13 Empirical evidence: the HEROS Carley float

13.1 At 2354H on 27 November 1941 the Naval Officer-in-Charge Fremantle signalled the Central War Room in Melbourne:

A Royal Australian Navy lifebelt was picked up in position 024° 06’ south 110 49’ east at dusk today Thursday “WYRALLAH” “HEROS” and “OLIVE CAM” ordered to be in this position by daylight tomorrow Friday. “WYRALLAH” is to conduct search in vicinity of this position.¹

As directed, HMAS HEROS went to the area where the life belt had been picked up. At 0902H on 29 November South Western Area Combined Headquarters signalled the Central War Room, ‘HEROS reports picking R.A.N. type Carley float at 0300Z 28 in position 024°07’ south 110°58’ east badly damaged by gunfire … HEROS will have to return after today’.²

Three hours later, at 1205H, SWACH signalled the Central War Room:

Intelligence to date thought to refer H.M.A.S. “SYDNEY” (a) one RAN(?i life belt picked up by “EVAGORAS” in position 024° 06’ S 110° 49’ E at about 1000 Z 27th (b) W+ picked up one inflated RAN type life belt in position 024° 22’ S 110° 48’ E at 1015 Z 27th. O T R C 11/39 on rubber. Securing tape knotted but snapped (c) “HEROS” picked up RAN type Carley float in position 024° 07’ S 110° 58’ E Carley float badly damaged by gunfire.

(+ group indicated commence spelling but word not spelt, evidently intended “WHYRALLA”)³

13.2 It is not known who it was who informed SWACH that the Carley float was ‘badly damaged by gunfire’. It must have been somebody on HEROS because the signal from SWACH to the Central War Room sent at 0902H on 29 November was sent while HEROS was still at sea. No signal from HEROS to SWACH has been found. At 1053H on 29 November the District Naval Officer Western Australia signalled the Naval Board, “HEROS” is leaving search area today because of fuel’.⁴

¹ SPC 006.0073
² SPC 006.0128
³ SPC 006.0136
⁴ SPC 006.0131
13.3 The recovery of the Carley float by HEROS on 28 November 1941 at 24°07'S 110°58'E occurred as a result of the search for survivors of HMAS SYDNEY. The search produced the results shown in Table 13.1.

Table 1.31 The search for SYDNEY: results

<table>
<thead>
<tr>
<th>Time/date</th>
<th>Event</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>23 November (not known until 27 November)</td>
<td>AQUITANIA picked up a raft containing 26 Germans.(^5)</td>
<td>24°35'S 110°57'E</td>
</tr>
<tr>
<td>24 November</td>
<td>A raft containing German survivors was picked up by TROCAS.(^6)</td>
<td>24°06'S 111°40'E</td>
</tr>
<tr>
<td>0701(H) 25 November</td>
<td>An aircraft reported a lifeboat with occupants.(^7)</td>
<td>24°52'S 111°09'E</td>
</tr>
<tr>
<td>PM 25 November</td>
<td>Two lifeboats plus Germans were sighted on the beach 57 and 70 miles north of Carnarvon.(^8)</td>
<td></td>
</tr>
<tr>
<td>26 November</td>
<td>Aircraft located two lifeboats. (CENTAUR later took one boat in tow.)(^9)</td>
<td>24°14'S 112°24'E and 24°39'S 112°02'E</td>
</tr>
<tr>
<td>1920H 26 November</td>
<td>KOOLINDA picked up a lifeboat containing 30 men.(^10)</td>
<td>24°07'S 112°46'E</td>
</tr>
<tr>
<td>27 November dusk</td>
<td>WYRALLAH picked up a ‘Royal Australian Navy lifebelt’. It bore the markings ‘OTRC 11/39' on the rubber portion. The securing tapes were knotted but snapped.(^11)</td>
<td>24°22'S 110°49'E</td>
</tr>
<tr>
<td></td>
<td>An air search reported a lifeboat containing Germans. (YANDRA took these people on board.)(^12)</td>
<td>25°04'S 112°04'E</td>
</tr>
<tr>
<td>28 November 0901(H)</td>
<td>WYRALLAH picked up ‘foreign life belt, 2 Carley floats and 1 German body’.(^13) The life belt was black and partially burnt. The 2 Carley floats were tied together and contained the German body. The Carley floats were only large enough to hold 4 men ‘and were obviously foreign’. The German body was buried at sea.(^14)</td>
<td>24°10'S 110°54'E</td>
</tr>
<tr>
<td>28 November 1100(H)</td>
<td>HEROS picked up ‘1 R.A.N. type Carley float ... badly damaged by gunfire’. She also picked up a green box resembling a dog kennel. (It was later learnt KORMORAN carried a dog and a monkey.)(^15) (Note that HEROS, WYRALLAH and OLIVE CAM had been ordered to search in the area where the RAN life belt had been found at dusk the preceding evening.)(^16)</td>
<td>24°07'S 110°58'E</td>
</tr>
</tbody>
</table>

\(^5\) WAM.009.0088 at 0089
\(^6\) WAM.009.0088
\(^7\) WAM.009.0088
\(^8\) WAM.009.0088
\(^9\) WAM.009.0088 at 0089
\(^10\) WAM.009.0088 at 0089
\(^11\) SPC.006.0073
\(^12\) WAM.009.0088 at 0089
\(^13\) SPC.006.0082
\(^14\) WAM.009.0088 at 0089
\(^15\) SPC.006.0128; WAM.009.0088 at 0089
\(^16\) SPC.006.0073; SPC.006.0131
13.4 The following is now known:

- HMAS SYDNEY sank at 26°14'45"S 111°12'55"E.\(^\text{17}\)
- HSK 8 KORMORAN sank at 26°06'32"S 111°04'21"E.\(^\text{18}\)
- Both sinkings occurred late on 19 November 1941.
- The positions of the sinkings are about 12 miles apart.

13.5 If the two German Carley floats tied together and containing the body of a German sailor came from KORMORAN, as obviously they did, and the Carley float recovered by HEROS and the RAN life belt recovered by WYRALLAH came from SYDNEY, as common sense suggests they did, these objects would have experienced similar drift patterns.

13.6 Figure 13.1 shows the now known location of the wrecks of SYDNEY and KORMORAN. It also shows the date and location of survivors and objects recovered in the days shortly after the engagement.

Common sense suggests that all the objects came from either SYDNEY or KORMORAN.

13.7 The objects located—one (a life belt) from KORMORAN and the other two (a life belt and a Carley float) from SYDNEY—were recovered within about 18 hours of each other, between dusk on 27 November and 1100H on 28 November, and within 10 miles of each other. They had obviously drifted from the location of the sinkings some 145 miles away.

It is to be remembered that the life belt in the foreign Carley float was ‘partially burnt’ and the float contained the body of a German sailor. KORMORAN was the only German ship in the vicinity—and certainly the only one in the vicinity that had been on fire and had sunk. HEROS had also picked up a box ‘resembling a dog kennel’ on 28 November at 1100H: KORMORAN had had on board a dog kennel.\(^\text{19}\) Similarly, SYDNEY was the only RAN ship in the vicinity that had sunk and that, it is now known, had engaged in a battle in which she suffered severe gunfire damage likely to have damaged the Carley floats on board. There is no other source from which a damaged Carley float could have come.

\(^{17}\) FSF.010.0001 at 0037
\(^{18}\) FSF.010.0001 at 0042
\(^{19}\) WAM.009.0088 at 0089
Figure 13.1 Location of lifeboats, survivors and relics found after the SYDNEY–KORMORAN engagement

Legend

<table>
<thead>
<tr>
<th>Item</th>
<th>Date located</th>
<th>Latitude</th>
<th>Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lifeboat—26 men picked up by AQUITANIA</td>
<td>23.11.41</td>
<td>024°35'S</td>
<td>110°57'E</td>
</tr>
<tr>
<td>Lifeboat—25 men picked up by TROCAS</td>
<td>24.11.41</td>
<td>024°06'S</td>
<td>111°40'E</td>
</tr>
<tr>
<td>Lifeboat—46 men at 17 Mile Well, Quobba Station</td>
<td>24.11.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifeboat—57 men at Red Bluff</td>
<td>25.11.41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lifeboat—31 men picked up by KOOLINDA</td>
<td>26.11.41</td>
<td>024°07'S</td>
<td>112°46'E</td>
</tr>
<tr>
<td>Lifeboat—62 men picked up by CENTAUR</td>
<td>26.11.41</td>
<td>024°39'S</td>
<td>112°15'E</td>
</tr>
<tr>
<td>Lifeboat—72 men picked up by YANDRA</td>
<td>27.11.41</td>
<td>025°00'S</td>
<td>112°20'E</td>
</tr>
<tr>
<td>RAN life belt picked up by WYRALLAH</td>
<td>27.11.41</td>
<td>024°22'S</td>
<td>110°49'E</td>
</tr>
<tr>
<td>Foreign life belt and two Carley floats picked up by WYRALLAH</td>
<td>27.11.41</td>
<td>024°10'S</td>
<td>110°54'E</td>
</tr>
<tr>
<td>Carley float picked up by HEROS</td>
<td>28.11.41</td>
<td>024°07'S</td>
<td>110°58'E</td>
</tr>
</tbody>
</table>

20 RAN.002.0173
21 PINQ.REP.001.0001 at 0052
22 NAA.026.0451
23 PINQ.REP.001.0001 at 0052
24 PINQ.REP.001.0001 at 0052
25 WAM.010.0188
26 NAA.026.0348
27 AWM.005.0106
28 PINQ.REP.001.0001 at 0052
29 PINQ.REP.001.0001 at 0052
30 PINQ.REP.001.0001 at 0052
Did SYDNEY carry Carley floats?

13.8 Photographs establish beyond doubt that SYDNEY carried Carley floats.

Photographs taken in November 1935 as SYDNEY passed Gibraltar show two Carley floats on the 4-inch gun deck. In accordance with Naval custom, the float numbered 3 is stored on the starboard side and the float numbered 4 is stored on the port side (see Figure 13.2). There must have been at least two other floats, numbered 1 and 2. The Carley float recovered off Christmas Island on 6 February 1942 was numbered 2.\(^{31}\)

Figure 13.3 is thought to be the photograph referred to in CAPT Burnett’s report of proceedings for September 1941.\(^{32}\) The photograph was reproduced in G Hermon Gill’s *Royal Australian Navy 1939–1942*\(^{33}\), with the caption ‘H.M.A.S. Sydney leading Convoy “U.S.12a” – Queen Mary, Queen Elizabeth — past Wilson’s Promontory 4th September 1941’. On 3 September 1941 SYDNEY did start to escort that convoy, which included QUEEN MARY and QUEEN ELIZABETH, leaving Sydney Harbour on that day for that purpose.\(^{34}\) The photograph was also reproduced in *As Luck Would Have It*, by the previous commanding officer of SYDNEY, VADM Sir John Collins, with the caption ‘Sydney escorting troop convoy’.\(^{35}\)

A witness before the Inquiry, Mr F Sheldon-Collins, expressed the opinion that SYDNEY did not carry the small size 20 Carley floats. His evidence was that SYDNEY carried ‘five large ones — two on the quarterdeck, two on the 4-inch gundeck and one just behind the bridge’.\(^{36}\) Accordingly, Mr Sheldon-Collins expressed the view that the pattern 20–type float in the Australian War Memorial was not from SYDNEY because, in his recollection, SYDNEY did not carry any such floats. He also maintained that the photograph shown here as Figure 13.3 is not a photograph of the stern of SYDNEY\(^{37}\) because it shows three bollards instead of two.\(^{38}\)

---

31 NAA.018.0230
32 AWM.001.0268
33 PTE.008.0008
34 War diary HMAS SYDNEY, September 1941: AWM.001.0206.
35 PUB.026.0001 at 0085
36 TRAN.014.0001_R at 0033_R
37 TRAN.014.0001_R at 0033_R, TRAN.014.0001_R at 0036_R
38 TRAN.014.0001_R at 0036_R

The Loss of HMAS SYDNEY II 305
Figure 13.2 Carley floats on SYDNEY’s port and starboard as she passed Gibraltar in November 1935.  

Figure 13.3 SYDNEY’s stern as she escorts a troop convoy. 

39 AWM.009.0026; AWM.009.0027  
40 EXH 042.0001
Figure 13.4 is an enlargement of part of the photograph shown here as Figure 13.3. Figure 13.5 is a further close-up. What Mr Sheldon-Collins took to be ‘three bollards’ are not bollards at all: they are a depth charge in its launch chute and two spare depth charges, one on each side of the chute.

Mr Sheldon-Collins left SYDNEY in June 1941, having served under CAPT Burnett for not more than 15 days. Whatever his recollection of Carley floats whilst he was on board might be, there is no doubt that by September 1941 SYDNEY carried both pattern 18 and pattern 20 Carley floats on her stern. The photographs show that. There is also no doubt that the stern of the ship shown in the photograph is the stern of SYDNEY. Further, it is not credible that SYDNEY’s former commanding officer, by then VADM Collins, would reproduce in his book a picture of the stern of a ship and describe the ship as SYDNEY if it was not.

Additionally, there is no doubt SYDNEY was carrying both pattern 18 and pattern 20 Carley floats at the time of her sinking on 19 November 1941. I am also satisfied that she carried more than one of each type of Carley float. She carried two pattern 20 floats on each of the port and starboard sides outboard of the 36-foot pinnace. Paymaster LEUT WH Ross, the author of Lucky Ross, served in SYDNEY from September 1935 until October 1941, and his son provided to the Inquiry a photograph showing such floats on the port side (see Figure 13.6).
Figure 13.5  SYDNEY’s stern showing depth charges

Figure 13.6  A pattern 20 Carley float on Sydney

---

44 EXH.042.0001
45 PTE.005.0005
13.9 It is thus possible that the HEROS Carley float and the Christmas Island one, recovered in November 1941 and February 1942 respectively, came from SYDNEY.

Later events

13.10 The Carley float HEROS recovered was apparently stored at Fremantle. In June 1942 CDRE Collins, then Senior Naval Officer Western Australia, wrote to the Secretary of the Naval Board in Melbourne:

CARLEY FLOAT – H.M.A.S. “SYDNEY”.

Submitted for the consideration of the Naval Board that the Carley Float from H.M.A.S. “SYDNEY” be forwarded to the Australian War Memorial.

2. This Float was recovered by H.M.A.S. “HEROS” and as it is one of the few remaining relics of H.M.A.S. “SYDNEY”, it is thought it is perhaps worthy of particular care and attention. The float is perforated, having received machine gun and shell fire, and is held in store in Fremantle.46

It is not known whether CDRE Collins had inspected the float. ‘Damage by gunfire’, referred to in the earlier signals, had become ‘the float is perforated, having received machine gun and shell fire’.

13.11 The Secretary of the Naval Board wrote to the Director of the Australian War Memorial on 4 July 1942:

I desire to inform you that a relic of H.M.A.S. “SYDNEY,” as described hereunder, is at present held in store at Fremantle:

Carley Float, approx. measurements 10 ft x 8 ft. The front is perforated, having received machine-gun and shell fire.

2. The Float, which was recovered from the sea by H.M.A.S. “HEROS,” is one of the few remaining relics of H.M.A.S. “SYDNEY” and is available for retention by the Australian War Memorial Authorities if desired. Will you please advise your wishes in this regard and if it is desired to acquire this relic it is requested that advice may be forwarded to Navy Office indicating the address to which it should be forwarded.47

The Australian War Memorial accepted the float and catalogued it thus: ‘AWM 30128 – Carley life Float which was recovered from the sea by

46 SPC.010.0001
47 NAA.073.0225
HMAS Heros. One of the remaining relics of HMAS Sydney. “Condition: damaged by shell fire”.48

13.12 After the War Memorial received the Carley float it displayed it for about 20 years in the Heavy Technology gallery, on the lower ground floor of the building and within easy reach of the public. According to an investigative report entitled The Scientific Investigation of a Carley Float at the Australian War Memorial, prepared by War Memorial experts Mr J Ashton, Objects Conservator, Ms Cathy Challenor, Textile Conservator, and Mr RCH Courtney, Curator of Technology (Weapons), and dated November 1993, ‘During this time it deteriorated owing to lack of protection, and small strips of canvas were also “souvenired”. In the 1960s it was relocated to the Naval gallery and enclosed in a glass-front showcase’.49

As further noted, the float is a type number 20 and ‘... shows considerable evidence of damage suffered before its arrival at the Memorial. This includes numerous punctures of the buoyancy tanks and slats broken or missing from the platform’.50

13.13 In the years following 1941 controversies arose in connection with the loss of SYDNEY. Three of them were noted in the report prepared by the War Memorial experts:

(a) Why the Sydney was sunk by an inferior adversary

The sinking of the cruiser, Sydney, by a raider disguised as a merchantman, was unexpected and led to questions of blame, focusing on the tactical procedures adopted by Sydney during the encounter.

(b) Whether Kormoran’s ship’s company took action against Sydney survivors in the water

A possible explanation of the lack of any survivors from Sydney was that Kormoran’s ship’s company had machine-gunned survivors in the water. This was denied by the Germans when interrogated in 1941/42, but their evidence was of necessity uncorroborated.

(c) Whether a Japanese submarine was involved in the sinking

A theory which has gained wide publicity alleges that a Japanese submarine was involved in the action, although the date of the sinking was some weeks earlier than the attack on Pearl Harbor.51

48 COI:002.0016 at 0028
49 COI:002.0016 at 0029
50 COI:002.0016 at 0029
51 COI:002.0016 at 0028
The first question was raised by Dr Barbara Poniewierski in her book *HMAS Sydney—fact, fantasy and fraud* (published under the name Barbara Winter)\(^{52}\) and the other two were raised by Mr Michael Montgomery in his book *Who Sank the Sydney?*\(^{53}\)

13.14 The Australian War Memorial had decided to conduct the scientific examination of the float in the hope that it:

might provide evidence that would bear on three other important questions:

(i) Does the Memorial's float, in fact, come from *Sydney*?  
(ii) Does the condition of the float support the theory that the *Kormoran* crew killed survivors in the water? In particular, were the holes in the float evidence that it had been hit by small arms fire?  
(iii) Does the condition of the float support the theory that a Japanese submarine was involved? Does the float contain Japanese ordnance or provide evidence of damage inflicted by Japanese weapons?\(^{54}\)

13.15 The following is the summary of its findings:

Investigations were carried out by Derek Hollamby, of USEC Nondestructive Testing, and Chris Ingham, of Selby Scientific and Medical. Curatorial analysis was provided by Robert Courtney and conservation analysis by John Ashton and Cathy Challenor, all three of whom are Memorial staff members.

The first phase of work involved X-ray photography of the float from various angles. These images were examined to identify evidence of extraneous material in the float. Although X-ray photos were useful for assisting the locating of material they did not provide a clear image of the individual items. With the aid of an endoscope, combined with long-nosed forceps and probes, twenty-six small metallic pieces were removed. All but eight of the items are pieces of shrapnel. The other pieces are non-ferrous, one possibly copper, two aluminium, four lead (solder) and one unidentified at this stage. The scientific analysis of all the pieces is referred to in the conservation report by Mr John Ashton.

There were over 100 holes and marks in or on the main body. The majority of these are very small, having a diameter of less than 5mm, but several are in excess of 10mm, with the largest being 85mm x 118mm.

It was noted that there were many entry and exit holes in line and the paths of the projectiles were tracked with rods. From this analysis it was apparent that the float was hit mainly from one side, with the
projectiles travelling downwards at an angle of about 15 degrees from the horizontal axis of the float. The float is not a dense object, being mainly canvas, cork and 22 gauge steel. As a consequence, only particles travelling at a reasonably slow speed would remain in the float structure. Anything travelling at a speed over about 20 metres per second (75 km/h) would be likely to go straight through (for comparison, a standard military rifle bullet would still be travelling at approximately 360 metres per second after 1000 metres). The relatively small number of particles trapped in the float is consistent with the nature of the relic.

Expert ballistic opinions on the holes were provided by Superintendent Herb Prior and A/Sergeant Paul McFawn from the Australian Capital Territory Police Forensic Unit. After a thorough examination, while the specialist equipment was on site, they were of the opinion that none of the holes was made by small arms fire. Only one possibly resembled a bullet hole but its size was of 0.5 inch diameter. However, the German raider did not have a weapon of this calibre.

From the available evidence, it has not been definitely established where the float would have been located on Sydney. Although the float has a large number ‘5’ painted longitudinally on one side, available photographic evidence of floats on Sydney does not show these numbers. Close-up photographs taken before 1940 of the larger floats also do not show any numbers (Plate 2).

8. Conclusion

The investigation of the Carley float has revealed a considerable amount of information about the float, but has unfortunately cast little light on the questions alluded to in section 6.

The evidence provided by the float is entirely consistent with its having come from HMAS Sydney. Nevertheless, that still has not been proven.

The extensive damage to the float appears to have been caused by particles of shrapnel from at least one high-explosive shell detonating on or near the main structure of the ship and ricocheting into the float. There is no evidence of damage by small arms fire. Nor does the exterior structure of the float have any heat or burn marks to indicate that it was exposed to the fires reported to have broken out on Sydney.

The evidence of the float therefore provides only the evidence of silence on the questions noted under (ii) and (iii) in section 6. Even that evidence of silence is weakened by the possibility that the float may have been blown off Sydney early in the engagement. The investigation has therefore provided few answers, but it has at least made clear what
evidence can be provided by what is probably the only surviving Australian relic of the Sydney-Kormoran action.\textsuperscript{55}

13.16 The conservative summary quoted does not refer to some crucial matters contained in the body of the report. First, the steel used in the construction of the subject Carley float is galvanised and branded as follows:

\begin{center}
LYSAGHT  
ZINCANNEAL  
AUSTRALIA  
PANEL QUALITY\textsuperscript{56}
\end{center}

That mark is one of the marks used by John Lysaght (Australia) Pty Ltd. There were three manufacturers of Carley floats in Australia\textsuperscript{57}, although they were no longer in business in 1993. Bearing in mind the Lysaght trademark stamp on the metal in the Carley float, the high probability is that the float was manufactured in Australia. If one accepts that this object along with others recovered came from either SYDNEY or KORMORAN—as the recovery pattern of relics shown in Figure 13.1 makes certain—that necessarily means this Carley float came from SYDNEY.

Second, the projectiles removed from the Carley float were metallurgically analysed, as were three examples of contemporary German munitions (20 millimetres and 3.7 centimetres). Those investigations produced the following results:

although there were similarities in the Fe (iron) content between the samples removed from the float and the unexploded munitions, there were major differences in the other alloying elements.\textsuperscript{58}

\ldots

Our investigation indicates that the composition and morphology of the projectiles which struck the Carley float is consistent with pieces of exploded munitions similar to other pieces of munitions in the AWM collection. The projectiles are assumed to be from ‘incoming’ munitions from the Kormoran as it is highly improbable that the Sydney’s ammunition fired at Kormoran would have exploded so close to the Sydney.

According to Hogg and Weeks, by the beginning of the 20th Century, the ‘jacketed’ bullet was the standard military ammunition for rifles and machine-guns; lead bullets only survived in revolver cartridges. Germany introduced the pointed bullet in 1905. The ‘boat-tailed’ or

\textsuperscript{55} COI.002.0016 at 0029 to 0031
\textsuperscript{56} COI.002.0016 at 0033
\textsuperscript{57} COI.002.0016 at 0024
\textsuperscript{58} COI.002.0016 at 0045
streamlined bullet required for machine-gun accuracy and maximum range was developed in the 1920s. In the 1930s the Germans produced the 7.92 mm calibre ammunition system, for rifles and machine-guns. The standard ammunition for use with German machine-guns right through the Second World War was the copper alloy jacketed, lead-filled, 178 gr weight bullet with a muzzle velocity of 676 m/s. If, as proposed, the float was shot at by machine-guns, any projectiles from the German weapons then in use would be expected to have penetrated the relatively soft body of the float with clean entry and exit holes. No such holes were found and nothing discovered and removed from the Carley float has any morphological or metallurgical resemblance to the type of machine-gun bullets that could have been used during the naval action in November 1941.59

13.17 Mr Ashton explained these passages in evidence to the Inquiry. First, they meant that, although the War Memorial was able to test samples of both the 3.7-centimetre and the 20-millimetre munitions, certain similarities and differences between the test results and the results for samples extracted from the Carley float meant that one could neither establish nor eliminate the possibility that the extracted samples came from such munitions.60 Second, it could be established with certainty that the fragments did not come from 7.92-millimetre German machine guns.61

13.18 The War Memorial experts’ examination of the Carley float established the following:

- The Carley float was a No. 20 pattern.
- The float had been in a horizontal position when it suffered the penetration damage. This flowed from the fact that the entry and exit penetrations that could be related by the use of long brass rods showed entry and exit basically on a horizontal or close-to-horizontal plane.62 There was similar penetration damage to the wooden slatted floor, suggesting that it was on a hard surface when hit by the projectiles.63
- The Carley float was not damaged by bullets. Bullets would have passed right through the float, and there was no evidence of this.64
• Some of the extracted fragments were a mixture of hardened steel made using ‘hardening techniques’.65

• The extracted fragments were a mixture of hardened steel fragments from munitions and metal pieces from the object struck, resulting from the spallation effects of such impact.66

13.19 It is beyond argument that the Carley float came from SYDNEY. SYDNEY was the only ship in the area carrying a Carley float that had been made in Australia and was the only ship in the area engaged in a battle such that the Carley float was likely to have been damaged by shrapnel. The location of its recovery makes it clear that it, together with other objects, came from either SYDNEY or KORMORAN and, since it had been made in Australia, it did not come from KORMORAN.

13.20 It is equally clear that the damage suffered was not from machine-gun bullets but was instead from shrapnel. Machine-gun bullets would have entered and exited the float. There was no evidence of this. It could not be determined with certainty whether the extracted metal came from KORMORAN’s 3.7-centimetre or 20-millimetre munitions. The damage to the float was caused by shrapnel from KORMORAN’s shells, of whatever calibre, after they shattered on impact or exploded or by spallation resulting from the impact of such shells. As appears from the evidence of the Defence Science and Technology Organisation, large amounts of shrapnel were created by KORMORAN’s 15-centimetre shells exploding on SYDNEY. There is now evidence that SYDNEY was hit by at least eighty-seven 15-centimetre shells, which would have produced a hailstorm of shrapnel.

13.21 The statements made in the signals quoted—that the HEROS Carley float was ‘badly damaged by gunfire’—were correct: it was badly damaged by shrapnel from KORMORAN’s shells that shattered on impact or explosion. The statement made by CDRE Collins in his letter of June 1942, that the Carley float ‘received machine-gun fire’, is wrong: there is no evidence that it suffered machine-gun fire, and all the evidence points to the contrary.

65 TRAN.031.0001_R at 0031_R
66 TRAN.031.0001_R at 0031_R
Conclusion

13.22 The HEROS Carley float came from SYDNEY. It was not subjected to machine-gun fire from KORMORAN or from any other source. The condition of the float lends no support whatsoever to the speculation that SYDNEY survivors were machine-gunned whilst in the water. It does, however, support the accounts of the German survivors—that SYDNEY suffered severe attack from KORMORAN’s 15-centimetre shells and 3.7-centimetre and 20-millimetre armaments. It is now known that SYDNEY suffered at least 87 hits from 15-centimetre shells and myriad hits from the other armaments. It was shrapnel from those shells and spallation from the impacts that damaged the HEROS Carley float.