SENIOR CONSTABLE UPSTON

Q1 This is an electronic record of interview between Senior Constable David Upston of the New South Wales Water Police and Neil Boag on Thursday, the 1st of July, 1998, 1999 at Moorabbin Airport. The time by my watch is now 8.27am and also present is Detective Senior Constable Gray, from Bega Detectives. Neil, as I explained to you prior to the commencement of the interview, Senior Constable Gray and I are making inquiries into the 1998 Sydney to Hobart Yacht Race

- - -

A Mm.

Q1 - - - and in particular, your involvement as a search co-ordinator and search pilot that was involved in the, in the search off the coast of New South Wales and Victoria for vessels in distress. And for the purpose of the interview, could you please give your full name?

A My full name is Neil John Boag.

Q2 And that's spelt, B-O-A-G

A That's correct.

Q3 And your date of birth?

A 24th of the 5th, '58.

Q4 And your address?

A 21 Hastings Avenue in Beaumaris.

Q5 O.K. Neil, could you first of all tell me who you're employed by?

A I'm employed by General Flying Services of .....

Q6 O.K. And that is owned by?

A Ross Carrington.

Q7 O.K. And how long have you been employed at this, this service?

A 15 years.

Q8 And your qualifications whilst you're here?

A Normally I'm the chief pilot of the organisation here. However, at the moment I'm on a secondment to RMIT Flight Training at Point Cook and having to do that, I resigned my position here briefly to undertake that and when we complete that task, I'll be back here as the chief pilot in the future.

Q9 And as chief pilot, what's the, what's your main role?

A It's a multitude of roles. It's staff checking, checking and training. I've also had a fairly long involvement with search and rescue, about 10 years now and in that role I co-ordinate this operation, providing a search and rescue service. But also I train pilots on behalf of AUSSAR for a number of organisations. Predominantly up the east coast and Tasmania, Victoria and South Australia.

Q10 And what formal training have you had in the search and rescue co-ordination and training?

A Well, in terms of a search co-ordinator, that's not my role. We don't co-ordinate the search. We are tasked by AUSSAR to undertake a, a search. We'll be allocated an area or a task. So, we don't co-ordinate from that point of view. All I do is co-ordinate within our organisation for crew rostering et cetera. In terms of

formal qualification, there are none for search and rescue pilots. However, as I said going back to the collapse of the National Safety Council days, there was a void in search and rescue at that time. Having an interest in it, I got the company involved within the Civil Aviation Authority, then Air Services Australia and then on to AUSSAR. And in that, I developed a number of search and rescue methodologies which are still employed today. I've got thousands of hours of search and rescue orientated work, ... operations over water and land. So I've just, I just learnt in the field, as it were.

Q11 O.K. And you're recognised as being duly qualified to carry out that role - - -

A Yes.

Q11 - - - obviously by AUSSAR - - -

A And CASA.

Q11 - - - and CASA.

A CASA, which is the Civil Aviation Safety Authority.

Q12 O.K. Now, we'll take you to the, the time where the search is being conducted for vessels that were participating in the Sydney to Hobart Yacht Race - - -

A M'mm.

Q12 - - - what type of aircraft were you flying at that time?

A We have an aircraft which we dedicate to search and rescue operations which is a Piper Navaho Chieftain.

Q13 O.K. And was there any other aircraft being used at

that particular time from your organisation?

A Not on the same day. On the Monday and Tuesday we had another three aircraft involved in the search.

Q14 And were you flying any of those at any, at any particular times?

A No, I flew the one aircraft, VH Sierra, Alpha, Romeo which is the dedicated search and rescue aircraft on the Sunday, Monday and Tuesday.

Q15 And did you co-ordinate the other aircraft as far as the search was involved, however not tasked in particular.

A I organised the rostering of the crews and the provision of the aircraft, but AUSSAR of course, tasked to their search areas.

Q16 Right. Within those aircraft, what type of special equipment do you have in place?

A In our search and rescue aircraft, it's got everything we need to do search and rescue adequately. It's fitted with two GPS's, marine VHF, 27 megs, marine HF. We have a direction finder in it. Radar altimeter for low level operations and we carry a large array of droppable supplies. The other aircraft which were provided on the Monday and Tuesday are normal, commercially operated type of aircraft and they're GPS fitted so we can accurately fly a search pattern on them. However, they're not designed to deliver equipment or to DF on an ELT.

Q17 O.K. Now, just going back too, is, is part of your

chief pilot and your position here - - -

A Ah-huh.

Q17 - - - how do you go about choosing crew that you would use in a, in a search and rescue?

A I go, I guess unlike most organisations we have a, a number of pilots that work for the company, about 45 in total. Those that are senior enough, with enough multi engine time that are endorsed on the Chieftain with enough experience on that to be able to fly it at low level, and the position is available, we'll train up as a search and rescue rated pilot which allows them to drop equipment, et cetera. Those that are fairly junior within the company come on as drop masters. Which means that they're responsible for all the equipment in the back of the aircraft. It's very much a multi crew sort of role. The pilots do what they have to do and the drop masters prepare the equipment, in the back of the aircraft, into a position where we can drop it. So, pardon me, as they graduate from those ranks, they'll then become more experienced in the overall search and rescue type of environment. And then when they have the piloting qualifications and we have a position available as a pilot, we'll then promote them into a command sort of role and fly.

Q18 And do you instruct the junior crew right through their, their ranking and their time as drop masters?

A Yes, I do.

Q19 And you perform various tasks and operations throughout

their time to give them experience?

A We have three, a minimum of three training sessions, formal training sessions a year which is with AUSSAR. I train the drop masters up to a point where AUSSAR come down and give them a formal rating. I can't rate them as a, as a drop master, but I can as a, for a pilot. Having done their initial ground school and so on, on their first session AUSSAR will come down and evaluate their performance and if they're up to speed, we'll rate them as drop masters. As I said, we only have the three formal training sessions a year, but being an in-house organisation, we often have our own in-house training.

Q20 O.K. All right. Now we'll get onto the actual, the job at hand here is, in particular with the Sydney to Hobart instance - - -

A M'mm.

Q20 - - - we'll start first of all on how you were actually tasked and how you responded.

A On the Sunday, before we'd been formally tasked, we were of the opinion that given the current weather conditions that more than likely something would occur. So we did have a crew fairly well primed up and ready to go. The aircraft had been ..... et cetera. And then we got a phone call from AUSSAR in the afternoon and that tasked us to 70 miles west of Mallacoota and, and we gathered our crew and departed to, to that position. We had a very, very strong westerly wind

which certainly got us down to Mallacoota and off-shore very quickly and from there we commenced our task, which was initially to look for the Winston Churchill. We'd been tasked to a position off Mallacoota and having got on scene were receiving a number of beacons, ELT's, distress beacons, which we began to home on and the first one we came across was Stand Aside which was in the process of having it's crew winched off. And there was an aircraft over the top of that, on top of the helicopter, acting as top cover. So we departed that to see what else we could find. Then we tracked around to a number of other yachts that were obviously in some distress. But we found that our biggest problem was actually identifying them. In our preliminary brief that we were given which was very brief, we weren't given a, a description of the, the vessel at all, the Winston Churchill. In fact on the information on the initial contact there was no mention of the Winston Churchill per se, it was just a distress beacon on a position of 37, 33 south, 150, 13 east. So we proceeded to position and as evidenced in our debrief form which was returned to AUSSAR, we discovered numerous yachts in distress and dismasted and we reported their position to AUSSAR, or the communications aircraft which was providing top cover and giving them a GPS position.

Q21 When you went to that position 37, 33, 150, 13. What did you discover there?

A Exactly at that point, nothing. But at that point we were receiving beacons, so we then tracked on them and we, finding eventually one vessel that had no-one in attendance with it, very close to that position. This particular vessel was heading east. It was dismasted. It did have a distress beacon operating and we were unable to make a formal identification of the vessel due to the conditions which precluded us getting down low enough really to have a look at it, without unnecessarily endangering the aircraft and crew. So, at that stage we'd sighted a large vessel, a freighter nearby and we tried to make communication with that vessel and guide it to that position. However, he was having a hard enough time maintaining his headway and wasn't of any assistance at all.

Q22 Now did you say that there was, there was nobody on that vessel at all or it was just - - -

A No, there was someone on it, they were still there.

Q23 There were people on board?

A Yep, they were heading east. They seemed to be making some headway. They were in control when, when, well as much in control as you can be in those seas and having no mast. However at one stage, with that particular vessel, which I can't still can't identify, he was picked up by a wave that I was sure was going to roll him. In fact we started to set the back-up because we thought we'd have to drop equipment to him and how he escaped the wave, I don't know. There was a following

sea to it and it totally immersed him and we thought he would roll. However that didn't occur, so we stayed on position with him for some time. He seemed to be getting along reasonably well. We were unable to communicate with him on any of the marine frequencies. So, assuming that he was going to be safe, or he was not imminently sinking anyway and because we had so many other distress beacons in the area, we decided we should go and check out these other situations to find if there was anyone else in more dire straits than what he was.

Q24 O.K. How long did it take you, and we'll just, we'll just go back slightly.

A Ah-huh.

Q25 How long did it take you to respond to that search area after leaving Moorabbin?

A I'm not sure what you mean by that.

Q26 Well, what was, when you were initially tasked - - -

A Ah-huh.

Q26 - - - from here by AUSSAR - - -

A Yep.

Q26 - - - what was the time that it took you to get on station?

A Probably about an hour - - -

Q27 Right.

A - - - because of the, the wind we had, we're in, that height we were picking up 80, 90 knots of wind. So we were down there in, in less than an hour, from memory.

Q28 Right. Now, we, we mentioned about identification and you were in particular looking for the Winston Churchill - - -

A Yeah.

Q28 - - - and you come across a number of vessels?

A Yes.

Q29 What, can you expand more on, on the problems that you had associated with identification of the yachts?

A Well the most obvious way to identify them is from sail numbers, but, of course, in those conditions no-one had sails and a lot of the vessels we saw didn't in fact have masts. Because of the sea state which was probably, you know, in around the 80 foot seas at times, we can't get down overly low because the lower you get in those winds, the more turbulence you get. And in fact, it was so turbulent that our search height of 500 feet, we actually tried to drop down a bit to try and find a layer that was a bit smoother, and of course when we couldn't find any better conditions. So the lowest we got down over some of the boats was around about 300 feet and it wasn't prudent to go any lower than that. Being turbulent in the aircraft, you can't hold binoculars and still see with any clarity at all. Say it was the number one mark one eyeball, and given that the, particularly the vessels that we were concerned with didn't have masts as they were lying fairly low in the water, they weren't heeled over with the name on the side of the boat obvious. The only

thing that we were trying to pick up was the writing on the stern, which is quite a small area anyway.

Q30 Yes.

A And we just found that after repeated passes, particularly into wind, because of the wind speed, we were only travelling across the sea at 40 knots. Where, we had a truly speed on, it indicated as, but I'm sorry, of 120 knots when we were in search configuration.

Q31 Right.

A So at that height we had 80 knots of wind and at 40 knots things travel past pretty slowly. But even with that we couldn't get positive ID's until really, the next day when the sea state improved, allowing us to get down to 100, 120, 150 feet.

Q32 O.K. And, and when you, when you initially got information and this is - - -

A Ah-huh.

Q32 - - - I can recall what you told me a minute ago, you got initial information. But the information you got was very scanty, in fact from, from AUSSAR.

A I didn't myself receive the initial brief - - -

Q33 Right.

A - - - but written down by the person who did pick up the brief, is search and rescue, there's an emergency locater beacon going off, associated we think, with the Sydney, Hobart, 70 miles west of Mallacoota. Distress position, is as I said before, 37, 33 south, 150, 13

east. 12 nautical, 12 nautical miles south east of Cape Howe. Call back for a brief. There's another aircraft and a chopper in the area. And it's written here, stand by, I'm not sure exactly what that means. But at that point we called out a crew which were pretty much on stand by any - - -

Q34 Right.

A - - - and most of the crew were within 10 or so minutes of the airport.

Q35 Right. And you had three, three men in your, in your aircraft?

A No, four.

Q36 Four?

A Mm.

Q37 O.K. What, apart from yourself being pilot, what, what were their positions, what was their ..... - - -

A We always fly with two pilots.

Q38 Right.

A A command pilot and a support pilot. We have two drop masters in the back, both qualified to be the drop master, in the back. And that's the minimum crew we fly with.

Q39 Right. How many hours have you flown actually during the, the, the period of time, till you were called off, do you recall?

A On the Sunday?

Q40 Yes.

A We weren't in fact called off, we left the area, we

were holding over Sword of Orion because the conditions became such that we had no visibility, so we had to leave him and we told him that we were departing for Merimbula. And from the time we started up to the time we shut down, was five hours.

Q41 Right. Did you suffer any fatigue at all during that period of time, as a pilot?

A Not, not on a five hour sortie.

Q42 Yes.

A You know, conditions certainly were rough. I think certainly for the pilots it's not quite so bad because, you know, we're strapped into a seat. The drop masters in the back are certainly, when they're down the back end of the aircraft, trying to observe and acquire targets have a harder time of it than the pilots do. However at the end of that sortie we flew back to Moorabbin for a crew change, we picked up another pilot the next day for, that's for two reasons.

Q43 Right.

A But when you fly two pilot, which is our company policy, the fatigue is much less - - -

Q44 Yes

A - - - because the pilot is not on his own, doing everything. He shares the workload.

Q45 O.K. All right. Now you mentioned earlier that you had a number of contacts with vessels in distress?

A Mm.

Q46 Can you recall what happened as, as far as the, the

communications you had with those vessels and, and what was required for them?

A Yep. We sighted a number of vessels as I said, and it's distinctly possible that we sighted the same vessel more than once. When we did sight vessels, we would always try to call them on, particularly marine VHF, 27 megs, and the only vessel we were in communication with on the Sunday was Sword of Orion. And even then, only when we were very, very close to him were we able to pick him up on VHF.

Q47 Right. And what sort of communications did you have with the Sword of Orion?

A The best person to speak to that would be Angus Cameron who was one of the drop masters in the back. He was communicating with the vessel.

Q48 O.K.

A However he was liaising between the boat and the pilots as to what they were doing and the, the person making the calls, who I believe was the skipper of the boat, seemed fairly distressed. He wanted help, help that we couldn't deliver because we asked him if he had life rafts, which he said he did, so all we can deliver is life rafts.

Q49 Ah-huh.

A Being a fixed wing aircraft, we're not in a position where we can actually rescue anyone. We can only just sustain life by dropping equipment.

Q50 Yes.

A And we're very loathe to do that in these sort of conditions because it's very powerful suggestion to someone that I've given you a life raft, you should be in it. So, unless the boat was actually sinking, we would not drop a life raft. The skipper of the boat mentioned that there were injuries on board, including one with a broken leg which I think was himself. And that they had lost one person overboard who was still unaccounted for.

Q51 Did you at all search for that person that was in the water?

A We did a quick lap of the area but we were having enough trouble staying visual with Sword of Orion in the conditions that we were getting into. The further we went to the south east, the lower the cloud base was becoming and looking for a body in the water, it would've been impossible in a fixed wing aircraft, because of the speed. As I said, if we're going the right way, we can be doing 40 knots. But if we're going down wind, we're doing 200 knots. You know, and that's something like 120 metres a second or something.

Q52 Right. Did you log the position of Sword of, of Sword of Orion - - -

A We did.

Q52 - - - when you - - -

A We did. We logged the position of it and when we departed Sword of Orion, we also dropped two ..... buoys to note his position and hopefully give us a

drift. Both those beacons were still operating when we departed and when we returned on the Monday, I, from memory, don't recall being able to receive them again.

Q53 O.K. Do you have those positions?

A I do, but I can't put my finger on them straight away. I can provide them to you later.

Q54 O.K. And can you recall the conversation that Sword of Orion had with your aircraft? Was there a time given when they lost the person over the side, to the time that you actually were over the station, on, on station with them?

A I can't answer that. You'd have to ask the person who was - - -

Q55 O.K.

A - - - receiving the call. The ..... buoy positions which I have here now were on two frequencies, two distinct frequencies, on 119 decimal 05 and 119 decimal 15. The 119 decimal 05 beacon was dropped at 38, 15, 15025. The second beacon, 119 decimal 15, was dropped at 38, 14, 15026.

Q56 So they were dropped within, very close proximity to each other?

A Yeah. As close as we could put them to Sword of Orion.

Q57 O.K. You, you mentioned earlier a terminology, top cover.

A Yep.

Q58 Can you just expand on that?

A What top cover means is having an aircraft to a higher

altitude over a search area to act as a liaison between AUSSAR and flight service. When you're operating at low level, communications are, because the VHF line of sight predominantly, you can get a lot of over communication. With a lot of people on the frequency, obviously chattering away because there was quite a lot going on, it's very difficult to maintain communications and to get information to and from the aircraft, from AUSSAR. If they can ring us by phone, if we're working close enough into shore, that's fine and beaut. We tend to operate direct with AUSSAR and we were right on the edge, at that point, of being able to receive them by phone and sometimes not. So top cover is something I've been advocating as being just what should be a standard operating procedure with a number of aircraft in a search, whereby he sits over the top, flight service talks to him, he talks to aircraft direct. And he, if, if he in fact can communicate directly with AUSSAR, even better and that way you're not getting a lot of jamming out of the frequency by the aircraft operating at low level that can't hear other aircraft available.

Q59 Have you found that, that your suggestions have been adhered to and - - -

A Certainly on the Sunday I think things were thrown together so quickly that, I think top cover was the last thing on their mind. However on the Monday and Tuesday there was a top cover aircraft and that made

life a lot easier. In fact my debrief form to AUSSAR was that on the Monday morning, the COMS were still somewhat uncoordinated because the aircraft that was doing top cover was in fact homer equipped to DF and if someone picked up a beacon, he'd leave his top cover position, come down, do a search and then go back up. And while he was down low we had no COMS. In the afternoon I swapped aircraft to one that wasn't DF equipped, so he just sat up there and, and did the communications and the top cover worked very well.

Q60 And when you talk about DF, you're talking about direction finding equipment?

A Yes, that's right.

Q61 O.K. Is it standard operating procedures for AUSSAR to have a top cover in most circumstances, or is it just something that has just come about?

A It's not something that's just come about. It's something that has been around for a while and I think it, it tends to depend on the complexity of the search, the numbers of search aircraft, as to whether or not top cover is required. And I think that's just a judgement that the, the AUSSAR co-ordinators make as to whether there should or shouldn't be a top cover aircraft. However I've always been an advocate that when you're dealing with multiple aircraft, you should have a top cover there as a standard operating procedure.

Q62 Right. All right. Look, at this stage is there

anything that, any, any suggestions that you would have that you feel that through what you've leant over the period of time or, or through this actual incident, that you can give us that you feel would be important, that would improve things in the future?

A Yeah, there's a number of issues. But just to quickly go back to the top cover situation. The top cover is not just for communications. The top cover also provides a search and rescue reporting function for us, the people that are operating down low, that don't have communications. Unless I can call up on HF or something like that. And what normally would happen is that the top cover aircraft would hold a 30 minute schedule report on each and every aircraft in the search. Which means that if I've got a problem, I can always communicate to that aircraft and if I don't turn up for my 30 minute report, he'll come lookin' for me. So, it provides not only a communication, but a search and rescue basis for the people in the search - - -

Q63 Yes.

A - - - which I think is, is only fair. You've got to look after the people who are out there doin' a particularly difficult job. To your last question, identification of the vessels was the hardest part because of the sea state that in all the years that I've been doing this, I've yet to go out there and do a search and rescue operation in ..... weather in fine and beaut seas. So it seems to be the standard

procedure that when you're looking for a vessel, it's going to be fairly nasty out there. And I think we need to have a better methodology of being able to identify vessels, particularly in an instance like this where we have a known number of vessels because they've entered a race. I think there should be some sort of a, a log that goes to AUSSAR, prior to the race starting with identification photographs, or particular markings or whatever, every individual vessel. If, in our initial brief, someone had told us the Winston Churchill was an old style wooden boat, we would have been in a completely different scenario because we would never, we never sighted that sort of a vessel. So the, the miscommunication that started with that, wouldn't have occurred. The, the colouring of the boats is always, we seem to be dealing with white vessels. You go down to the marina and just about all of them are white and in those sea states, and you've all seen the videos, it was just white on white out there. So it was very difficult to, to find these vessels and to ident them was nigh on impossible out of a fixed wing aircraft. Given better conditions, we could have got down lower, we might have had a better chance. But I mean, and we didn't have that on the Sunday, the Monday and Tuesday, the weather improved significantly and people were identifying them, as you'd see by the reports through to AUSSAR. They were quite, you know, people were stumbling across the same

vessel but identifying it, which made life a whole lot easier. So I think this needs to be a bit more information go with these sort of organised races to AUSSAR, prior to it happening. And that way, when they say that O.K, we're looking for Winston Churchill, they can go to the Winston Churchill page in this, in this log and say, O.K, this is all the information we've got on it, shoot it through the fax and at least we have that, when we go on, on search. The other difficulty we had was homing on, on ELT's. It was achievable but it was difficult because of the number of beacons that were out there and I have heard that you know, there's been thoughts of everyone carrying distress beacons. And I think before that occurs there would want to be a lot more research go into it because if we had 20 ELT's going off in there we'd be virtually running blind with, with direction finders. Because you just can't home on, on beacons that independently. So, there would have to be some consideration to that.

Q64 Well when, while we're discussing that, would your preference be towards the 406, which is an imprinted beacon?

A The 406 is certainly going to give information as far as, you know, a registered beacon, who it belongs to et cetera, et cetera. And that, that would certainly assist if you could say, well we've picked up a beacon which we can track back to a, a vessel. Go to a log and say this is what the vessel looks like, this is

it's colourings et cetera. That gives us that side of it. But we can't home on 406. We've got to home on 1215. So every beacon that is going to be in the water, we have to do a final homing on 1215. So, even though it's a 406, it's still, it's gunna have that problem of X number of beacons, on 1215.

Q65 Right, and that was a problem where you spoke earlier about having to, in fact, de-tune your DF so that you wouldn't have the confusion of the number of - - -

A Yeah. Provided we were close enough to a beacon, and it was strong enough, we could de-tune and that way we cancel out all the others. But that's, you know, it's a bit of an art form I guess. It's not something that is easily achievable unless you've done a fair bit of it.

Q66 All right. And in fact by also de-tuning you, you also lose strength and the ability to pick up a beacon that might be outside the range of the DF, under normal operating - - -

A You do and that, that's why you de-tune - - -

Q67 Yes.

A - - - is to try and cancel out the peripheral signal from other beacons that are further away. Then once you go to that area, you can locate that particular one, log it's position and then get out of the area and then try to establish another beacon, and do the same methodology with that.

Q68 Right. Now getting back onto the 406 - - -

A Ah-huh.

Q68 - - - is there direction finding equipment that can home in on the 406?

A Not that I'm aware of, but I'm no expert in, in DF frequency variables.

Q69 Right.

A Most of the ones that I'm aware of that exist at this stage, I think the 406 is really, I could be wrong but I think the 406 is the satellite compatibility side of it. The military can home in on 243, but we have to home in on 1215. And the, the 406 beacon will give a position to the satellite with the encoding of who it belongs to. That then comes back to Canberra and they tell us that O.K, within a certain area, there is a beacon. But then to, for us to locate it, it has to be done on 1215.

Q70 O.K. Stuart, is there anything you want say?

DETECTIVE SENIOR CONSTABLE GRAY

Q71 Yes, in relation to life rafts, from your experience - - -

A Ah-huh.

Q71 - - - colours of life rafts - - -

A Yep.

Q71 - - - what do you say about that or -?

A Well, there's a, a number of different types of life rafts that are around. Some of them are brightly coloured. Some of them are made of black rubber and vinyl which are very difficult to see, particularly in

poor light. But searching for a lift raft that's brightly coloured certainly gives you more chance of a sighting. But on the Sunday for the Sydney, Hobart sighting vessels was difficult. Sighting life rafts would be very, very difficult and sighting a body in the, in the water would be nigh on impossible. And then once you've sighted it, staying visual with it would again be just about impossible for a fixed wing aircraft. Because eventually we'll have to turn and you know, you pick up a tail wind and you're doing 200 knots. And, you know, you cover a lot of ground very quickly. So staying visual is difficult. Certainly the brighter coloured ones are better but as I said there's a number of different ones around.

Q72 Yes. As far as the yacht identification, what would you life to see from your side of things?

A Yep.

Q73 I mean a mark on the hull of the boat or on the stern of the boat?

A Yeah, again if we can go back to, if the Sydney Hobart I guess is a, is something you almost have to look at in isolation because if a, if a fishing trawler disappears off Portland or something, well we don't have a lot of information about it and, not everyone is going to have photographs of their boat. I mean some do, some don't, et cetera and getting that back to AUSSAR to getting it to us is, is a logistical problem. But where you're talking about an organised race with

100 yachts in it or whatever, I think if you can say, well you know, for the purposes of this exercise in this race, you must mark your vessel according to this and we'll take a photograph of it. We insert that in the log so we can say well O.K, a bloody great big orange circle half way along your hull identifies you. You know, a bloody great purple one on the front end of another will identify it. Something along those lines. I, I don't really know whether they're practical to apply to a boat but certainly you've got no sail numbers, boats with no masts are sitting very low in the water. You can't read the writing on the side and the markings on the end of the boat, on the stern, are very, very small. Unless you're going very slow and very low, you can't read them. There's got to be a better way for an organised race like this, for identification.

Q74 In that Sydney to Hobart, particularly on the 27th, how did you assess your aircraft in that situation, so far as, you know the overall ability of it, in those conditions?

A Well, our aircraft is very capable. It's, it's probably one of only a few aircraft that are dedicated to search and rescue and it's kitted out accordingly. As I said, it's fitted with two GPS's, a radar altimeter, we've got all the communication gear to talk to vessels. We get DF equipment on board, we have a pretty long endurance for it, eight or nine hours,

depending on conditions, so as a search platform, it's very, very good. But fixed wing search and rescue is really about search and sustaining life. We can never rescue anyone. We can go and locate because we can get there faster than most of the helicopters. We can stay there a lot longer than the helicopters and we can deliver a life raft to someone who needs to get out of the water. But we can't physically rescue them. So as far as what we do, the aircraft is very, very capable.

Q75 O.K. With your, your radar altimeters - - -

A Ah-huh

Q75 - - - and, and your vast knowledge in flying, how accurate is the radar altimeter?

A Deadly accurate.

Q76 And is there any other means of judging or comparing the radar altimeter to your actual height?

A You can do it from GPS, but by and large the radar altimeter is a very, very accurate instrument.

Q77 And what do you feel that the degree of accuracy is, or is there a, is there a sort of plus or minus factor of that radar altimeter?

A I couldn't tell you exactly what it is but they're all calibrated as part as being what's called an IFR category aircraft, instruments ..... It means that everything in the aircraft that we use for a means of navigation, or as a means of determining a minima, and what a minima is, is if you're on an instrument approach, you'll set your altimeter, which gives your

height above mean sea level, but a radar altimeter gives you height above ground level. And in all the instrument approaches, you have both those methods of determining what your minimum descent is, and if you don't become visual you have to make a missed approach and go somewhere else or try the approach again. So, because it's one of those instruments, it's calibrated to IFR standard, which is extremely high.

Q78 And the radar altimeter is also very accurate over land, over water?

A Yes.

Q79 And you mentioned earlier that at times you were flying at speeds down to 40 knots.

A That's ground speed.

Q80 Ground speed.

A Not, not flying speed.

Q81 No.

A It's the speed at which the aircraft is going - - -

Q82 So covering over the ground?

A That's right.

Q83 Yes. Now, if that's the case, were you also and I know it may be difficult to recall, looking at your radar altimeter?

A No, not at that time because we weren't down particularly low. 350 feet for search and rescue operations is not low at all. We, in our dropping ..... are down to 150 feet. So there's no need to be looking at a radar altimeter, when we're in search

mode.

Q84 O.K. No, it was just that a questions's been raised over the accuracy of radar altimeters to, using it to determine heights of waves, in particular.

A I don't see why you couldn't do that.

Q85 So it's a possibility that even at, and in particular, this is a helicopter - - -

A Mm.

Q85 - - - at the hover - - -

A Mm.

Q85 - - - you could use that to accurately gauge the height of a wave.

A You could, I believe, and I'm no helicopter pilot, but if you're flying on a standard datum, which would be flying on a, in altimeter setting and you were holding a steady 200 feet for example, on your altimeter, which is barometric pressure and your radar altimeter is goin' up and down 100 feet, then I think you can safely say you've got 100 foot wave. If your altitude from your altimeter is varying, well then your radar altimeter will vary. But if you're holding a constant hover altitude, then what your radar altimeter is doing, is telling you what the waves are doing.

Q86 That's fine.

SENIOR CONSTABLE UPSTON

Q87 All right. Is there anything else now that you'd like to, to add Neil, that you feel would assist us?

A No, not at all. But you've more than welcome to the

documentation we have here - - -

Q88 O.K.

A - - - which contains a fair bit of writing and so on and so forth, some of which might need some explanation. We've got the maps, charts here where we plotted positions.

Q89 Is there any chance that we can get a photocopy of those and all of that sort of thing?

A By all means, yep. Yeah, absolutely.

Q90 All right.

A But it was just that the, the Sunday was a, an interesting day because there was so many things developing as the day went by that, I think it was escalating at a rate that no-one had anticipated. And I don't know what else people could have done to cope with it because one of the guys in the back was just jotting down boats that were seemingly in distress and we've got Business Post Naiad, Sword of Orion, B-52, Midnight Express, Winston Churchill, Kickatin, 97, I'm not sure what that means but there was Stand Aside, all on top of that. So I, I really thought that on the Sunday when we returned for crew change, I had expected on the Monday to find the situation a lot worse than what we came back to find.

Q91 O.K. All right. The time on my watch is 9.10pm, correction, 9.10am. This interview is now concluded.

INTERVIEW CONCLUDED