16 transceivers and were expecting to be able to communicate with yachts in distress and the radio relay vessel on marine channel 16. I may be wrong in that but that's my reading of the material I've seen.

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Q. At page 66 of the report it says prior to 1996 Telstra operated maritime HF facilities in Sydney, Hobart, Melbourne and Brisbane. These facilities have now been consolidated into facilities in Melbourne and Brisbane. What you point out in your comment is HF receivers and transmitters and

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their associated antenna are still located at Sydney but are operated from Brisbane. Yachts are therefore able to communicate with a Telstra coast station physically located at Sydney.

A. Again it's a matter of the right information and not misleading people. If anybody has an understanding of propagation conditions and they believe that they are communicating from a position off the New South Wales coast and having to communicate to the antenna situated up in Brisbane they would use perhaps a different frequency to the one which they would use knowing that they were communicating with the actual antenna systems at La Perouse in Sydney. So it's misleading information. The antenna systems are physically located at La Perouse Sydney, although the operator sits in Brisbane.

Q. Then at page 67 of the review it says in adverse weather conditions and for the latter part of the race the radio relay vessel is often out of range. At page 149 under the heading of communications, communication between the race control centre, the radio relay vessel and the fleet were unreliable or had the potential to be because (1) geographical remoteness of the race control centre at Hobart. What you point out is that HF radio communication using the appropriate frequency is capable of providing long range communication over thousands of miles. The lack of direction to the fleet, the radio relay vessel, the race control centre to use appropriate frequencies is again indicative of the lack of understanding of radio frequency propagation or of poor race management. You say there see IPS radio frequency propagation predictions for December of 1998 for the optimum HF working frequencies to be used for reliable communications. In other words, there is a booklet that tells you which will be the best frequencies during any set period, is that right?

A. There are publications, it's available on the Internet on a website with the ionospheric prediction service. You can look up point to point situations and for any particular time of the day or night on a given date the appropriate frequencies are indicated for communication. The problem lies in that 4483 kilohertz is not a frequency which suits all conditions in all situations. It has a ground wave component which is fine for local communication, it has a sky wave component and the sky wave component varies with day or night. At night, the fleet can be monitored and communication can be established from Hobart to off the New South Wales coast. It's very difficult to do that with good signal conditions during the day. A frequency of 8 megahertz gives good signal conditions generally speaking throughout the day.

Q. You say at page 73 of the race review, the Bush report, appears this ability of yachts and their equipment to withstand the conditions, while this is not recorded each year, experience demonstrates that it is not unreasonable that the following occurs, flat batteries and minor electrical problems. What you say to that in your comment is I find it difficult again to come to terms with this



statement. I believe that it is unreasonable to accept that yachts will have flat batteries when the battery is the sole means of powering the radio installation and further fail to initiate corrective measures. I find this quite unacceptable. Can you expand on that?

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A. Car drivers often find that in the middle of winter their battery lets them down. It's been fine for two years and suddenly it's cold, the oil in the engine gets thicker and the battery doesn't start the engine. If - and I'm not a yachtsman I should point out, but if I were to set out on a yacht race of this kind, one of the things I would ensure is that my batteries were in excellent condition. Flat batteries can arise because they are old, they've become degraded or they are not being regularly charged. Charging on board a boat requires that the engines be started and the engine has an alternator or a generator which recharges the batteries. Radio batteries should be separate from batteries that start the engine, otherwise there's a problem if you flatten your radio batteries and those batteries are used for starting the engine you can't start the engine to recharge your batteries. Batteries are critical. The condition of those batteries can't be in question.

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Q. So although it may be found that this occurs, it's hardly reasonable, that's what you say?

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A. I find it unreasonable to make that - to have that statement there.

Q. Down the bottom there at page 84 was the bullet point that dealt with SAR communications, that's search and rescue. You make this comment. You say between pages 112 and 136 of the review a number of references are made to the inability of yachts to communicate with the search and rescue aircraft, fixed wing or helicopters. This appears to have been due either to the VHF on board the yacht being unserviceable or the crew not being aware that the search and rescue aircraft could communicate on marine VHF, using VHF channel 16 or the on-scene search and rescue channel 6. The report covers this aspect on page 148 in this section. The review committee's recommendation that yachts must carry a waterproof hand held marine VHF transceiver is timely. However, the recommendation should have also specified that the hand held be fitted with channel 6 as well as channel 16, the two on-scene search and rescue channels. So there are two distinct channels are there?

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A. Channel 6 is the international distress emergency safety and calling channel, channel 6 is recognised as an on-scene search and rescue coordination channel. In using channel 6 for a particular incident, it then frees up channel 16 for other users.

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Q. With that hand held radio you've got there, what, are the channels just set are they?

A. The hand held radio is programmed with 55 international channels which includes channel 16 and channel 6. There is a button which you can press to bring up channel 16 at any time. Channel 6 you simply dial up or scroll through. So all the channels are programmed into that transceiver. I'm

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just making the point that channel 6 is available as an on-scene search and rescue channel, it's recognised as such and should be indicated.

Q. Then you deal with section C which were the radio installations at the Royal Yacht Club of Tasmania, is it? 5  
A. That's correct.

Q. Page 160 had a compulsory recommendation and page 161 was only a recommended. It deals with the various things such as 400 to 1000 watts at the Royal Yacht Club of Tasmania and they talk about 100 PEP(?). What you say about this is increasing the power output of the HF and VHF transmitters on board the radio relay vessel or at the Royal Yacht Club Tasmania will not result in signals being heard by yachts who have inefficient antenna systems, poor battery connections and poor earth connections. It's as simple as that, is it? 10 15

A. My reading of the review committee's report is that power - transmitter power overcomes all. In other words, if you can blast through with 1000 watts that will overcome any deficiencies on board the yachts. The other point I wish to make is that the compulsory recommendation from the CYCA that the Royal Yacht Club fit itself out with a 400 to 1000 watt transceiver goes against the ACA's rules and regulations which limit the transmitter power output for a limited coast radio station to 400 watts, so we're not entitled to use a transmitter having a power output of greater than 400 watts and certainly not 1000 watts. 20 25 30

Q. So this compulsory matter and this recommended matter is really brought about by a lack of knowledge in what you can do and what you can't do and what result you're likely to get? 30

A. Yes. The same applies to VHF as well, they make a recommendation. Sorry, I'm leading you. 35

Q. No, no, you tell me?

A. They're making a recommendation earlier on that - later on that 50 watts should be - I think it was 50 watts should be employed for a VHF transmitter and in fact again vessels at sea are limited to 25 watts, they're not entitled to fit a transmitter having a power output of greater than 25 watts and a limited coast station cannot exceed 50 watts. 40 45

Q. What they've already got, the equipment they've got, if it was properly used and properly tuned, that would go a great deal of the way of resolving a lot of the problems that they appear to have, is that right?

A. There are several aspects. One which we've covered already, the installation of the radio equipment on board yachts. If yachts have adequate installations there should be no problems in communicating with them, other than actual physical damage occurring, as it yachts taking on water and flooding battery compartments, or losing the antenna systems. The radio relay vessel and the Royal Yacht Club installation could certainly - and has been fitted out with a 400 watt transceiver. So we have taken - the Royal Yacht 50 55

Club has taken the recommendation to improve the radio installation at the Royal Yacht Club and a 400 watt transceiver was fitted there. I'm not sure what equipment was fitted on the radio relay vessel for the 1999 race but presumably similar equipment would be fitted there.

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Q. You've looked at the recommendations that have been made in the race review report by Mr Bush for the CYCA and what you say is this and I'm looking at the last page, page 9. However, this will not be the answer to the problem of communication with the yachts in the race. This is the last paragraph. This can only be overcome by (a) improving the standard of radio installation on board yachts and the radio relay vessel and at the race control centre and (b) the education of the yacht crews in the use of (1) radio communication equipment, (2) the appropriate radio frequency for the range over which communication is required, (3) EIPRBS and (4) search and rescue radio communication. So it's really two points, not just from the CYC's point of view but the yachtsmen themselves have to realise that they require training in this area to effectively function if a disaster should occur, is that basically it?

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A. That's correct but it stems from the AYF documentation in not placing significant or appropriate importance on the subject, which would then be reflected in the sailing instructions issued by the CYCA. There's no reference made at any time in the AYF racing rules of sailing, or the CYC's radio instructions, to the procedures, regulations, protocols laid down in the ACA's marine radio operator's handbook, which is the reference manual. That is a document that has to be carried on board every vessel. It's there to be used as a reference.

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Q. That's document number 6 in this line of documents.

A. The overall thing is that communication has to be managed in terms of the Sydney to Hobart Yacht Race like any other resource.

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Q. Document 4 which says notes and comments on the report of the 1998 Sydney to Hobart race review committee May 1999 and it deals with the Australian Yachting Federation's racing rules of sailing for 1999 to the year 2000. You've told me that there's no need to go through that because it really encompasses a bit more but deals with what could be. I suppose it is a criticism of the AYF rules but it also brings to their notice the insufficiencies within the rules that need to be corrected.

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A. Yes, document 4 is basically a summary of everything that we've looked at so far.

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Q. And radio 5 is again a summary - you don't have document 5? Document 5 is it? Okay, I'm getting mixed up, wrong frequency. It can happen, you know. That's the 1998 Sydney to Hobart Yacht Race and that again is going over what we've looked at just now in the second document, is that right?

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A. No, document 5 I was asked to look at volume 8 of the evidence.

Q. This is a critique on volume 8 which is the transcripts of the radio?

A. That's correct.

Q. And it highlights what you consider the various aspects that went wrong or could have been done better, is that how you see it?

A. Yes, that's correct.

Q. Then document 5 is--

CORONER: Is that 5A?

HILL: Q. Yes, 5A I'm sorry. That's an AMSA document which was sent out in regards to the use of cellular telephones for distress and safety communications. I understand that what AMSA was saying is that they're not saying don't use a mobile telephone if that's all you've got but it's far better to be on the radio frequencies so that everyone else knows what's happening, so that in effect people can simply come up on the radio frequencies and say it's alright, I'm only so far away, I'll proceed there immediately, whereas if it's a mobile phone, well they won't hear it. Is that what AMSA were driving at there?

A. Yes, this document is published by AMSA, it was published in 1995 as a result and this document is really directed at large ocean going vessels, it's not directed at small craft. In fact I suspect that many small craft skippers would not have seen this document, wouldn't be aware of it. AMSA were concerned that masters of ocean going vessels, especially coastal vessels, where they have mobile telephones as a permanent installation so that the master of the ship can telephone the head office of the shipping company directly, when a vessel was getting into difficulties, perhaps suffered a distress situation, the master would telephone the authorities using the mobile phone. This brings with it the problem that no other shipping in the area would then be aware of that particular vessel's circumstances and AMSA issued this as discouraging ship owners from doing it. In using mobile phones, it's a closed channel, nobody else is aware of the communication and if you are relaying important information that perhaps other people can assist you in coming to your assistance, they're not - nobody else is aware of that. And that information then has to be re-broadcast by Telstra coast stations or limited coast stations or someone. So it's a practice to be discouraged. However, having said that, the international radio regulations say that if you're in distress you may use any means at your disposal to get assistance and if all you have is a mobile phone then of course you'll use it.

Q. Document 6, that is the marine radio operators' handbook. Yes, it's an extract from that, it's not complete but it deals with - especially the last four or five pages deal with batteries and faults in marine radio equipment. I think that you've said that all marine operators, radio operators, are supposed to have this, is that correct? 5

A. It's a document that is actually required to be carried on board every vessel. By vessel I mean small boat.

Q. Even a-- 10

A. A yacht.

Q. A yacht?

A. Yes. If there is a radio station on board a yacht then this document should be on board to be used as a reference. 15

Q. Is there anything else that you want brought to the attention of this inquest?

A. I think in summary the issues have been covered in terms of what is necessary for the development of an inspection for yachts entering the Sydney to Hobart yacht race as far as the radio installation is concerned. There needs to be a proper management process involved on the part of the race committee in terms of developing a procedural document which takes into account distress situations that might arise and how they should be handled. That needs to be of course discussed with the relevant authorities, Telstra, ACA, those involved, AMSA, and there has to be an education programme for yacht crews, it's already been mentioned several times, in terms of the use of EIPRBs, the use of radio equipment, what search and rescue aircraft are expecting of them in terms of how to communicate and how to be rescued. 20 25 30

CORONER: Q. What about educating yacht race committees? 35

A. I've included that in my comments I hope.

HILL: Yes, I've nothing further.

CORONER: Mr Santamaria? 40

SANTAMARIA: No questions, your Worship.

CALLAGHAN: Q. I'm appearing for Navy. Just to clarify with you the situation in relation to the use of sail training ship Young Endeavour as the radio relay vessel. She was the platform for the radio relay team of the CYC. You understand that don't you? 45

A. I'm quite aware of that, thank you.

Q. And the radio relay team from the CYC was staffed by CYC, you understand that? 50

A. Yes.

Q. And was equipped by CYC?

A. I understand the distinction. 55

Q. I just want to make it clear for other people perhaps. And Young Endeavour of course had her own radio equipment

and her own call sign Young Endeavour. Do you understand that?

A. I understand that, yeah.

Q. And the call sign for the radio relay vessel in relation to race control was Telstra Control?

A. Yes.

CALLAGHAN: Thanks, Mr Collinson.

COLEFAX: Before I start cross-examining, your Worship, I notice that Mr Hill referred to in general terms documents 4 and 5 in the bundle and did not take Mr Collinson to the particulars of it, of either of those documents. Your Worship will know that the documents contain material which in part could be seen as an adverse reflection on the client for whom I appear.

CORONER: Maybe, but--

COLEFAX: Well there's a considerable amount of material that does, your Worship, in my respectful submission. If your Worship was not proposing to rely on that material in detail in the report, I wouldn't feel it necessary to cross-examine Mr Collinson about the contents, but if your Worship having already seen it is minded to have regard to it in express terms, I will feel compelled to ask some questions about it, but I don't want to take up the time of the inquest pursuing a line of cross-examination that is not going to feature in your Worship's report.

CORONER: I can't say that I won't take notice of aspects of it, I just can't say that at this stage, so perhaps you'd better touch on it, Mr Colefax. I won't necessarily agree with it at the end of the day or use it, but I just can't say.

COLEFAX: Thank you, your Worship, for that indication.

Q. Mr Collinson, in the documents to which I've just referred in that submission to his Worship, namely documents 4 and 5, you have had regard to the transcript of some tapes which were made aboard the Young Endeavour in the Telstra Control radio room. Do you appreciate that?

A. Yes, I do.

Q. The tapes do you understand were made by a hand held portable dictaphone? Did you understand that?

A. I'm aware of that, yes.

Q. Could you just keep your voice up, Mr Collinson.

A. Sorry.

Q. Were you aware that those tapes were not continuously made over a 24 hour period?

A. From my reading of the transcript there are breaks where the tapes were finished and perhaps there'll be some time - there is no - the point I think you wish to make is - I

shouldn't put words into your mouth - is that there is no time reference on the transcript.

Q. Well the point I was seeking to make, and not wishing to put words into your mouth, was do you appreciate that there were times during the transmissions which were not the subject of any tape-recording at all?

A. I'm sure there could be.

Q. One of the circumstances in which that came about was when the movement of the ship was such as to dislodge the effective operating of the machinery. Do you appreciate that that might well have happened?

A. That could well have happened, yes.

Q. Would you agree with this suggestion, that in reading through the transcript it is sometimes difficult to discern when the speaker whose voice has been transcribed is using the radio or the mobile telephone or general conversation in the area?

A. That would certainly be the case in that on the transcript of course there is no reference to the fact that I am using an HF radio, there is no frequency specified. The conversation that was being taped could be a conversation between two people in the room or one person talking over the radio or using a mobile phone. It is my interpretation having read the transcript of what took place.

Q. But you had that distinction in your mind?

A. Yes.

Q. One of the criticisms you make in document number 5 of the three volunteers who were on board the Young Endeavour for the Cruising Yacht Club concerned the attention that was given to the ship or the boat the Team Jaguar. Would that be fair, to say that's one of your criticisms in document 4 or 5?

A. In reading through the transcript it seemed that the communication between Moira Elizabeth, Team Jaguar and Young Endeavour occupied a very significant amount of time on the frequency of 4483. Again having said that, there is no time reference on the tapes and it would be difficult to judge exactly when those particular communications took place.

Q. Did you have the opportunity before preparing your documentation to have access to the radio log which was written up during the course of the race?

A. No, I haven't seen the radio log book of Telstra Control. My only other reference was the log book kept by the Royal Yacht Club in Tasmania.

Q. I want you to assume Mr Collinson that exhibit 24A before his Worship is a radio log written up by the three volunteers of the Cruising Yacht Club, recording precisely the time at which each radio transmission was received. Would you have thought that it would have assisted you in coming to your conclusions or your particular conclusion

about the amount of time spent on Team Jaguar if you had access to the time recordings disclosed in that exhibit?

A. It would have been very useful if I had read the log book and then I could have time referenced the particular events.

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Q. So the criticism you make in the documents concerning the time spent on Team Jaguar has to be qualified by the fact that you are unaware of the actual amount of time devoted to those transmissions. Would that be fair?

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A. Other than the cross-referencing I did with the radio log book at the Royal Yacht Club in Tasmania.

Q. You would agree with that?

A. I would agree with that.

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Q. Would you agree that the dismasting of a yacht in the conditions which obtained during the course of this race was something which placed that yacht in some considerable danger?

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A. I'm not a yachtsman, but I think that if I was on a yacht that had been rolled over and dismasted I would probably be terrified. The--

Q. Thank you for the answer to my question.

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HILL: Well he hasn't answered. We're talking about danger. He's going on, he's terrified, he wants to say something more.

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CORONER: Yes. Mr Colefax is happy with the answer. I'm moving on. Move on.

COLEFAX: Q. Were you aware that the Team Jaguar during the course of the transmissions to which you've been critical was in fact motorless?

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A. I was aware that the situation with Team Jaguar extended to the extent that they had I believe a rope around the propeller and therefore could not use their engines to propel the yacht.

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Q. So is the simple answer to my question yes?

CORONER: All right, Mr Colefax, he's answered it.

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COLEFAX: Q. Were you aware that the Moira Elizabeth, that is the tug boat which had been sent to rescue Team Jaguar, had lost the facility to use the HF 4483 frequency?

A. I'm not aware of that because the transcript doesn't refer to frequencies, but if Young Endeavour was communicating with Moira Elizabeth they would be doing it on either channel 16 or 4483.

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Q. When you say Young Endeavour do you mean Telstra Control?

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A. I mean Telstra Control to make the distinction.

Q. And were you aware that Team Jaguar had lost its VHF 16



facility?

A. I believe that they had problems with their VHF. My understanding of reading the transcript however as far as Moira Elizabeth is concerned, that they were able to communicate on 4483 because Mr Carter interrupted a radio sked on 4483 to explain to Team - to I think it was Team Jaguar, I correct myself, it was Team Jaguar, to say that they could interrupt the sked if they needed to.

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Q. So Team Jaguar--

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A. Team Jaguar could communicate on 4483.

Q. And there were some difficulties with Moira - I want you to assume Mr Collinson that Moira Elizabeth had some difficulties in transmitting on HF 4483 and Team Jaguar had lost the facility to communicate on VHF 16. What do you make of those two assumptions?

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A. If that is the situation then--

Q. Please, just make the assumptions, right?

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A. I can make that assumption.

Q. The only method by which Moira Elizabeth and Team Jaguar could communicate would necessarily be through a third party, correct?

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A. Agreed.

Q. And Telstra Control would have been the ideal third party for that communication to take place, correct?

A. Yes.

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Q. You are aware from reading the transcript are you not that Moira Elizabeth was having considerable difficulty actually finding Team Jaguar?

A. I'm aware of that.

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Q. And so I want to suggest to you that rather than being an inappropriate use of air time, Telstra Control was playing a vital and necessary role in assisting Moira Elizabeth to communicate with and find Team Jaguar. Would you agree with that?

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A. Given the communication difficulties outlined in that Moira Elizabeth could not communicate on HF and Team Jaguar was communicating on HF, then the radio relay vessel would be the sole and correct means of exchanging information between those two vessels.

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Q. One of the other criticisms that you've made of the Telstra Control volunteers is that they departed from what you regard as the orthodox protocols for communications. Is that right?

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A. That's correct.

Q. Is what you had in mind there the fact that Mr Carter would communicate with a vessel in the race by reference to either the boat name or the radio operator's name rather than some numerical identification?

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A. That's one example.

Q. As you read the transcript of the conversations however, there's no suggestion in any of those communications is there that there was any mistaking of identity in the communications?

A. Between the yacht concerned, perhaps was referred to as Tony, and the Telstra Control, Mr Carter, that there would be no confusion, but to any outside vessel needing to be aware of the situation then Tony is an unknown quantity.

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CORONER: Q. So your point is that whilst there be no confusion between Mr Carter and whoever he's speaking to, others listening may well be confused?

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A. That would be correct in that another vessel would not know what vessel Tony--

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Q. May not--

A. May not know what vessel Tony was being referred to.

COLEFAX: Q. And are you able to identify a single example of where Mr Carter referred to a boat other than by reference to its name?

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A. In the transcript?

Q. Yes.

A. Yes, there are occasions when--

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Q. No, can you identify them rather than just generally referring to occasions?

A. I don't have--

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Q. Can you give me a transcript reference?

COLEFAX: I note the time, your Worship.

Q. If you need some time--

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CORONER: Could the witness have the lunch hour to have a look for some?

COLEFAX: Yes.

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CORONER: So what do you want, Mr Colefax, some references in the transcripts?

COLEFAX: To where Mr Carter referred to a vessel not by its name or number but just by the name of the operator.

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CORONER: Of the operator, all right.

A. I have the reference.

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CORONER: He's got a reference.

COLEFAX: Q. Have you got one example?

A. Yes, tape--

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Q. What page?

A. Tape 3 on page 29, and tape 4 on page 13.

Q. I've noted that, thank you.

CORONER: Hang on, you're way ahead of me. Page 3, page 29.

COLEFAX: What was the reference on tape 4? Thank you. Is that a convenient time, your Worship. 5

CORONER: Just a moment.

Q. Which one are you relying on tape 3, page 29, Mr Collinson? Whereabouts? 10

A. There's a reference on page 29, Telstra - these are my aide memoires - Telstra Control uses the first name Tony.

COLEFAX: I think that's about point 4, your Worship, on the page. There's also reference at the top of the page, about point 2. 15

CORONER: Tape 3? 20

A. That's tape 3.

CORONER: Q. Right, and the other one, tape 4?

A. Tape 4, page 13. 25

Q. Thirteen?

A. Page 13. I have a note that Mr Carter refers to an unknown yacht as Bill.

COLEFAX: That's at about point 8, your Worship. 30

CORONER: We'll take the break, thanks Mr Collinson. You don't want any more examples do you?

COLEFAX: No, your Worship. 35

<WITNESS STOOD DOWN

LUNCHEON ADJOURNMENT 40

<MICHAEL JOHN COLLINSON(2.10PM)  
ON FORMER OATH

COLEFAX: Q. Mr Collinson, do you have with you in the witness box a copy of the transcript of the tape-recordings about which I was asking you some questions just before the luncheon adjournment? 45

A. No, I don't have a copy of that.

COLEFAX: May I enquire, your Worship, has the transcript become a formal exhibit? 50

CORONER: Yes, it's part of volume 8 in the hard copy and you'll find it on the CD-ROM.

COLEFAX: But does it have - my question, I didn't ask it clearly, does it have a separate exhibit number? 55

CORONER: A separate exhibit, no, no, it's part of the brief from memory.

COLEFAX: Your Worship, could I have leave to approach the witness? 5

CORONER: Yes.

COLEFAX: Q. Mr Collinson, I'm going to ask you some questions about the transcript, and I've opened the transcript at page 28 of the transcript of tape 3. You see that that information is given at the bottom of the page? 10

A. Yes, I see that.

Q. And can you keep your voice up please, Mr Collinson. I imagine Mr Hill is trying to hear what we're saying. Do you see that on page 28 there appears to be a transcript of a conversation concerning the boat Secret Men's Business? Could you just cast your eye down the page? 15

A. I see a number of references to Secret Men's Business on page 28. 20

Q. At the bottom of the page there's a reference to a boat Ausmaid? 25

A. I see that at the bottom of page 28.

Q. And if one turns the page one sees at the top of the page in brackets the words (no audible reply). Do you see that? 30

A. I see that against V--

Q. Eighteen?

A. Point 18.

Q. And then two lines underneath that, against the initials V92, do you see a series of dots indicating that whatever was transmitted for one reason or another was not transcribed? 35

A. I understand that that's what the dots mean, imply. 40

Q. And do you understand from the legend that V92 is a reference to the boat Secret Men's Business? 45

A. Yes, I do.

Q. Would you agree that by looking at the transcript as it's been produced, it's possible that whatever was said and not transcribed included the identification of the boat sending the message as being Secret Men's Business? 50

A. I could conclude that. 55

Q. If that had been done, anyone listening to the conversation would have been aware that it was a conversation between Secret Men's Business and Telstra Control?

A. They'd draw that conclusion.

Q. Yes. The fact that Telstra Control, and in particular Mr Carter, thereafter referred to the person with whom he

was communicating as Tony, would not have detracted from the clarity of the identification of the boat, would it?

A. If the name Tony was referred and referenced to the vessel Secret Men's Business, and that was clear to anyone else listening in. 5

Q. Well if the boat which had begun the transmission had identified itself as Secret Men's Business there wouldn't have been any problem of identification, would there?

A. If there was continuity and the voice was recognised as that belonging to Secret Men's Business and that was the person referred to as Tony, there wouldn't be any confusion. 10

Q. Just whilst I've got you on page 29, do you see that the second reference attributed to V92 is to this effect, and I quote it, "the message was that it was them that activated the EIPRB because they had rope around their propeller and were disabled. Over." Do you see that? 15

A. I see that reference, yes. 20

Q. And then V3, which is Mr Carter, "Roger to that. So they confirm that it was them that activated the EIPRB on account of having rope around the prop and disabled. Is that affirmative?" Do you see that? 25

A. I see that, yes. 25

Q. I want you to assume that the evidence is that there was only one boat in the race that transmitted that it was disabled because of a propeller being bound up by rope and that being Team Jaguar. Would you make that assumption? 30

A. If Team Jaguar was the vessel being referred to, yes, I could--

Q. I just want to make the assumption of fact that I've just put to you. 35

A. Right, we can assume that.

Q. Then if that assumption is made, then it would appear would it not that it was not Telstra Control that directed Team Jaguar to activate the EIPRB but rather the EIPRB was activated by Team Jaguar? 40

A. That's the case in this instance. I think my reference to Team Jaguar and activating an EIPRB was subsequent to that, I may be wrong, where there was an instruction I believe given to Team Jaguar to activate their EIPRB. I believe that occurred quite early on in the proceedings, perhaps on the 27th, and the reference I have referred to I think the 28th of December. 45

Q. The other reference you gave his Worship before lunch was a reference to tape 4, page 13, and I will open the bundle for you at that page. And I think before lunch your evidence was to the effect that a further example of boat identification by reference only to a first name was this example you gave on page 13. Do you recall that general line of evidence? 50

A. Yes I do, yes. 55

Q. Do you see that the reference to the person Bill is in the penultimate reference to V3 at the bottom of the page? It says "yes Bill, I've got you at 33 750" et cetera?  
A. That's correct.

5

Q. Was the reference that you had in mind when you gave the example before lunch?  
A. That's correct and that refers to V3 which can be identified as a vessel.

10

Q. Do you see that immediately above that reference to V3 there are the letters UY?  
A. Which refers to an unknown vessel, unknown yacht.

Q. That's as you understand from the legend, correct, unknown yacht?  
A. Indeed.

15

Q. And it would appear from the transcript that part of the transmission from that boat was not recorded by reference to those three dots?  
A. That's, that's correct.

20

Q. And it may well have been might it not that the boat's identity was conveyed in that part of the transmission which for one reason or another has not been transcribed?  
A. That could be the case.

25

Q. And similarly with the passage I took you to earlier, if that had been done there would have been no confusion in the mind of a listener about who the participants to the transmission were?  
A. There may not have been confusion if the name Bill or Tony was linked to a preceding conversation where the name of the vessel was known.

30

35

Q. And in each of the two examples that you gave, that may very well have been done but the transcript is incomplete for a definitive answer?  
A. That could be the case.

40

Q. In the document which Mr Hill took you to this morning which was the first document in your bundle, that is the letter to Mr Badenach of 18 February 1999, you express the opinion on page 2, paragraph 3, that the radio operators became overloaded and there were consequent delays in alerting the shore authorities. Do you recall expressing that opinion?  
A. That's page 2, paragraph?

45

50

Q. Paragraph 3, line 3.  
A. And we're referring to February the 18th?

Q. That's right. Page 2, the paragraph that commences "it was observed that a great many distress calls and messages were transmitted." Do you see that particular passage?  
A. I do.

55

Q. You told his Worship before lunch that you had not seen the radio log, which is exhibit 24A, which records the time at which calls were received. Without that information how were you able to express the opinion Mr Collinson that there were delays in alerting the shore authorities by the Telstra Control operators? 5

A. As I indicated earlier, a yacht communicating on 4483 having to pass a mayday situation to Telstra Control, Telstra Control has to record that. Somebody then has to pass that information and my understanding is that there were perhaps two ways of passing that information, one by mobile phone to a member of the race committee in the Royal Yacht Club in Hobart, or possibly alternatively I believe there may have been an INMAR Satsea system installed on Young Endeavour, in which case communication could have been passed to AMSA in that way. 10 15

Q. I want you to assume Mr Collinson that at the moment a mayday was received by Telstra Control over the 4483 frequency, assume that Mr Carter is operating that radio equipment, the moment that mayday is received another member of the team, namely Mr Brown, were to make the mobile telephone call to AMSA. The delay there compared to the yacht communicating directly with AMSA on a different channel would only be a matter of seconds wouldn't it? 20 25

A. In fact a yacht doesn't communicate directly with AMSA because a yacht would communicate with a shore-based station, either a coast radio station or Telstra.

Q. But either way, the delay that you're talking about-- 30  
A. Would have been the norm.

Q. --is minimal isn't it?

A. It would be the case. 35

Q. Seconds?

A. Yes.

Q. Do you have the transcript reference Mr Collinson to that further activation of the EIPRB by Team Jaguar which you referred to about two or three minutes ago which you thought was instigated by Telstra Control? Are you able to easily identify it? 40

(No verbal reply) 45

Q. I take it that you're not able to put your finger on it immediately?

A. Not immediately, no.

Q. I'll pass on then, I won't hold it up. 50

CORONER: Leave it.

COLEFAX: Q. Another point you made Mr Collinson in document 1 and which you repeated today in your oral evidence was that you thought it would be desirable for a professional radio operator to be on the Young Endeavour during the race, and you informed his Worship that that in 55

fact had happened during the 1999 race.

A. That's correct.

Q. Do I take it that you thought it would be desirable for a professional radio operator to be on board in order that the radio operations could be more professionally carried out? 5

A. That is correct.

Q. Are you aware that the radio operator, the professional radio operator who was added to the crew for 1999 race, spent the entirety of the race suffering from seasickness and was unable to participate at all in the administration of the radio equipment? 10

A. My reading and understanding of the evidence, and I believe it to be evidence, as stated by the Lieutenant Commander Neil Galletly, was that Janine Fenwick, the lady we refer to who was a Telstra coast radio station operator from Brisbane, carried out her duties fully in spite of being seasick. 15 20

Q. Well perhaps we'll ask Mr Galletly about that. Could I ask you some questions now Mr Collinson about your document numbered 5. You make the comment on page 3 of that document that by having regard to the transcript you formed the opinion that the radio operator appeared at times to have difficulty keeping track of the proceedings and failed to maintain control of the frequency. Do you remember expressing that opinion? 25

A. Yes, I do. 30

Q. That's based upon nothing other than the transcript, is it?

A. That would be correct. 35

CORONER: Q. Would you say that you'd be in a far better position to judge that issue by listening to the tape of the transcript, the tapes?

A. And reading the log book. 40

Q. And reading the log book?

A. Yes.

Q. In other words, you have reservations about that, that comment? In the light of not having listened to the transcript and read the log books? 45

A. If the transcript isn't a complete record then obviously there may be things that have been missed.

CORONER: Move on, Mr Colefax. 50

COLEFAX: Q. I was asking you before lunch about your concern that the radio operator had not adhered to correct protocols and procedures. That led to the series of questions about as to whether or not the boats had properly identified themselves. Was another example of concern to you in coming to that conclusion that protocols had not been pursued, was that some boats signed off communications with 55



the word Romeo and other boats used the word Roger? Was that a matter of concern?

A. That's only one point. Other points are that--

Q. You made that point though, didn't you? 5

A. I did, yes.

Q. May his Worship take it that you made that point because you thought it was significant?

A. I'm pedantic when it comes to protocol, in terms of radio protocol. 10

Q. The essential thing about radio communications is that the parties who are participating in it, all the parties understand each other? 15

CORONER: Wouldn't that include the outside world, Mr Colefax?

COLEFAX: All the parties. 20

CORONER: All the parties in that sense.

COLEFAX: Q. All the parties, including the outside world, understand what is being transmitted? 25

A. And there are no - there's nothing confusing about it, yes.

Q. Yes.

A. Agreed. 30

Q. And a protocol is but one way of seeking to effect that aim. Would you agree with that?

A. I do, yes. 35

Q. And there may be circumstances in which the protocol is not pursued but effective communications are nevertheless carried out?

A. That could be the case. 40

COLEFAX: I think that's all, your Worship, subject to some instructions. That's the cross-examination of the witness, if your Worship pleases.

WEBER: Q. Mr Collinson, you have experience in marine radio communications going back some 25 years? 45

A. That's correct.

Q. And your experience is both practical and academic?

A. It is. 50

Q. And to the extent to which it's been practical, it's been in the Merchant Navy and latterly at the Australian Arctic Division, obviously in the Antarctic, correct?

A. There's more to it than that. I have been Communications Director for the Australian Three Peaks yacht race and as such have manned a limited coast radio station during that race, which is run every year at Easter. 55

Q. But the bulk of your practical experience has been at the more sophisticated end of the spectrum of marine communication, would you agree with that?

A. If you mean sophisticated in terms of large vessels as distinct from small vessels, that would have been the case until as I say the last 10 years when I was involved with these Australian Three Peaks yacht race.

5

Q. What I meant to convey and I obviously haven't done it well, is that your on-vessel experience is with sophisticated merchantmen, correct?

10

A. On board vessels, yes, that's correct.

Q. Which would carry sophisticated radio equipment, agreed?

A. All radio equipment is sophisticated in the sense that a large vessel has a larger power output, it might have 1500 watts as distinct from 100 watts. The same frequencies are involved, the same communications procedures are involved. That document is modelled on the international radio regulations which apply to both large vessels and small vessels.

5

Q. And similarly one hopes that the Australian Arctic Division have sophisticated radio technology to allow them to remain in contact with the outside world?

10

A. The role of communications officer in the Australian Antarctic Division is principally sitting at a computer keyboard and most of the communication is done via a computer terminal these days. The actual HF radio system involvement is quite minimal, it's via satellite communication.

15

Q. You've told his Worship that you have no practical yachting experience, do you agree with that?

20

A. That's correct, I'm not a yachtsman.

Q. Would you agree with this, that the challenge to make yachting maritime radio communications safer is a challenge which involves trying to achieve the best practical outcomes that can be achieved in a small yacht environment, would you agree with that?

25

A. It's the environment that's the problem on a small boat.

30

Q. Yes.

A. You've got the confines, you've got proximity to water, moisture and the greater susceptibility to damage.

Q. That's right. Problems which other things being equal are not to be found on a vessel in the merchant navy?

35

A. Indeed.

Q. Would you consider yourself one of Australia's leading experts in marine radio communications?

40

A. In terms of large ocean going ships, yes.

Q. And certainly one of the leading experts in Tasmania?

A. I was the senior lecturer at the Australian Maritime College in marine radio communication.

45

Q. To achieve the outcome that I think you've agreed is desirable, that is the best practical outcome for radio communications on board a yacht, would you agree that what's required is someone - amongst other things, someone with your rich background and technical ability on the one hand interacting with experienced yachtsmen and experienced yachting administrators?

50

A. I don't think to be a competent radio operator on a yacht you need to have the depth of experience that I've had. I think you just need to be fully aware of this document and have had to have had some reasonably good education in obtaining that qualification.

55

Q. But given amongst other things the confined nature of a yacht, it would be of assistance to you wouldn't it, in trying to come up with practical outcomes, to speak with the people who have hands-on knowledge of blue ocean racing?

A. Indeed, yes. You can't expect somebody with a knowledge of large ocean going vessels to relate those directly to a small yacht.

Q. And for example are you aware that some of the issues that you touch upon, for example battery failure, can on a yacht be attributable to a crew management problem?

A. Battery failure during a voyage can result because of water coming into the boat. The point I made earlier I believe was that a yacht sailing at the start of the race should have its radio installation in a very good state of repair if you like in that it's working when it sails. The batteries are in good condition, the battery connections, the installation is in good condition. It can suffer damage during a race.

Q. But it can also - there might for example be a crew management problem which leads to the fact that the battery isn't adequately charged, are you aware of that sort of practical problem that you can confront on a yacht?

A. I don't understand your comment as far as crew management point is concerned.

CORONER: Give him an example, Mr Weber, so I understand it too.

WEBER: Certainly, your Worship.

Q. If the radio is used - sorry, the radio derives its power from the central power source in the vessel, do you understand that?

A. The marine radio equipment is powered by batteries, DC batteries, which in turn are charged by the yacht's motor.

Q. That's right. And there has to be a regime of crew management whereby the procedures are put in place to ensure that the radio - that the batteries are adequately charged?

A. Indeed. And they are requested to do that, in fact I believe Mr Carter actually specifically mentioned to the yachts to keep their batteries charged.

Q. But that is an example of where to achieve a practical outcome one must marry together the theory with the reality of life on a small yacht, agreed?

A. It's management, it's management of the radio installation, yes.

Q. Do you consider that of the people involved in the Sydney to Hobart Yacht Race from the Royal Yacht Club of Tasmania in 1998 that you were the most experienced in relation to matters of radio communications?

A. In terms of those who volunteered at the Royal Yacht Club of Tasmania, yes.

Q. Do you consider that you had superior knowledge in that regard to Mr Badenach?

A. I'm not aware of what qualifications or experience Mr Badenach has in terms of marine radio communication, I have no knowledge of that at all. 5

Q. The question was, do you consider you had superior radio communication expertise to Mr Badenach?

A. In that case I do, yes. 10

Q. Mr Badenach in February 1999 was chairing a committee within the RYCT which was empowered to liaise with the CYC's review committee, that's correct isn't it?

A. Mr Badenach chairs the Sydney to Hobart race committee of the Royal Yacht Club of Tasmania, that's correct. 15

Q. And it was that committee which the Royal Yacht Club of Tasmania was proposing would liaise with the Bush committee, agreed?

A. That would be my understanding, yes. 20

Q. Your letter of 18 February 1999 was to Mr Badenach in his capacity as chairman of the Tasmanian Sydney-Hobart committee?

A. That's correct. 25

Q. You provided that letter to him as your first paragraph indicates for submission to the review committee, now that's Mr Bush's committee, correct?

A. That's correct. 30

Q. As he saw fit?

A. Those words were put in, yes. Specifically.

Q. It was for Mr Badenach to decide within the structure of that letter what he was to take forward, agreed? 35

A. Agreed.

Q. Did you make any submission at all to the CYC's review committee? 40

A. Not directly, because I had assumed--

Q. You made no--

A. I made no direct submission. 45

Q. You left it to others who were less expert than you to make such submissions as they saw fit, agreed?

A. The assumption was that having addressed--

Q. No, sorry. 50

CORONER: Let him answer.

A. The assumption was that having addressed this letter to Mr Badenach indicating that if he chose to pass it to the CYC I assumed that he would do that. 55

WEBER: Q. But you left it to someone who you considered

less expert than you to pass on as he saw fit matters - to the committee in Sydney matters which were centrally in your area of expertise, correct?

A. But it doesn't require an expert to pass a letter on.

5

Q. Is the answer to the question yes?

A. Yes.

Q. After the Bush report was brought down, you obviously read it?

10

A. I did.

Q. It was brought down in May 1999, correct?

A. It may have been, I'm not sure of the exact date.

15

Q. It bears the date May 1999.

A. It's May 1999.

Q. How soon after it was brought down did you read it?

A. It might have been a month later perhaps.

20

Q. So possibly June 1999?

A. Yes.

Q. Obviously you saw that there were technical - what you saw to be technical deficiencies in it?

25

A. A number yes, I did.

Q. What steps did you take to communicate with the CYC in relation to those technical deficiencies?

30

A. There were two stages in the process. I read the report and wrote a paper which was discussed at the subcommittee, the radio subcommittee of the RYCT. They modified that initial report of mine which then went to the committee chaired by Mr Badenach.

35

Q. The question was, what steps did you take to communicate any of your concerns about the technical inadequacies of Mr Bush's report to the CYC?

A. My understanding is that Mr Badenach--

40

Q. I don't mean to be rude--

CORONER: I think he's answered the question, hasn't he?

45

WEBER: No, your Worship--

WITNESS: I'm trying to answer the question.

WEBER: The question is directed to what this gentleman did by way of communication of himself, his concerns, to the CYC. And the answer is Mr Badenach, it was his belief that Mr Badenach did something.

50

CORONER: Well, that's right, he said he discussed it with the subcommittee of the Royal Tasmanian Yacht Club, they modified and then passed it on to Mr Badenach. That's what he did.

55

WEBER: I simply wanted to ascertain whether this gentleman made any attempt to communicate directly with the CYC.

CORONER: Ask him, he'll say no.

5

WITNESS: My understanding is that Mr Badenach is a race director of the Sydney to Hobart Yacht Club and therefore is part of the race committee of the CYC. My assumption was that having passed the communication to Mr Badenach that effectively meant it was passed to the CYCA.

10

CORONER: That's a responsive answer to the question.

WEBER: Q. Could you go to - in your letter to Mr Badenach of 18 February, on its final page, you suggest that yachts should carry large identification letters on their hulls for better visual identification, see that?

15

A. It wasn't a recommendation of mine in particular. There were some 15 radio operators who met as a group who put forward various comments, that was one of the comments of one of the 15 radio operators at the RYCT.

20

Q. Was it a comment in respect of which you agreed?

A. I could see nothing wrong with it.

25

Q. Are you aware that in the 1999 race that the vessels carried satcomsea?

A. I'm aware of that, yes.

Q. That provides a quite sophisticated level of - sorry, a system whereby each yacht can be identified?

30

A. Yes, it does carry such an identification.

Q. And as I understand it, that identification is down to a level of plus or minus three metres, it's that precise?

35

A. I think there's some confusion here. The person making the recommendation about identifying yachts was to enable an over-flying search and rescue helicopter to identify the vessel in the water. A satcomsea identifies the vessel in terms of its radio communication, so that having received a satcomsea communication, the identification of the terminal on board that vessel is made. It doesn't help an over-flying rescue helicopter to identify an upturned or dismasted yacht in the water. I think the reference you make to the vessel carrying some identification is to assist over-flying search and rescue helicopters identify particular vessels, if there were two or three requiring attention, one has more people in need of immediate attention than another, it enables that over-flying helicopter to identify which particular yacht needs the most immediate attention.

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Q. But certainly satcomsea greatly assists in the task of identification of yachts for all purposes, including SAR purposes?

55

A. Not for a helicopter over-flying, trying to identify a vessel to pluck the crew from. The satcomsea is a communications mode, a vessel that's rolled over has

probably lost its antenna anyway, satcomsea isn't functioning.

Q. But doesn't satcomsea have an inversion alarm?

A. If it's been inverted - an inversion alarm or submersion alarm? 5

Q. Call it what you like, doesn't it go off - doesn't it activate itself when the satcomsea is immersed in water?

A. If a satcomsea is immersed in water its electronics don't function. 10

CORONER: What's wrong with numbering the boats legibly so that on a grey day off the southeast coast of Australia people trying to save these people can see them and identify them? What is wrong - what is the problem with that? I take it your instructions are that this is undesirable. Why? 15

WEBER: My instructions aren't that, your Worship. My instructions are that some part of the difficulty in identification has been addressed by the provision on each one of these yachts-- 20

CORONER: Of a satcomsea system. 25

WEBER: --of satcomsea. I will make submissions about that in the fullness of time but--

CORONER: Of course, we'll need to know more precisely how that operates especially with respect to helicopters and search aircraft. 30

WEBER: Q. Could you go to your letter to his Worship of 16 July. 35

A. Can you give me a number reference please?

Q. I've got it in a different place--

CORONER: It's under document 3 on mine. 40

WEBER: Q. Yes, it's document 3 to the bundle. That's where you give his Worship the benefit of your thoughts on Mr Bush's report, that's correct isn't it?

A. That would be document 3, yes. 45

Q. Could you go to page 2 of it please sir, that's page 2 of the report itself.

A. I've just misplaced it. 50

Q. Perhaps I could provide a copy Mr--

A. Could you? I've covered it up with another document.

Q. I'll hand up the bundle and I've turned it over at the commencement of - actually the letter to his Worship and then if you'd be kind enough to go to page 2 of the briefing paper itself. 55

A. Yes.



Q. You'll see in the table at about point 8 of the page you've got a comment EIPRBs do not radiate effectively to a satellite unless in the water, you see that?

A. That's correct, yes.

5

Q. Somewhere else you indicated that you believe that the 1998 experience showed that the yachtsmen didn't - some of them didn't appreciate that an EIPRB didn't activate adequately unless it was in the water?

A. I think yachtsmen are generally not well educated on the technicalities of EIPRBs, how they function properly and the whole COSBAS Sarsat system.

10

Q. I take it that you agree that the 406 EIPRBs are a significant improvement on the EIPRBs that they effectively replaced?

15

A. Indeed they are.

Q. The instructions that are actually on the 406 EIPRB itself are pictorial, aren't they?

20

A. They may well be, yes.

Q. You're not familiar with it?

A. I have seen one or two EIPRBs, I can't say they're on the same instructions on all EIPRBs.

25

Q. On my instructions at least, that some of them, it shows pictorially that the EIPRB should be on a line and in the water. I take it--

A. Yes, I have seen that.

30

Q. You have seen that?

A. Yes.

Q. So at least with some brands a yachtsman how even in a crisis would be able to see from the pictorial instruction that his EIPRB ought be in the water?

35

A. I would hope a yachtsman wouldn't wait until he's in crisis before knowing how to operate an EIPRB.

40

Q. Of course. Over the next page if you wouldn't mind, you indicate at the foot of the page your view that there should be more than two mandatory position reports, you see that?

A. Yes I do.

45

Q. I think you indicated that for the 1999 race you were aware that there were four forms of reportage during the day?

A. There were four times, four occasions on which position reports could occur.

50

Q. Are you also aware that the 1999 race was sailed under sailing instructions which required all yachts to keep continuous monitoring of VHF channel 16?

A. I am aware of that, yes.

55

Q. And so that's another important factor in making sure that communication lines are open at all times in respect of

matters of emergency?

A. Yes, because during the '98 race of course it was a practice that the radio transceivers were switched off on board yachts other than at sked times, (a) to conserve battery power and (b) to minimise the annoyance to the crew who were trying to sleep.

5

Q. Apropos of which, that's another important practical question, isn't it, that are you aware that in a crisis that sleep deprivation can be an enormously important deleterious effect on the functioning of a crew?

10

CORONER: On a small boat.

WEBER: Q. On a small boat.

15

A. Indeed it is and having the radio switched off is another important factor that you're not aware of what's going on around you if the radio is switched off.

Q. But that--

20

A. So you have to - unfortunately you have to have the radio switched on in order to know what's going on around you, which of course then impacts on - possibly impacts on the crew who are subjected to whatever radio noise is going on.

25

Q. I raise it in not the slightest critical way but as pointed out as an example of the need for people with your expertise and the yachting community to interact so that the practical realities of blue water racing and the expertise that you can bring to bear are married and judgment calls about such matters can be made.

30

A. I understand.

CORONER: And perhaps earplugs issued.

35

WEBER: Yes, your Worship.

Q. Mr Collinson, I'm sorry, I've lost my place.

40

CORONER: You're at the bottom of page 4.

WEBER: No, it's alright your Worship, I've moved on, your Worship will be relieved to know.

45

Q. The use of emergency frequencies for emergency situations is absolute first principle for a qualified radio operator, would you agree with that?

A. The international radio rules specify a frequency in each of the marine radio bands for the transmission of distress emergency and safety calls. Because it is then a specified frequency everybody is expecting to hear communication or use that frequency. When you introduce 4483 as a distress frequency because it became a distress frequency by default, because mayday transmissions were taking place on 4483. The control of 4483 then has to be the same as it would have been on one of the international distress frequencies.

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Q. But the question was the use of emergency frequencies for emergency situations is an absolute first principle proposition for any qualified radio operator, do you agree with that?

A. Yes, that's correct, yes.

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Q. It's a given that a yacht club need not reinforce to a radio operator, would you agree with that?

A. I wouldn't.

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Q. You wouldn't?

A. No.

Q. Is it your view that the yacht club organising a yacht race ought say don't forget first principles when you come to operate your radios?

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A. Indeed. I would say the yacht club would say make sure you refer to that manual.

Q. Are you aware that in order to achieve a safety certificate by the CYC safety officer each yacht must demonstrate to the safety officer that the document which you brandished then, which is the--

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A. ACA's marine radio operators' handbook.

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Q. --is on board?

A. I haven't seen a checklist that the CYCA safety officer uses. All I know is that that document should be carried on board.

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Q. And it would be a desirable thing I take it from your point of view that the safety officer check for that very--

A. I would see it as more of the radio installation, I'm not sure that a CYCA safety inspector is a qualified radio installation inspector. He might choose to check for documentation. I see it more as part of the radio installation inspection but it could come under the safety inspection conducted by the CYA.

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Q. But in any event it's a desirable thing--

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A. CYCA.

Q. --would you agree, that there is a check to ensure that that's on board?

A. I agree.

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Q. And the radio operator, if he were otherwise in any doubt, would certainly know by reference to the marine radio operators' handbook that the first - that a fundamental principle of emergency situations was that he was to revert to an emergency channel, agreed?

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A. No, not necessarily. It depends on the circumstances. If the yacht has lost its HF radio system, it's relying on VHF and it's possibly beyond the range of VHF communication with ashore authorities, limited coast stations, he then has the only option of communicating with another vessel, which in this case would be the radio relay vessel, if it is within range again. You can't stipulate without specifying

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circumstances.

Q. If one postulates a hypothetical situation in which the emergency channels are available to the radio operator--

A. Yes.

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Q. --it would be reasonable would it not to expect that a radio operator properly qualified would use the emergency channels if his craft was confronted with an emergency?

A. That's what I indicated earlier this morning that in preference the yacht would communicate directly on 4125 for instance and communicate directly with the shore. That bypasses Telstra Control.

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Q. But when it comes to the training of radio operators, that is a cardinal fact is it not that--

A. It should be, yes.

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WEBER: Yes, thank you, Mr Collinson.

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CORONER: Thanks, Mr Weber. Is there anything arising?

HILL: Yes, there is something arising.

Q. The position with regards to the radio, I presume that they're talking about it so that it's very loud and it's throughout the cabin. Can headsets be provided so that the radio operator can sit there with a headset and not disturb anyone else?

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A. It would be my understanding on a small yacht that you wouldn't have a member of the crew dedicated to monitor the radio all the time. Yes, the answer is you can plug in a headset and an operator could sit there monitoring it without causing annoyance to anybody else. But that's my understanding is you wouldn't do that on a small yacht, either you don't have the manpower, somebody's got to be relieved of the watch and get some sleep and so on.

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Q. The other thing is this. Did you in effect receive any feedback from the CYCA via Mr Badenach?

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A. None whatsoever.

Q. None whatsoever? Didn't speak to you about anything that the CYCA had spoken to him about or anyone from the CYCA?

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A. Not at all.

Q. Other than on this radio issue?

A. There has been no communication from the CYCA at all.

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CORONER: Q. Thank you very much for your help Mr Collinson. Is there anything else you want to put to me about the matter? You've covered everything?

A. I think so, thank you.

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CORONER: Thank you very much for your help and thank you for writing to me, I appreciate it and I regard you as an important witness.

<WITNESS RETIRED AND EXCUSED

WEBER: Could I just raise again a housekeeping type matter. It springs to mind as a result of Mr Collinson's evidence. If your Worship thought it would be of assistance, my client's capable of arranging a form of view so that your Worship could see a range of different size vessels.

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CORONER: Boats, yes. I was thinking about it. I've been thinking about that. I'll talk to counsel assisting about it. It might be an idea. I said at the outset my knowledge of matters to do with the sea is incredibly limited. That may not be such a bad thing in the context of an inquest. But there are certain things that I possibly will benefit from looking at. I've been on these boats before but I've certainly never raced in one and it might be a matter that would be well worth while.

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WEBER: We would need a small amount of notice but what could be done for your Worship, if it would assist, would be that a range of larger yachts could be made available for your Worship to choose from--

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CORONER: I'd certainly like to see something like a Farr 40.

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WEBER: Yes, a Farr 40 and if your Worship thought it would be of assistance to be taken on the harbour and actually see everything in operation--

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CORONER: I don't need that but I'd certainly look over some of the boats.

WEBER: We're in your Worship's hands but certainly that can be arranged if it would assist.

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CORONER: Alright, I appreciate that. Thanks, Mr Weber.

HILL: May I say that if that is the case, looking at the timetable, and I don't know about Mr Green or what he's going to say, but Andrea Holt would probably be dealt with within Monday morning, so if your Worship is minded to that, we could probably save some time by organising a view as such, if we decide as it were, if you decide, on Monday afternoon.

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CORONER: Could that be arranged, Mr Weber?

HILL: I'll just say that because I don't know about--

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CORONER: Could you make some enquiries?

HILL: I don't know about Mr Green.

CORONER: Yes, that's right, he may take some time.

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HILL: He may take us up but that's just something I just wanted to--

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WEBER: Would your Worship just bear with me?

CORONER: Certainly. I'm very easy to please.

HILL: It doesn't have to be answered now. 5

CORONER: No, you don't have to answer it now.

HILL: I just put that because that's a-- 10

WEBER: I appreciate the suggestion. Mr Harris says that probably we could arrange the view for Monday. As to Mr Green, we have total confidence there will be at least an unsigned version of the statement-- 15

CORONER: We don't need it signed.

CORONER: --at least this afternoon and he's at present flying in to Sydney on Sunday. 20

CORONER: From New York?

WEBER: From New York.

CORONER: From the Big Apple. Good on him. Okay, that'd be nice. It looks like we'll have him on Monday. It depends on how long his evidence will go. So can we keep it flexible? Is that causing enormous problems? 25

WEBER: I'm not sure about the logistics. 30

CORONER: Monday may not be so good in that event.

HILL: If not then we can put it back-- 35

CORONER: We'll sort something out. Yes, that'd be good.

WEBER: I'm in your Worship's hands.

CORONER: Have we got time for Commander Greaves? 40

HILL: Yes.

CORONER: Let's go. 45

HILL: You've got Commander Greaves' report?

CORONER: Where am I going to find that?

HILL: Or do you want one? I've got a copy. 50

<DAVID WILLIAM CAMPBELL GREAVES(3.02PM)  
SWORN AND EXAMINED

CORONER: Where will I find that? Is that one of the documents you gave me recently? 55

HILL: Yes.

CORONER: Show it to my court officer and she'll go and get it.

HILL: I'll just hand up this one and that can be a working copy, your Worship. 5

WEBER: Can I just raise one matter?

CORONER: Yes. 10

WEBER: I was provided with this report this morning. I didn't know that Commander Greaves was going to be called today.

CORONER: Do you want some time? 15

WEBER: No your Worship. Can I just reserve my position? It's technical and it's simply beyond the practical capabilities to get instructions. I apprehend that I will suffer no practical difficulties but if your Worship would allow me to reserve my position. 20

CORONER: Sure. Yes, that's fair enough. The same goes for you, Mr Colefax. 25

HILL: I'll ask the commander his name and rank.

Q. First of all, would you give the inquest your full name please?

A. David William Campbell Greaves. 30

Q. And your address sir?

A. I'm currently at Maritime Headquarters Australia, Wylde Street Potts Point. 35

Q. And your rank?

A. Commander in the Royal Australian Navy.

Q. Your expertise is in communications?

A. Yes, I'm a principal warfare officer with communications sub-specialisation. 40

Q. You've been for how long a communications officer?

A. In 1989 I did my warfare training which included sub-specialisation in communications in the naval sense and the military sense and I was employed at sea as a communications officer in two frigates and a destroyer during the periods of 1990 through till about '93, '94. During that period I also deployed in the First Task Group to the Middle East and was the task group communications officer during the first deployment in support of the Gulf War. On completion of my sea service I was then employed in Maritime Headquarters as the deputy director of maritime communications where I was principally responsible for communications planning for exercises and operations for the tactical communications between our ships at sea. I served at sea - served again in an operational capacity for commodore flotillas, our deployable commander, and I then served at sea as the 45 50 55

executive officer in HMAS Hobart, a destroyer, and I'm now employed at Maritime Headquarters as a director of maritime communications where I have over-arching responsibility for coordination of all communications for the maritime command.

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Q. This report that you've - this paper that you've put together was principally based upon the concept of what as an organisation would the Royal Australian Navy require from a communications point of view if it was to take a flotilla or a fleet of approximately 115 units between Sydney and Hobart? What sort of communication network would you require? And that's what this document reflects. It doesn't reflect upon the CYCA and what they did, this is purely from what the Navy would do in a network situation with a fleet of that size, is that correct?

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A. It would be in those contexts, yes, as far as the Navy goes but also I suppose back to first principles about communications planning which is applicable really for any communications network.

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Q. Page 1, the first page, sets out the introduction and the various frequencies that are available. There's nothing in particular that you want to take us to in that?

A. No, it's really just a table of the radio spectrum as used for communications with attributes for each of the bands that are in use, giving examples of how we use them in the Navy and also in the commercial world and the maritime environment, as you move from VLF at the bottom, moving up to extra high frequency, which is really in the satellite communications range.

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Q. And over the next page there's frequency plans. So you have to plan what frequency, is that correct?

A. That's correct. The international telecommunications union, of which Australia is a member, stipulates within those bands various frequencies for use both for commercial use, for military use and throughout those bands. Also in applications whether they're aeronautical or maritime or they're used for satellite communications. So there's an over-arching international plan which runs across the whole radio spectrum which we implement in Australia through the Australian Communications Authority.

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Q. At the next heading there is SOLAS GMDSS. Perhaps if you could explain something about that to us?

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A. SOLAS is really the Safety of Life at Sea Convention which is really the underpinning conventions of safety of life at sea which have been borne over time and how we go about conducting business at sea, how we react in distress situations, the onus on masters and commanding officers and how they would do that. And also the communications which is intrinsic within that. GMDSS is the Global Maritime Distress Safety System, which is really a newer version of the - it's incorporated into SOLAS requirements and it takes into account advances in communications that we see are available now.

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Q. You then lay out what appears to be the various



frequencies, is that correct, and what they are used for?

A. That's correct. That's by no - it's not all of them and it's certainly - if you go away to a number of parent documents such as the actual radio communications orders and instructions under GMDSS and SOLAS you will get the complete list there and they are generally reinterpreted in the Australian communications plan, in a number of other documents which are published within Australia. 5

Q. Then the heading over the next page, communication planning issues. So this is the plan for the fleet as it were that's going to go from Sydney to Hobart? 10

A. That's correct.

Q. You say in planning the stages the following should be considered and (1) efficient and economic use of available equipment resources, including appropriate physics. What does this mean? 15

A. Basically when you first of all think about planning something for communications-wise, you've got to know what you have available, so that really means an audit of the participants, the lowest common denominator will generally drive what your communications architecture will be. So that you'd need to go out, make sure that you know and understand what all your vessels or the yachts in this case are fitted with, what the capabilities as far as physics go in relation to the radio spectrum we've alluded to earlier, that HF and its propagation paths and also VHF and its capabilities. And so really your plan is driven by making it simple and the efficient use of those resources that you have available. 20 25 30

Q. I see the second point is provision of adequate facilities and personnel to meet the requirements. What does that mean? 35

A. What the intent of that is, is that the communications must be set up to meet some purpose. They're there to provide information between various points or various entities. That information must be passed in context and timeliness so that you're really talking about what is it you're trying to communicate. In this case you'd be looking at positional information for the units or the yachts in this case, and that's going to somewhere to be coordinated so it can be collated. And the other thing is that weather information and other information as pertains to transiting down the coast would be required as a cross-path so that you're getting information in return, which you could make a valued judgment on. 40 45

Q. The third point there, information flows. What is the purpose. 50

A. I suppose I've actually just covered some of that. As far as the information flows, you've also got to make a judgment call on how much information there will be. If you have only a single net, will that net be able to meet the requirements. 55

Q. And communications equipment, you point out there's VHF and HF equipment. You deal there with VHF. What's that going to be used for?

A. VHF in the international maritime mobile is really line of sight communications so you're talking about to the horizon, so it's about 20 nautical miles, depending on the height of the aerial, and depending on how you set up your communications. Obviously there are distress communications within the VHF band, but you also have calling frequencies and you also have working channels which you can use in the international maritime mobile band. Channel 16 is the international distress and calling so distress messages can be passed on channel 16, and it can also be used as the initial point or initial contact channel or frequency between two parties, and you are then obliged to move off to a secondary working channel to conduct - pass your information as required, unless it's relating directly to SAR or a distress message.

Q. And then you've got the - you talk about portable hand held VHF transceivers available and should be carried as a back-up. That would be something you would have?

A. That's right. I mean a yacht as we've heard is susceptible to damage to the aerial and battery powered back-up is available and can provide that communications in time of an emergency.

Q. Can I just stop you there. With regards to the VHF situation, were you in court when you saw that hand held spare antenna?

A. Yes, I was.

Q. A good idea, bad idea or of no consequence?

A. If you're relying on an aerial which is at the top of the mast and your mast is susceptible to being - or you are susceptible or you're dismasted, a very good idea to carry something which is a spare.

Q. Then you go down and you say "HF provides communications for extended ranges but is effected by a range of physical factors, these being" and you go on, the aerial design, the power outputs, the angle of the aerial, the groundwave, the skywave. Because I take it that HF basically rebounds from the ionosphere down to the land and then bounces back up again, or skywave as they used to call it, I don't know what they call it now.

A. We still call it skywave and yes, it is refracted by the ionosphere, by the electrical particles in the ionosphere, and so that you can get extended line of - or extended range communications which can be met hundreds of miles and in fact global. You can talk right around the earth by using HF.

Q. And the reason that you have different frequencies is because of course the ionosphere is affected by the daytime, it heats up, it goes up, comes down at night, et cetera, and therefore they miss out on the bounce as I understand it?

A. It's - there are changes in the actual layers within the

ionosphere which - by the sun's own radiation which affects which parts of the ionosphere are going to refract the communications. That's why you generally get differences between day and night, and other parts of the HF problem you can have is that the sun causing these changes, as we are at the moment now of high solar activity, sunspots and flares from the sun also interfere with HF communications and in fact all communications in general.

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Q. You then go on to say "the communications plan itself," and you say "in the simplest of terms the race communications plan needed to address the following as a minimum," and "(1) a system capable of maintaining reliable communications for race co-ordination and dissemination of information to all race participants and control elements." You see that as one of the keys. Why, what's--

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A. Well that's the key to the idea of if you're in a race or in some sort of activity, that you have this plan to meet some sort of purpose, and in this case we obviously want to know where our participants are and pass - so we can collate that information and use that at some later date if we need to, if there is some sort of activity we required to co-ordinate, and that's based on your equipment that you have in the vessels concerned, and so that the yachts as all participants must be able to talk to some entity, in this case generally it will be some sort of controlling agency which has something to do with the organisation and range I would assume of the activity.

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Q. And then "a distress plan." What do you mean by that?

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A. In essence, we always re-promulgate our distress plans. Because they're so important, every time we put out a communications plan distress is always made foremost in that plan and every time we put one out, it's a standing agenda that we have in our communications plans.

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Q. So everyone knows what to do I take it if a situation of distress develops?

A. That comes down to obviously competency of the operators. But to reinforce the distress side of the communications plan, we always re-promulgate that. It's - because it's under international convention it actually doesn't change, so it's just there and it's a reinforcing element that it's available in the plan and also available at the operating positions.

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CORONER: Q. Do you do that when you send a vessel on a single voyage or do you only do it in a fleet situation or a part of a fleet - a flotilla situation?

A. If a vessel is sailing as a single entity, we have a standing communications plan which is in place and that is the distress part of it, and also the SAR communications are also embedded within that, and those are always in force.

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Q. And what if there are a series of vessels?

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A. If there's - it'd be co-ordinated by the commander or whoever's in charge of that organisation and those things would be re-promulgated in that plan.

HILL: Q. So if you're planning it, even though you may have qualified radio operators who should know about channel 16 and the other HF channels, you will tell them again?

A. Yes, we will.

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Q. You as the organising authority?

A. That's as - under a duty of care responsibility that we have for the Navy, we would also do that as our requirements.

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Q. And you have a search and rescue plan to permit those going to the aid of those in distress, so in other words you also tee those in as well, that is the rescuers?

A. That's right and that's linked with the distress communications, those communications for co-ordination of sail which are in place all the time as well and we re-promulgate those--

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CORONER: Q. As well?

A. --in toto.

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HILL: Q. Basically, if I could put it in simple terms, you get the two groups, not necessarily together, but you say that if something goes wrong you will do this and you will do that?

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A. That's right. I mean somebody needs - these things are in place and if a SAR accident or an incident is declared, then there's somebody made in charge and off you go and you co-ordinate, bring everybody up onto the SAR communications plan and move forth into the SAR incident.

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Q. The next heading is race communications and you say "the number of net participants would always have been a challenge," and by net participants you mean each unit or each yacht, 115 of them on the one net?

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A. That's correct, 115 on a single - as in this, in the Sydney Hobart yacht race, would always be a challenge to meet. The amount of information you wanted to pass, if there was no incidents in the race, you probably could achieve that providing you had obviously a good frequency selection to maintain that communications throughout the race. However, as soon as it became not a benign environment and you were using this for a lot of co-ordination, your ability to pass information obviously drops.

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Q. And you give various details about that, and if you're going down from Sydney to Hobart with this many--

CORONER: Vessels.

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HILL: Q. --how many radio operators in control would you want?

A. If we were making it 24 hour a day operation you need to have - well in our context we would generally run a two watch system and so that you'd be at least a minimum of two, so there's somebody on the set at any one time and generally somebody as a relief available during that watch period,

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because manning a - depending on how you man it, whether you have it as a headset or some other - you know, it's just a loudspeaker watch, requires a lot of concentration and a lot of effort and you need to have somebody else to replace that person, and so even though they're on watch, both on watch at the same time, they'll rotate between say the job of actually manning a set or doing some other function associated with that. 5

CORONER: Q. And optimally, a minimum of two, optimally three? 10

A. It depends on - you might have independent - the amount of information that is being passed on that. I mean we have other circuits where we have mainly three or four people on it, depending on what we're actually using the net for. 15

HILL: Q. How long would they be on watch for?

A. We generally run a six hour turn around sort of watch which would be six hours on, six hours off, and you would then be - if you were manning that position doing an hour, an hour about. 20

Q. So two teams to start with?

A. Definitely two teams because you need to be able to maintain that for 24 hours. I mean if you have the luxury of extra personnel then you can go to three teams and do it, you know, and do more. But that comes back to the initial equation which is about personnel and equipment, how many people do you have suffices the tasks at hand. 25

Q. Well supposing there is no restriction. I realise sometimes that forces do put restrictions on you. You are planning it. What would be not so much ideal, but what would you be comfortable with if you could have them, two, three, four? What would be the position? 30

A. Probably a watch with two people in each watch so that there'd be a total of four people, so that you know, you do that hour on and then have somebody else come in for an hour, you know, whilst somebody else was doing something else, get a chance to get a cup of coffee or do something else rather than sitting at the radio set for the whole time. 40

Q. And you'd be happy with that?

A. That would be right. Yes, I'd be happy with that as far as the radio operator goes, but there's also - behind the radio operator is what is the task. It goes back to originally what is the task. Is anybody making decisions based on this information or is it just the radio operator. If he's just taking it down and relaying it or is there somebody making decisions as well. 45

Q. Yes, I understand, but just to have the - as a relay service, not to make decisions but simply there taking things down, two would be adequate? 55

A. If they were only manning that one circuit and to all the participants, that would be fine. If they're manning and talking to another entity, you might need to have

another person there as well.

Q. Just so that I understand this, 115, happy enough with them on the one net?

A. Happy enough that they're on the one net, provided I had some redundancy in what I was - in the plan. 115, if they're doing a sked and doing a position report every six hours or something like that, with 115 you expect the - you know, each position report takes about a minute, it's obviously 115 minutes plus the weather either side of that, so you're sort of building up to sort of a two hour sort of sked sort of window. 5  
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Q. You'd be happy with that?

CORONER: Provided there's a redundancy. 15

A. Yeah, if I had that and in the plan I had some redundancy, you know, additional frequency which you had equipment to man and go to should you require - should the level of traffic on that one frequency get so high, then I - you'd use procedures to direct people away from that to another frequency if you had it available. 20

HILL: Q. So you could either move the particular problem, if I can use that term, to another frequency. 25

CORONER: Off the sked.

HILL: Q. Or if they were jammed on that frequency and couldn't get off, you could actually move the rest of them onto the other frequency? 30

A. You would generally leave the main body on the one frequency you had, and if there was other things happening such as those which - people withdrawing or whatever else, you would move those maybe to another frequency and coordinate there as they withdrew from the race or did something like that. But that's all part of the plan which needs to be put in place with - obviously the frequencies that you would need to do that, obviously the equipment that you would need to do that, and part of the planning and briefing to make sure everybody was happy and knew what the automatic procedures were should this be required. 35  
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Q. So for instance, if there were some that had to retire, they may very well go off that net onto another net as because they are now leaving that group, they may be heading north and therefore they're on to someone else and someone else is taking care of them? 45

A. That's right, I mean as long as you had that organised and that was in place before you actually sailed and you had these contingency plans available. 50

Q. Say for instance the main watch in Sydney were on a different frequency and they were to pick up those that were dropping out, so they'd switch off of the net that was moving down to Hobart and they would switch on to the net that's still based in Sydney so that they could make their 55

way back up, that sort of system?

A. That sort of - something similar to that, I mean in that sort of - those sort of round about terms, yes. I mean as long as you had some way of communicating with them and the purpose was there to make sure that they were in touch with somebody and until they either reached a port and they were finished with the activity they were involved with, or they'd got back here to Sydney or something like that.

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Q. Then you have the distress communication plan and I think that you've gone through that basically, and what it is is that so everybody knows what they're to do?

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A. That's right. I mean in simple terms it's just a re-promulgation of just the frequencies that are available so that they're - you know, they're part of the briefing process so that everybody would know them and they're there. You would expect all the operators to actually know them but you just reinforce that issue.

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Q. And then it's the search and rescue communication plan. That would have to be set in place so that everybody knew what was going to happen?

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A. Much the same as the distress side of it has as well. I mean they run hand in glove. As soon as, you know, you've got a distress incident being called then somebody or something will be swinging to search and rescue to effect something on that distress.

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Q. I see that you've got there in the penultimate paragraph that participants need to be able to communicate with the search and rescue assets including when in the liferaft, and that's why the portable equipment should be available in the event of the fitted systems.

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A. That's right. I mean if you've lost your ship or lost your yacht, you need to be able to generally be able to communicate with the aircraft. Certainly liferafts that we employ have those capabilities, but those capabilities can also be the hand held if you have that, or even an EIPRB associated with the liferaft.

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Q. And there's no question about the fact that in a briefing and a plan, even though you're dealing with say people who understand the distress communication channels and the search and rescue, you re-emphasise it again?

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A. That's correct. I mean we always go through and it's just part of the ongoing safety campaign and education that you continue to reinforce those, because maybe somebody else other than - not just the operators are maybe required to do some of these things. If it's not a radio operator it may be somebody else who may be required.

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HILL: Mr Coroner, I have nothing further.

CORONER: Mr Weber?

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WEBER: No, your Worship.

COLEFAX: I have one question, your Worship. It might be

beyond my brief but perhaps relevant.

CORONER: Yes. It is an inquiry, so go for it.

COLEFAX: Q. Commander, you gave some evidence about the communications equipment and you were taken to the VHF equipment, and you wrote about the portable hand held VHF transceivers which could be carried as a back-up.

A. Yes.

Q. Remember that part of your report? And I think Mr Hill asked you some questions about the aerial which you saw in court today--

A. Yes.

Q. --which was capable of being attached to the hand held equipment.

A. If you had the right interfaces with that piece of equipment.

Q. Yes. The VHF communication which would normally obtain is effected by aerials which are at the top of the mast?

A. In - the normal fitted equipment is normally located at the top of the mast.

Q. And that gives you a range of up to 20 nautical miles in good weather?

A. If it's at the top of the mast you could get a little bit - you'd get further than that. It really depends on the height of the mast to the horizon from that point and also the height of the receiving station which you might be trying to communicate with.

Q. But in good weather, from a mast it's in or about 20 nautical miles, maybe a bit better than that?

A. Maybe a bit - you know, between that sort of 20 and 30 mile band possibly.

Q. What is the range that you would expect to be able to obtain from the hand held equipment using the antenna which was demonstrated in court today, in good weather?

A. As that is low on the horizon, you only have it a couple of metres above the water, it really runs to the horizon from that point and that might be only 12 miles as far as a similar sized aerial or receiver on the horizon. However, obviously an aircraft may be able to receive that a lot further. It's really to the radio horizon that that sort of equipment would go, depending on how that equipment was held and how you were using it on board as well.

CORONER: Q. And in extreme seas I suppose that may be reduced from time to time?

A. As well, you're dropping below the swell, you don't have that line of sight to the horizon.

COLEFAX: Q. And in that extreme condition, what would be your expectations about the effective range that hand held equipment would provide?



A. If you're talking about to another yacht nearby, only a couple of miles, maybe even less than that. It really depends on that ability. If you're on top of the swell, obviously a long horizon, if you dip into the trough, a very short horizon, so it's really very dictated by the sea and swell conditions that you'd be experiencing. 5

Q. Yes, thanks, Commander.

CORONER: Have you anything, Mr Callaghan? 10

CALLAGHAN: No, thank you.

<WITNESS RETIRED

HILL: I wish to thank both naval officers. They did this at short notice actually. 15

CORONER: They did indeed, it's appreciated.

HILL: Mr Coroner, that's the witnesses for today. 20

CORONER: Have we got some tendering to catch up on?

HILL: Yes, we've got some tendering and I've got that here. Tomorrow we will have Lieutenant Commander Neil Galletly and Mr John Young from AMSA and then Robert Brenac. That's the current state of the witnesses. I then have some documents that I wish to tender. There's the original letter from Mr Mooney which set out what the AYF were doing. 25 30

EXHIBIT #39 LETTER FROM MR MOONEY TENDERED, ADMITTED WITHOUT OBJECTION

EXHIBIT #40 DOCUMENTS OF MR COLLINSON GOING TO DOCUMENT 6 TENDERED, ADMITTED WITHOUT OBJECTION 35

EXHIBIT #41 REPORT OF COMMANDER GREAVES TENDERED, ADMITTED WITHOUT OBJECTION

CORONER: Is there anything else we adjourn? A fair sort of a day tomorrow by the sound of it. 40

HILL: It's a busy day tomorrow, yes.

ADJOURNED PART HEARD TO FRIDAY 21 JULY 2000 45

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CERTIFICATION OF TRANSCRIPT

I, We the undersigned being (a) Sound Reporter(s) do hereby certify that the within transcript is a correct transcript of the depositions sound recorded at the New South Wales Coroner's Court in the matter of in the matter of

INQUEST INTO THE DEATHS OF JAMES MICHAEL LAWLER: MICHAEL BANNISTER: BRUCE RAYMOND GUY: PHILLIP RAYMOND CHARLES SKEGGS: JOHN WILLIAM DEAN AND GLYN RODERICK CHARLES

on Thursday 20 July 2000

Dated at GOODSELL BUILDING  
this 25th day of July 2000

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