

1 CMDR RUSH: Sir, Mr John Ashton from the Australian War
2 Memorial is in attendance. Mr Courtney, who was expected
3 to attend this morning, is not here, and we are making some
4 investigation, but I do understand that there may be
5 a health issue in relation to Mr Courtney. Mr Ashton is
6 here and ready to give evidence, sir, and I call him.

7
8 THE PRESIDENT: Thank you.

9
10 <JOHN ANTHONY ASHTON, affirmed: [10.09am]

11
12 <EXAMINATION BY CMDR RUSH:

13
14 CMDR RUSH: Q. Mr Ashton, could you state your full name
15 to the Commissioner, please?

16 A. John Anthony Ashton.

17
18 Q. And your address?

19 A. [REDACTED]

20
21 Q. And your occupation?

22 A. I'm a retired consultant conservator.

23
24 Q. Prior to your retirement, did you work at the
25 Australian War Memorial as the objects conservator there?

26 A. I was one of several objects conservators at the War
27 Memorial, and at the stage that I worked on the Carley
28 float I was the second in charge of the objects laboratory.

29
30 Q. What is an objects conservator?

31 A. An objects conservator - well, conservation is
32 a science skill broken up into different levels of
33 expertise in different materials. Textiles is one area.
34 Paintings and sculpture is another area. My specific area
35 was loosely called "objects", because it just about covered
36 everything else. I tended to specialise in metals and
37 weapons.

38
39 Q. What was your background leading into that role at the
40 Australian War Memorial?

41 A. Initially, I had 27 years in the Royal Australian Air
42 Force, the first 12 years of which as an armament
43 specialist. Then after I retired from the Air Force, I got
44 a job at the War Memorial and went to the University of
45 Canberra to do the degree course on conservation of
46 cultural materials.

1 Q. Mr Ashton, how long were you employed in that role at
2 the Australian War Memorial?

3 A. Seventeen years.

4
5 Q. Mr Ashton, in the course of your work and duties at
6 the Australian War Memorial, did you have cause to bring
7 people together for the purpose of examining a Carley float
8 that had been provided to the Australian War Memorial
9 during the course of the Second World War?

10 A. I did.

11
12 CMDR RUSH: Sir, perhaps before going into the evidence of
13 Mr Ashton, if I can firstly call up NAA.073.0226, which is
14 correspondence from CDRE Collins, who was then the Senior
15 Naval Officer in Western Australia, to the Secretary of the
16 Naval Board. That letter, sir, which bears the date of
17 8 June 1942, concerns the submission for the consideration
18 of the Naval Board that the Carley float from *HMAS Sydney*
19 be forwarded to the Australian War Memorial. CDRE Collins
20 indicates in paragraph 2 as follows:

21
22 *This float was recovered by HMAS "HEROS"*
23 *and as it is one of the few remaining*
24 *relics of HMAS "SYDNEY", it is thought it*
25 *is perhaps worthy of particular care and*
26 *attention. The float is perforated, having*
27 *received machine gun and shellfire, and is*
28 *held in store in Fremantle.*

29
30 THE PRESIDENT: Yes, that document will be exhibit 207.

31
32 CMDR RUSH: Then, sir, a further document, which is
33 NAA.073.0225. This is correspondence from Mr Nankervis,
34 the Secretary of the Naval Board, to the Director of the
35 Australian War Memorial, Canberra, ACT. It bears
36 a handwritten date in the left-hand column, "3/7/42".
37 I think that is the only date on the document, sir.

38
39 THE PRESIDENT: There is a date at the top as well. It is
40 4 July.

41
42 CMDR RUSH: 4 July 1942.

43
44 THE PRESIDENT: I will add that document to exhibit 207.

45
46 CMDR RUSH: Thank you, sir.

47

1 EXHIBIT #207 LETTER BEARING DATE OF 8 JUNE 1942, CONCERNING
2 SUBMISSION FOR CONSIDERATION OF THE NAVAL BOARD THAT CARLEY
3 FLOAT FROM HMAS SYDNEY BE FORWARDED TO AUSTRALIAN WAR
4 MEMORIAL, BARCODED NAA.073.0226; CORRESPONDENCE FROM
5 MR NANKERVIS, SECRETARY OF THE NAVAL BOARD, TO DIRECTOR OF
6 AUSTRALIAN WAR MEMORIAL, CANBERRA, ACT, BARCODED
7 NAA.073.0225

8
9 CMDR RUSH: Q. Mr Ashton, in 1993 or thereabouts, did
10 the Australian War Memorial undertake a study of that
11 Carley float?

12 A. It did.

13
14 Q. Prior to the study, where had the Carley float been
15 held?

16 A. It was in storage in a special crate that we'd had
17 made, which was a large aluminium crate to give it full
18 support. Prior to that, it had been on display in one of
19 the galleries, and if I recall correctly it was inside
20 a protected glass case at that stage, but I believe when it
21 was first on display after it was handed over by the Navy
22 that it was on what is called open display where members of
23 the public could touch it if they wished to.

24
25 THE PRESIDENT: Q. In an area called the Heavy
26 Technology Gallery, I understand?

27 A. I believe that's correct. It was a little before my
28 time there, sir.

29
30 CMDR RUSH: Q. If I can jump right ahead, as
31 a consequence of the investigation of this Carley float,
32 was a report prepared?

33 A. It was.

34
35 Q. Did you have a part in the authorship of that report?

36 A. I did.

37
38 Q. What was that?

39 A. I drew together the technical information, which we
40 derived from various analytical processes, and it involved
41 the Textiles Conservator, myself and the Curator of the
42 Technology Section used some of my report and also his own
43 knowledge to write up his introduction for that report. We
44 also involved outside expertise, people with X-ray
45 materials, and another gentleman that had a long probe
46 arrangement with a camera attached that we could insert
47 down the holes of the float, and of course

1 Professor Creagh, who did the metallurgical analysis of the
2 bits that we extracted from the float.

3
4 Q. Sir, could I ask that COI.002.0016 be put on the
5 screens. Do you have a copy of that report with you,
6 Mr Ashton?

7 A. Yes, I do.

8
9 Q. Is what appears on the screen in front of you the
10 first page of that report?

11 A. It is.

12
13 **EXHIBIT #208 REPORT TITLED "THE SCIENTIFIC INVESTIGATION OF**
14 **THE CARLEY FLOAT" BY JOHN ASHTON AND CATHY CHALLENGOR,**
15 **BARCODED COI.002.0016**

16
17 CMDR RUSH: Q. Perhaps if we can go to 0021, and if we
18 can scroll down the page, there, there is reference under
19 the heading "Preface and Acknowledgments" from Mr Courtney
20 and yourself to various people that seemingly were involved
21 in assisting in providing information to the authors of
22 this report.

23 A. Yes.

24
25 Q. If I can go through a couple of those names, there
26 clearly is an involvement from Mr Courtney, thanking the
27 Superintendent of the Australian Federal Police?

28 A. Yes.

29
30 Q. What was the involvement of the Federal Police?

31 A. Mr Courtney decided that it was not in his expertise
32 or the conservation area's to identify small arms holes,
33 projectile holes, in the float, so he involved the
34 Australian Federal Police, and I believe McFawn, the Acting
35 Sergeant, was the then expert in firearms identification
36 and all things to do with that side of the police, and he
37 was asked to look at the holes in the float and make
38 comments with regard to whether he thought they were small
39 arms, machine guns or whatever he thought they could be.

40
41 Q. Then, Mr Ashton, you thank Mr Chris Ingham in relation
42 to the Videoimagescope system.

43 A. Yes.

44
45 Q. Is that what you were referring to before?

46 A. Yes. This was a probe a bit like the medical probes
47 that they put in various orifices of the human body with

1 a camera at the end. It also had a three-pronged grasping
2 device, which was limited in size, but it was quite capable
3 of getting hold of the majority of the small fragments that
4 we did identify still in the float.
5

6 Q. And then Mr Hollamby, X-radiography equipment?

7 A. Yes, he brought his X-ray plates and machinery in, and
8 with his help we actually took a series of X-radio shots,
9 both vertical and on about a 45-degree angle, I think, in
10 order to locate fragments in the float body.
11

12 Q. And Professor Creagh, for metallurgical examination of
13 what was recovered as a consequence of the two
14 investigations that you've referred to?

15 A. Yes. That was, again, something that we couldn't do,
16 and his expertise was invaluable.
17

18 Q. Could we please turn to COI.002.0024. You set out in
19 the report a description of the Carley float, and you there
20 note a hard rolled copper tube soldered at intervals with
21 divisional plates strengthening the tube. Is the structure
22 a hollow structure?

23 A. Yes.
24

25 Q. The copper tube is of what sorts of dimensions?

26 A. I don't remember exactly, but it was just
27 a strengthening tube to hold the divisional plates, as
28 I recall, which gave a watertight system of bulkheads, so
29 that should one be seriously holed and flooded, the float
30 would still operate as it should.
31

32 Q. Then once you have the copper tube, was that encased
33 in something?

34 A. No, the main tube of the body was not copper. That is
35 galvanised sheet steel, and that was one of the few things
36 that we could positively identify, and that was because
37 Lysaghts had actually stamped the material before it was
38 turned into a float.
39

40 Q. So the galvanised structure had a stamp on it?

41 A. Yes.
42

43 Q. And the stamp referred to Lysaghts being involved in
44 the fabrication of that galvanised steel?

45 A. Yes.
46

47 THE PRESIDENT: Well, the manufacture of it, anyway.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

CMDR RUSH: Q. The manufacture.

A. Yes.

Q. I think you refer to that over the page at 0025, just below the diagram. You refer there to the stencilled words "Lysaght Zincaneal Australia Panel Quality". Where was that stamped, to the best of your recollection?

A. On the inside of one of the tanks, and luckily it was one that had a big enough hole that we could actually see the stencilled words.

Q. If we can go back to figure 1, which is on page 0023, here is a diagram setting out the nature of the construction of the Carley float; is that correct?

A. Yes.

Q. There is reference there at the top of the diagram to compressed cork.

A. Yes.

Q. Then I take it what is pointed to there with the elongated lines is a depiction of the compressed cork?

A. Yes.

Q. Did that cover the whole of the tubular structure?

A. To the best of our investigation and knowledge, yes, because the only way we could have proved that it was completely covered would have been to have taken the canvas outer covering off.

Q. You referred in your evidence, Mr Ashton, to plates reinforcing the structure. In the bottom-left part of the diagram, there is reference to divisional plates with two arrows, and they're pointing to structures that were throughout the Carley float.

A. Yes.

Q. After the cork, was there a wrapping over the structure?

A. Yes, there was a string arrangement tying the cork in place, and then there was a cotton material holding it together, and then the cotton canvas was on the outside of that.

Q. So there were, if you like, two materials, and I think it's described as a sail cloth being the outer material,

1 wrapped around the cork, which was around the tube?

2 A. Yes.

3

4 Q. You refer to various types of Carley floats with
5 different dimensions, and at page 0024 you set out the
6 dimensions and sizes of different types of Carley float.
7 You formed the view that this fitted into a particular
8 number.

9 A. Yes.

10

11 Q. What number did you come to, from the dimensions of
12 the Carley float?

13 A. I don't recall this offhand. Number 10, was it?

14

15 Q. No.

16 A. No.

17

18 THE PRESIDENT: Q. It's number 20, I think, isn't it?

19 A. Number 20.

20

21 CMDR RUSH: Q. At page 0032, under "General
22 Description", in the second line, you say:

23

24 *The floats were made in a range of types
25 and sizes - ours appears to be a No. 20...*

26

27 A. Yes, based on the dimensions that we could measure.

28

29 Q. If I can go back to page 0026, there are some diagrams
30 referred to in the report of a Carley float and the nature
31 of its construction. In that first diagram, we're looking
32 at an aerial shot looking down. If you like, the floor or
33 the bottom of the Carley float - of what was that
34 constructed?

35 A. It was timber, and from our investigation of the
36 timber it turned out to be - thank you to the timber
37 experts at ANU - a New Zealand kauri, as it was called,
38 which doesn't necessarily mean that the timber came from
39 New Zealand.

40

41 Q. Then what we haven't been to, around the sides of the
42 Carley float, there appears to be a rope tied around the
43 Carley float?

44 A. Yes.

45

46 Q. The purpose of that, Mr Ashton?

47 A. They are to hold the wooden decking in place and also

1 to allow for men who are swimming or not in the float to
2 have ropes to hang on to, so that in an extreme case, even
3 with the float full with its complement of people that it
4 could carry, a certain number could still hang on to ropes
5 on the outside with some hope of rescue.
6

7 Q. Now if we can scroll down to the next diagram, we have
8 what appears to be the floor lowered. Was there a system
9 in the Carley floats which enabled the wooden floor, as
10 you've described it, to be lowered into the water?

11 A. When it was flat upon the deck, it was all one level.
12 The netting that holds the wooden floor only comes into
13 operation once the float is in the water, and it has
14 a number of personnel in it whose feet would be down on
15 that floor level while they sit on the outer rim. Provided
16 there were sufficient people in the float, that would be,
17 as it appears in that illustration, sitting under the level
18 of the water.
19

20 Q. At 0029, you set out some of the reasons that led to
21 the examination of this Carley float by the War Memorial.
22 Did it come from *Sydney*? Does it support the theory that
23 *Kormoran* crew killed survivors in the water? And, in
24 particular, were the holes in the float evidence that it
25 had been hit by small arms fire? And, thirdly, does the
26 condition of the float support the theory of a Japanese
27 submarine involvement and did the float contain ordnance
28 from a Japanese submarine?
29

30 In relation to that, Mr Ashton, you've spoken about an
31 examination of the holes in the Carley float. At 0030, in
32 the second paragraph, you refer to there being over 100
33 holes and marks in or on the main body. I'm just
34 wondering, in relation to that, did you form any view as to
35 whether those marks were all related to potentially the
36 engagement between *Sydney* and *Kormoran* or some of those
37 marks had come as a consequence of damage during the time
38 that the Carley float had been in possession of the
39 Australian War Memorial?

40 A. Unfortunately, we were of the opinion, after looking
41 at all of these holes quite closely, quite often with
42 a microscope, that some of them had been caused by person
43 or persons unknown with a ball-point pen simulating
44 a bullet hole while it was on open display in the museum in
45 its early life.
46

47 A lot of the holes were extremely tiny, and all they

1 contained were minute fragments of rust. They had been
2 bits of steel, but very small bits, and they hadn't
3 penetrated more than just into the canvas outer cover and
4 maybe a millimetre or 2 millimetres into the cork.
5

6 So, as we said, some of them were very, very tiny.
7 But there was also evidence of at least one piece of canvas
8 being removed with a pair of scissors. The cut mark on the
9 canvas was quite obvious. Again, while it had been on open
10 display, somebody wanted a souvenir.
11

12 Q. In relation to the holes, you refer in the second full
13 paragraph there to:

14
15 *It was noted that there were many entry and*
16 *exit holes in line and the paths of the*
17 *projectiles were tracked with rods.*
18

19 What are you referring to there, and perhaps if you can
20 describe what you mean by the tracking?

21 A. One of the things that I was trying to prove was that
22 the projectiles didn't just rain down from on high, from
23 outer space sort of thing, or any great elevation. The way
24 of doing it was to set the float up perfectly horizontal on
25 a very good, level concrete floor, and by inserting
26 a series of brass rods, which were a couple of metres in
27 length, into the holes, in through the - what we had to do
28 was to decide that one side of the float was starboard and
29 one was port. We selected the port side, I think it was,
30 as being the entry point for the holes. That was fairly
31 obvious because of the way the metal in the galvanised body
32 was pushed inwards.
33

34 Then, of course, on the opposite side where the piece
35 of shrapnel or the piece of metal had gone right through
36 the float, the metal was expressed outwards. The rods gave
37 us an angle by inserting them into an entry hole and out of
38 a corresponding exit hole. This required a bit of fiddling
39 to line up the right holes, but after we had done a fair
40 bit of experimentation with the different holes and the
41 different rods, we were happy with the idea that the
42 projectiles had actually gone in at quite a shallow angle
43 and out again, a lot of them.
44

45 Q. In relation to the holes and the examination of the
46 holes, you referred to the ballistic advice from the
47 Federal Police --

1 A. Yes.

2

3 Q. -- and I think in the paragraph commencing, "Expert
4 Ballistic Opinions" at the bottom of the screen, you refer
5 to Superintendent Herb Prior and Acting Sergeant McFawn
6 being actively engaged to examine and provide opinion in
7 relation to those holes?

8 A. Yes.

9

10 Q. I think you referred to that being the specific
11 opinion in relation to the use of small arms.

12 A. Yes.

13

14 Q. When we talk about small arms, Mr Ashton, what are you
15 referring to?

16 A. Arms come into a system of a handgun, which is also
17 a small arm, and a small arm is normally something that
18 a single person can operate without having to have extra
19 support. So in this case, it would be a standard issue
20 rifle, a small submachine gun or a handgun of some kind.
21 It was normally nominated by the calibre of the weapon, the
22 size of the bullet hole, the size of the bullet.

23

24 Q. From that examination, were you informed of their
25 opinion in relation to the use of small arms fire in
26 connection with the holes?

27 A. Yes. I wasn't there that particular examination, but
28 Mr Courtney actually referred it to me later, and he said
29 that they were definitely of the opinion that there were no
30 small arms evident to them in the float.

31

32 THE PRESIDENT: Q. None of the holes was made by small
33 arms fire; only one possibly resembled a bullet hole, but
34 its size was 0.5 inch diameter. However, the German raider
35 didn't have weapons of that calibre?

36 A. And also a 0.5 is getting beyond small arms; it's
37 getting into a machine gun-type weapon.

38

39 CMDR RUSH: Q. You also make the comment under this
40 general discussion, Mr Ashton, of the speed of the
41 projectile in relation to it remaining in the float. Just
42 up the page a little bit, in the paragraph where you say,
43 "It was noted", talking about the entry and exit holes, you
44 refer to the speed of the standard rifle bullet as opposed
45 to the speed which you think would be relevant to
46 a particle remaining in the float. In general terms, can
47 I ask you about that. For a bullet to remain in the float,

1 would that be likely?

2 A. If the ranges between the two ships are as stated by
3 Detmers, then it's highly unlikely that a rifle bullet
4 would have remained in the float body, because there is not
5 enough density in the float body to trap a bullet.
6 Certainly, if the damage happened as we think on board the
7 deck of *Sydney* - and, again, the distance between the two
8 ships was too small for a bullet to be trapped - unless it
9 had hit several other things first and the velocity was
10 reduced to a minimal amount, but there was no evidence of
11 a bullet striking it after it had been deflected from
12 something else.

13

14 Q. So in relation to distance there, you refer in the
15 third-last line of that paragraph to 1,000 metres in
16 relation to a military rifle bullet still travelling at
17 360 metres per second after 1,000 metres.

18 A. Yes.

19

20 Q. Earlier in the paragraph, you say:

21

22 *Anything travelling at a speed over about*
23 *20 metres per second (75 km/h) would be*
24 *likely to go straight through [the Carley*
25 *float]...*

26

27 A. Yes.

28

29 Q. So even at 1,000 metres --

30 A. It's still too fast.

31

32 Q. And anything closer would obviously be too fast?

33 A. Yes.

34

35 THE PRESIDENT: Q. Mr Ashton, in the following
36 paragraph, you refer to the fact that the float had a large
37 number "5" painted longitudinally on one side. You say:

38

39 *... available photographic evidence of*
40 *floats on Sydney does not show these*
41 *numbers.*

42

43 The Inquiry has uncovered other photographs which do show
44 some Carley floats with numbers on them, and I have been
45 told that there is a tradition that Carley floats were
46 numbered - I think it's even on the port and odd on the
47 starboard side. So if that be right, "5" would suggest

1 that this Carley float came from the starboard side. Were
2 you aware of that concept of painting numbers on Carley
3 floats?

4 A. No. We did not get any information available to us
5 with regard to that numbering system.

6
7 THE PRESIDENT: We have certainly seen a photograph with
8 "2" on it on one Carley float and I think another number,
9 but I can't recall.

10
11 CMDR RUSH: Sir, if we can bring up COI.002.0032,
12 figure 61 should show from the DSTO RINA report the diagram
13 of the respective places of the Carley floats. Figure 61
14 is at page 91 of the DSTO report, at DSTO.003.0001.

15
16 THE PRESIDENT: There are two 20 Carley floats shown
17 slightly forward of amidships.

18
19 CMDR RUSH: Correct, sir.

20
21 THE PRESIDENT: So it is likely, if it had "5" on it, to
22 be the starboard one of those if it came from Sydney.

23
24 CMDR RUSH: Q. Do you see there, Mr Ashton, just above
25 "Figure 61", the reference to the final two floats:

26
27 *... the Pattern No. 20s were stored on the*
28 *boiler room vent forward of the forward*
29 *funnel ... but there are no known*
30 *photographs of this storage position.*

31
32 A. I see.

33
34 Q. Is that a location that you were working on or not at
35 the time of your report?

36 A. No.

37
38 Q. Am I right in thinking that you were probably working
39 on a location of the floats being stowed on the stern of
40 the ship?

41 A. Correct.

42
43 Q. In relation to the stowage of the Carley floats, did
44 you have them in a horizontal or a vertical position?

45 A. We operated from a photographic image, which showed
46 one float sitting inside another, flat on the rearmost open
47 deck of the ship.

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47

Q. Were the holes that you have referred to in the Carley float on one particular side of the Carley float or were they of a more general nature around the circumference of the Carley float?

A. There were more on one side than there were on the other. There were more entry holes than there were exit holes.

Q. You mentioned before allowing for the horizontal position, the angle of entry of the holes. Are you able to give us a description of that, even by using your hands, as to what you're referring to as the angle of entry?

A. Assuming that the float is perfectly horizontal and a line running through it would be zero degrees, anything above it is plus; the lowest measurements of the rod system that we used was 5 degrees above horizontal, and the highest angle was 33 degrees above horizontal. But they were also spread from front to back, and with zero running through the centre of the float, from side to side they seemed to be operating from minus 17 degrees - that's 17 degrees to the left of centre - and 23 degrees to the right of centre.

Q. Perhaps if we can go to COI.002.0045, under the heading "Results", in the second paragraph there, you state:

The projectiles from the various munitions have struck the float primarily from one side, with only two entry holes on the other long side.

A. That indicated to us that a piece of metal had hit something and bounced back into the right-hand side, as we saw it.

THE PRESIDENT: Q. Does that increase the probability that this Carley float was in fact sitting horizontally?

A. Yes, we think so.

CMDR RUSH: Q. You say that you counted 339 disruptions of the canvas likely to have been caused by projectiles.

A. Yes.

Q. So they were the individual holes, if you like, that you assessed as being caused as a consequence of projectile

1 damage?

2 A. Yes, some of them being very, very small.

3

4 Q. Over the page at 0046, you also examined the wooden
5 structure, and that also you refer to as having sustained
6 projectile hits, I take it, that had caused loss of the
7 timber?

8 A. Yes.

9

10 Q. And also the netting?

11 A. Yes.

12

13 Q. What occurred there?

14 A. I estimated that the only way that that particular
15 damage could have happened was if the float was stored
16 horizontal on something solid. If it had been in the
17 water, the wooden decking would have been slightly lower
18 than the float, perhaps. Certainly, the netting loss could
19 have been the same if it had been shot up in any way while
20 it was floating. But some of the entry holes and exit
21 holes also went through the wooden structure, or seem to
22 have gone through the wooden structure as well, which
23 indicated that it was certainly stored somewhere flat.

24

25 Q. Mr Ashton, you spoke of the investigation of
26 particular holes, and I take it retrieval of projectiles
27 and material that was in the holes.

28 A. Yes.

29

30 Q. I think you even referred to a wrapper of chewing gum
31 or something to that effect.

32 A. That's correct.

33

34 Q. Did you believe that that wrapper came from *Sydney* or
35 from somewhere else?

36 A. We were fairly sure that the wrapper was actually from
37 when it was on open display, and some member of the public
38 or some person had decided it was a good place to poke
39 a bit of rubbish. We also found a bit of emu feather, so
40 this sort of indicated initially that maybe the light horse
41 had sunk it.

42

43 THE PRESIDENT: Q. That seems improbable.

44 A. Indeed.

45

46 CMDR RUSH: Q. What you retrieved - the metal and the
47 fragments that were retrieved from the holes - were sent

1 off, I take it, for metallurgical examination?

2 A. They were. They were delivered by myself to
3 Professor Creagh's laboratory, and we did the analysis,
4 some while I was present and some after I had left.
5

6 Q. Professor Creagh will give evidence later today, but
7 if I could ask you a couple of questions concerning that
8 analysis, as referred to in the report, at 0047, under the
9 heading "Discussion", in the first paragraph, it is stated:

10

11 *Our investigation indicates that the*
12 *composition and morphology of the*
13 *projectiles which struck the Carley float*
14 *is consistent with pieces of exploded*
15 *munitions similar to other pieces of*
16 *munitions in the AWM collection. The*
17 *projectiles are assumed to be from*
18 *'incoming' munitions from the Kormoran as*
19 *it is highly improbable that the Sydney's*
20 *ammunition fired at Kormoran would have*
21 *exploded so close to the Sydney.*

22

23 A couple of matters arising out of that - was a comparison
24 made of the metallurgical examination against materials
25 that were held by the AWM of other exploded munition?

26 A. Yes. Unfortunately, we couldn't access all the types
27 of munitions that *Kormoran* carried, but we did have 20mm
28 ammunition and also the 3.7 anti-tank gun, I think was
29 other one that we had. These were standard weapons in use
30 by the German Army and the Navy.

31

32 Our investigation, the analysis of them, unfortunately
33 could not prove that the fragments we had came from those
34 German munitions. They were similar, and that was all we
35 could say. But there again, we could probably have
36 analysed Japanese, American and any other munitions from
37 that period and come to the same conclusion. They all used
38 steel, a mixture of iron with various amounts of carbon,
39 and they all at this period started to use tungsten and
40 other alloying elements to make the steel harder.

41

42 Q. If we could go back to 0045, "Sample 7 is also
43 aluminium", this is a concluding remark to examination of
44 the projectiles. It is stated in the report:

45

46 *Three examples of contemporary German*
47 *munitions (20mm and 3.7cm) were also*

1 *submitted for analysis. The results of*
2 *that investigation indicated that, although*
3 *there were similarities in the Fe (iron)*
4 *content between the samples removed from*
5 *the float and the unexploded munitions,*
6 *there were major differences in the other*
7 *alloying elements.*

8
9 So just comparing those two statements, Mr Ashton, you
10 appear to be saying there that there were dissimilarities
11 between the German munition tested and what was found in
12 the Carley float.

13 A. Yes. There were similarities and dissimilarities.

14
15 THE PRESIDENT: Q. But the dissimilarities were
16 sufficient for a conclusion to be reached that, whatever
17 these fragments were, they did not come from 20mm or 3.7cm
18 armaments?

19 A. They could have. There were enough similarities in
20 munitions in the period to have said they could have come
21 from them, but there was no positive proof. But also, as
22 we discussed long after this report was made, the steel
23 could have been parts of the superstructure of *HMAS Sydney*.

24
25 Q. I'm a little confused here. *Kormoran* had three major
26 forms of armament. She had 15cm shells of two types; she
27 had a 3.7cm gun; and she had 20mm machine guns.

28 A. Cannon, yes.

29
30 Q. The DSTO report has indicated that *Sydney* suffered, on
31 each side, port and starboard, 41 on one side and 47 hits
32 on the other side from 15cm shells and that this would have
33 created a fire storm of shrapnel pieces which they
34 estimated to be in the order of 200,000. Looking at this
35 material on the Carley float, I had thought that this
36 analysis indicated that it was improbable they came from
37 the 3.7cm shells and it was improbable that they came from
38 the 20mm machine guns, and therefore the probability was,
39 as I initially read this report, that they were caused by
40 fragment pieces from exploding 15cm heavy armaments. Did
41 I correctly understand you to tell me a minute or two ago
42 that that's not right?

43 A. Well, because we had no 150s to analyse, we couldn't
44 make any statements whatsoever about them.

45
46 Q. I understand that. What I don't understand is why it
47 is that you say that these fragments may have come from the

1 20mm machine guns or may have come from the 3.7cm guns,
2 because I had thought this report said the opposite.

3 A. If that is the case, then that's an editorial error on
4 my part. The intention was that the German munitions, we
5 assumed, were hitting the *Sydney* and the fragments of them,
6 after either exploding because of their fusing system or
7 because they were hitting parts of the *Sydney*
8 superstructure, were then entering the Carley float before
9 it got washed overboard.

10
11 Q. Yes, that all sounds very logical to me.

12 A. That was all we could go by, because we had no other
13 information that you just mentioned, for instance, the DSTO
14 information.

15
16 Now, we couldn't say the 20mm and the 3.7cm were
17 definitely the cause of it, but we could say that there
18 were similarities in the metal content of the fragments and
19 the two types of munitions that we were able to analyse.

20
21 Q. When you say there were similarities, what the report
22 says is that there were major differences in the other
23 alloying elements.

24 A. Yes, but the similarities were in the steel.

25
26 Q. That means that you were able to form a view in
27 relation to the 3.7cm and the 20mm; that view was that you
28 were uncertain whether they came from it or not, but you
29 could form no view about whether or not these fragments
30 came from the 15cm munitions because you were not able to
31 test against them?

32 A. Because we had no knowledge of it, yes.

33
34 Q. Is that right?

35 A. Yes.

36
37 CMDR RUSH: Q. Mr Ashton, you say in the report at 0047
38 under the heading "Discussion":

39
40 *Our investigation indicates that the*
41 *composition and morphology of the*
42 *projectiles which struck the Carley float*
43 *is consistent with pieces of exploded*
44 *munitions similar to other pieces of*
45 *munitions in the AWM collection.*

46
47 The "similar" there is referring to the iron content that

1 is remarked upon in the paragraph that you have just been
2 discussing?

3 A. Yes, that was the only similarity - in the iron and
4 carbon content, the steel content.

5
6 Q. I take it, then, from what you've said that there were
7 major differences in the alloying component, but you can't
8 rule out, as I understand your evidence, the 20mm and 3.7cm
9 on that alone, because of other similarities.

10 A. Yes.

11
12 Q. You then go on in the next paragraph under
13 "Discussion" to comment in relation to the history of the
14 jacketed bullet, and about halfway down, you say:

15
16 *The standard ammunition for use with German*
17 *machine-guns right through the second world*
18 *war was the copper alloy jacketed,*
19 *lead-filled 178 gr weight bullet with*
20 *a muzzle velocity of 676 m/s. If, as*
21 *proposed, the float was shot at by*
22 *machine-guns, any projectiles from the*
23 *German weapons then in use would be*
24 *expected to have penetrated the relatively*
25 *soft body of the float with clean entry and*
26 *exit holes. No such holes were found and*
27 *nothing discovered and removed from the*
28 *Carley float has any morphological or*
29 *metallurgical resemblance to the type of*
30 *machine-gun bullets that could have been*
31 *used during [that period].*

32
33 A. Yes.

34
35 Q. When you referred to "morphological or metallurgical
36 resemblance", you were referring, firstly, to the analysis
37 undertaken by Professor Creagh?

38 A. That's the metallurgical resemblance. The
39 "morphological" refers to the physical shape.

40
41 THE PRESIDENT: Q. So that means that I can eliminate
42 machine guns?

43 A. Yes.

44
45 Q. That's the 20mm machine gun?

46 A. Well, 20mm is actually a cannon, but we were referring
47 here to the small 7.92mm, which was the standard machine

1 gun bullet.

2

3 CMDR RUSH: Q. At 0059 and following, appendix 6 to the
4 report is the analysis of projectile samples, and that was
5 undertaken by Professor Creagh?

6 A. Yes.

7

8 Q. At any time after the report, Mr Ashton, were you made
9 aware of a comment by Professor Creagh as to the potential
10 for shrapnel from the infrastructure of *Sydney* being part
11 of the metal fragments identified in the Carley float
12 consequent upon munition from *Kormoran* hitting the
13 superstructure?

14 A. Yes, that was a proposition that Professor Creagh
15 suggested. Unfortunately, it was a fair while after the
16 report was compiled and actually published.

17

18 Q. In relation to Professor Creagh's work for this
19 report, was it purely for the metallurgical examination?

20 A. Yes.

21

22 Q. Just as a matter of completeness, from the report, if
23 we could go to 0062. Plate 1 is a photograph of the Carley
24 float on display in the old Heavy Technology Gallery. When
25 you refer to "open display", firstly, as best you
26 understand it, does that depict the Carley float as it was
27 available for public inspection?

28 A. Yes.

29

30 Q. Without any form of barrier or anything else to stop
31 it being --

32 A. No, there was nothing between it and the public, and
33 unless a museum attendant or visitor services person was
34 actually in that hall, there would have been nothing to
35 stop people doing whatever they wanted with it.

36

37 Q. At 0066, that is a photograph of the wooden platform
38 of the Carley float, as presented to you, similar to that
39 at the time it was examined by you?

40 A. Yes, this is with the Carley float actually turned
41 upside-down.

42

43 Q. So that reverse showing the wooden platform?

44 A. Yes.

45

46 Q. Over the page, what is depicted there, Mr Ashton?

47 A. This is the endoscope examination, which is the tube

1 with the camera in the ends of it, and also the little
2 three-pronged grab device which was used and actually
3 provided gratis by Mr Ingham. The idea was that the image
4 from the end of the lens came back and was produced on
5 a TV-type screen, and by moving the probe we could actually
6 see what was occurring at the end of it, so we could
7 actually zoom in on pieces of interest before trying to
8 extract them.

9
10 Some of the X-ray shots showed pieces that, when we
11 tried to locate them with this method, proved to be too
12 large to extract through the holes, and one piece, which
13 looked like it would have been of great interest, was
14 a fairly large piece of shrapnel. It had gone in, but we
15 couldn't get it out.

16
17 CMDR RUSH: I have no further questions, sir, of
18 Mr Ashton. May he be excused?

19
20 THE PRESIDENT: Thank you, Mr Ashton.

21
22 <THE WITNESS WITHDREW

23
24 CMDR RUSH: Sir, I call Professor Creagh.

25
26 <DUDLEY CECIL CREAGH, affirmed: [11.16am]

27
28 <EXAMINATION BY CMDR RUSH:

29
30 CMDR RUSH: Q. Professor Creagh, could you state your
31 full name to the Commissioner, please?

32 A. Yes, I'm Dudley Cecil Creagh.

33
34 Q. And your address?

35 A. [REDACTED]

36
37 Q. And you are a professor with a particular role in
38 teaching of metallurgy?

39 A. Not so. I am trained as a metallurgist, materials
40 scientist. I'm currently - well, I was until the beginning
41 of this year - Professor and Director of Cultural Heritage
42 Research at the University of Canberra and I have worked
43 with the War Memorial since about 1988 on all matters to do
44 with analysis of materials.

45
46 Q. What are your qualifications in relation to those
47 aspects?