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5 A. No definitely not I mean, no definitely not because I
mean I was literally saying to someone yesterday that what
a lot of people would have done would have been just done
that, have a quick look and gone this is really too hard
10 and it is such a complex area, you have got all these
interconnected, potentially interconnected homicides and
whatever and just wouldn't have bothered but my experience
of how he has conducted himself throughout this is that he
literally has given it everything and really tried to look
15 at the links properly so that he could pull it together in
a way that would have a just outcome. They are the things
that change a culture.

15 Thank you so much for your involvement in the matter and I
know that you have been working with Mr Page in this
investigation for the Coroner for a long time and I thank
you very much for that and thank you for your involvement
today.

20 <WITNESS RETIRED AND EXCUSED

LUNCHEON ADJOURNMENT

25 <ROBERT WILLIAM BRANDER(2.32 PM)
SWORN AND EXAMINED

LAKATOS: Q. Your full name is Robert William Brander?

A. Yes.

30 Q. You are a Lecturer in the School of Geography at the
University of New South Wales with a research specialty in
coastal geography?

A. It is actually the School of Biological Earth and
Environmental Sciences now.

35 Q. That is a restructure?
A. Yes.

40 Q. You obtained a Bachelor of Science degree in 1989 and
a Master of Science in 1991 in Physical Geography from the
University of Toronto in Canada?

A. That's right.

45 Q. You earned your Doctorate of Philosophy at Sydney
University in 1997?

A. Yes.

50 Q. The subject of your thesis being the measurement and
behaviour of rip currents and you published your findings,
those findings in numerous articles in marine geology and
the journal of coastal research and other publications?

A. Yes other forums yes.

55 Q. You have been conducting research of in relation to
wave current and sediment movements since about 1987 and
that is part of your continuing interest?

A. That is right yes.

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Q. The actual subject study that you adopted was Palm Beach?

A. Yes we focused on Palm Beach.

5 Q. You have also had some practical connection with the surf mainly in April 1995 you moved into the Tamarama Surf Life Saving Club as a caretaker. You stayed there until June 1998?

A. Yes.

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Q. And thereafter you have snorkelled extensively in and around Tamarama and MacKenzies Bay?

A. Yes.

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Q. Now without doing disservice to your very complete research and study you tell us I think that there are three common mechanisms for returning water to the sea, one is the reflection of waves, may we take it that is waves hitting solid objects and being pushed back?

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A. Yes.

Q. If I am getting it wrong pull me up?

A. No that's right.

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Q. Secondly there is the narrow seaward of flowing rip currents which those who swim in the sea are used to and thirdly there is the undertone which is the, I suppose the sensation you get standing in the surf when the wave goes back up--?

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A. It is more of a gentle drift close to the bottom but nothing too strong but it goes off shore.

Q. In that regard you say that the movement of the water towards the shore, sorry during the movement of the water towards the shore there is an associated movement of sediment?

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A. Yes.

Q. And this sediment is generally moved off shore during storm or high energy conditions and is moved back in calm or low energy conditions?

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A. That's right.

Q. I think you then elaborate in your statement in somewhat more detail about these matters which I think we can probably take it as read, we accept your word for that. I do want to ask you about one thing you refer to when you made your statement - the bottom topography of the South Bondi Headland and MacKenzies Bay. You note here it is mainly sand with boulders restricted to the base of rock platforms and isolated submerged rock platforms and rock outer rocks?

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A. Yes.

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Q. The question I have is, is there a capacity by reason of that topography that if a body was to sink in that area that it might become stuck in the rocky topography there?

A. Sure at the base of the rock platforms there is quite

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a jumble of rocks, some are smooth, some are angular, there is crevices, there are holes, there is caves so I can see scenarios where something, anything could get stuck whether it was a log or a body or whatever.

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Q. You made a second and shorter statement which is probably the relevant one for our purposes namely you were asked I think to give your view based upon your assessment of the wave and current conditions in the period of July through to August 1989 and November 22 through to 24 1989 as to what was likely to happen to a floating object such as a body in respect of the currents around MacKenzies Point and Marks Park?

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A. Yes.

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Q. What was your conclusion in that regard?

A. Well for the first period, the July period and the August period the wave energy was a little, well significantly higher than what it was in November but the situation there is that there was offshore winds, there was westerly winds that would tend to, if anything was floating at the surface the wind alone would push it off. The other phenomenon happens when you get offshore winds is that the surface water gets blown offshore, the bottom water brings water up, so anything that was on the bottom, if there was anything on the bottom it would be brought up and then of course the winds would then take it offshore, it is a sort of engine. That area MacKenzies Bay is considered high energy almost all of the time because it actually sticks a fair way out into the ocean, it faces south east so it gets the big and largest waves and most of the waves during that period were from the south east and all you need is a little bit of wave activity to promote rib currents in that environment, so there is almost always an offshore drift due to rip currents from MacKenzies Bay. The third thing that happens there is because it is such a pronounced drop off from the rock platform to the bottom of the sand, it is virtually a wall any wave activity will slap against that wall and be reflected back as you mentioned that creates a lot of turbulence and the general drift in that area is not towards the rock platform which is why rock fishermen can't get back on when they fall off, it is generally offshore. So all the factors there promote offshore movement of sand and it may not be very far but it is certainly offshore and the higher the waves, and I think during July there was a couple of days at the end of July where the waves were fairly high, certainly there would have been large rip currents that might have moved anything out hundreds of metres. So those reasons alone are why you don't often get or very rarely you don't get a beach in that area because the conditions are not conducive to it.

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Q. All of those factors therefore led to your ultimate conclusion in the second statement namely that it is unlikely that a body in the water off the shore platform or on the bed would move over time frames and the climatic

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conditions described?

5 A. I would say extremely unlikely. The November period was actually fairly calm but even in calm periods it is just very unusual, just the reflection alone will keep something offshore.

CORONER: Q. You said it was the rip currents that would stop the fishermen getting straight back on to the rocks?

10 A. Not so much the rips but just it is a very turbulent area, if you fall off a shore platform and you think I can just reach up and get back it is not that easy because the waves are slapping against the platform and going back out and it is very turbulent, and I mean a lot of those
15 fishermen aren't wearing proper clothes anyway so it is not, even when you are snorkelling it is difficult to get, it is easy to get in but it is difficult to get back out.

SAIDI: Q. In that general area the height of the tides around that time have you got any idea about that?

20 A. I didn't get the tidal information per se but the tidal range is not extreme on the Sydney coast so even at the highest high tides that we get and the lowest high tides you are only talking about two metres and so the difference between that and say a neat spring tide when we
25 get small high tides and high small low tides, you are talking a half metre difference so the tides would not create much of an effect. In fact at low tide virtually every day of the year those shore platforms are exposed at low tide and covered at high tide and that does not change
30 that much.

Q. In relation to the height of the tides you have seen the photos of the area that you are talking about?

35 A. Yes.

Q. Have you got them there?

A. Yes.

40 Q. If you were to have a body say two, three, four feet out from the cliff face for example the height of the tides would the incoming tide or the outgoing tide be sufficient strength to pull the body out to sea?

45 A. Yes it would, I mean water, even small waves can actually carry a lot of energy, they have move big large rocks much heavier than a body so I presume you are saying if the body was sitting on the platform the water could pull it off.

50 Q. Have you seen the photos relating to Mr Russell where his body was located?

A. I have seen this photo and was shown by Detective Page where the various locations were yes.

55 Q. Perhaps I should have you--

CORONER: Q. Do you have any problems seeing Mr Russell in situ on that?

A. No. That pool suggested at high tide that would be

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active with water.

5 SAIDI: Q. So where it is positioned, where the body is positioned in situ there on the assumption that the tide came in would you expect the tide in that position to carry a body out?

10 A. If the tide came up that high you would expect it to be moved, I couldn't say for certain where it would go, it could go that way, it could go that way, it could get stuck in any of these holes, it also depends on the waves if there was large waves on a high tide then this whole area would be awash.

15 Q. I suppose one would have to know the extent to which tides were in fact going there and how high they were?

A. What time period was this, was this July or November.

20 Q. Mr Russell's one in July?

A. So the waves were reasonably high in July.

25 Q. Sorry in November?

A. In November the waves were low in fact the waves were quite small so even on a high tide you might not expect the body to be moved offshore.

30 Q. If we change the time frame to winter, July you would expect a body to be carried out?

A. Yes I mean I have seen these platforms from above and it is just not an environment at high tide, I mean the waves come right to the back but again November was usually calm.

35 CORONER: Q. This will probably sound like a silly question but when the waves, if the waves were to come in to claim the body from the rocks is it like, does the wave act like a clawing motion or is there additional water underneath that makes the body buoyant for it to go out?

40 A. Yeah I mean if the big wave breaks on the platform and the water is that deep and if the body is buoyant it will just float anything like jetsam but it is at the mercy, it is a bit more difficult to predict on the platform where the waves are going to go because they can go anywhere, left, right, backwards, sideways but certainly movement.

45 Q. But with the action of the waves on the rock where the body is you would expect it to both lift and carry?

50 A. Yes unless it, I mean on the platform again unless it is really big high tide there is a big gap the body would have got stuck I would imagine, it would have got caught and dragged and I mean the body is fairly thick, fairly big so you would need a fair bit of depth and you normally get huge depths.

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