

19 Why did HMAS SYDNEY approach close and parallel to HSK KORMORAN?

- 19.1 It is established beyond doubt that HMAS SYDNEY reached a position on a course parallel to that of HSK KORMORAN, abeam of her and with about 1,000 to 1,500 metres' separation. This was her position when she signalled 'IK' immediately before KORMORAN de-camouflaged and opened fire. In that position SYDNEY had lost all tactical advantage of speed and armaments and was in a position of grave danger should STRAAT MALAKKA be a disguised raider. The tactical advantage of surprise was with KORMORAN.

Why did CAPT Burnett place SYDNEY in that position?

- 19.2 It can never be known what matters were, in fact, operating in CAPT Burnett's mind when he decided to take SYDNEY to the position described. Nor can it be known what advice, if any, he sought from or was given by other officers on the bridge.

What is known, however, is that, in trying to identify the sighted ship, CAPT Burnett was performing his duty as a commanding officer.

- 19.3 Tactical Note No. 9 required that CAPT Burnett make an early assessment of whether he thought the sighted ship appeared 'innocent' or 'suspicious'. If the decision was she appeared innocent, the Case A procedure was to be followed, which meant SYDNEY was not required to go to action stations and was to approach within signalling distance and thereafter engage in the regular ships recognition procedure prescribed by Naval Control Service Instruction 181. If the decision was that the ship appeared suspicious, an entirely different procedure was required: SYDNEY was to go to action stations, stand off 7 to 8 miles, and require the ship to stop under threat of fire.
- 19.4 It is clear that SYDNEY was not engaged in the procedure prescribed for Case B in Tactical Note No. 9 but was instead engaged in the procedure prescribed for Case A. That means that at the time of initially sighting KORMORAN and at all times thereafter until shortly before the engagement began CAPT Burnett thought the stranger appeared 'innocent'. There can be no other explanation for the manner of SYDNEY's approach.
- 19.5 With the benefit of hindsight, it is known that CAPT Burnett's initial assessment that the sighted vessel 'appears innocent' was erroneous.

But when assessing CAPT Burnett's decision one must disregard hindsight. One must consider his decision in the light of the information available to him at the time he made the decision, as he was required to do when the ship was first sighted.

19.6 When CAPT Burnett made his initial assessment, distance and conditions prevented him from determining the vessel's features. He could not communicate with her and did not attempt to do so for some time. The sole piece of information he had was that the ship was not on his plot and thus was not expected in the area. The very purpose of maintaining a plot, based on the VAI (the list of vessels expected in the area), was to enable warships to be aware of ships they were likely to encounter; such ships were known to be friendly merchant vessels. By deduction, if a vessel was not on the plot it should have been assumed not to be friendly until the contrary could be established. This meant that the sighted ship should have been treated as 'suspicious' until the contrary was established. The risk of doing otherwise was to place the warship and her crew in jeopardy. The reason Tactical Note No. 9 had alternative procedures for situations where the vessel appeared 'innocent' or 'suspicious' was to avoid that risk.

19.7 At the time of making the turn towards KORMORAN and when first assessing the ship as 'innocent', CAPT Burnett knew there was the possibility of a raider being off the Western Australian coast. Commanding officers had been alerted to that possibility by the Combined Operational Intelligence Centre's Weekly Summary of 22 September 1941.¹ On 3 October 1941 CAPT Burnett had recovered what he considered might—'just a possibility'—have been a target dropped by a raider.² On 4 October SYDNEY had investigated whether a vessel identified as SS SALLAND was, in fact, a suspicious vessel but had concluded it was not after a 'close inspection' and an 'exchange of signal letters followed by correct procedure exchanging secret callsign'.³ On 5 October CAPT Burnett informed his crew, 'There is an enemy raider out there'.⁴ On 20 October the COIC Weekly Summary advised commanding officers that, in the light of the non-arrival of SS STAMATIOS G EMBIRICOS, the view was strengthened that 'a raider is operating in the Indian Ocean' and 'such a raider could now have reached the western section of the Australia Station'.⁵ The same Weekly Summary gave a description of Raider G, which was 'possibly

¹ NAA.011.0162 at 0167 to 0168

² COI.003.0008

³ NAA.010.0225 at 0227

⁴ WIT.001.0001_R at 0011_R

⁵ NAA.011.0104 at 0111

operating in the Pacific': the description of Raider G was a description of KORMORAN.⁶

- 19.8 Those two factors—the absence of any ship on his plot and knowledge of the possibility of a raider in the area—render almost inexplicable CAPT Burnett's initial decision to assess the sighted ship as innocent. The decision did not depend on any guise or deceit on the part of KORMORAN: the ships were 20 miles apart. It was grounded entirely on the two factors just mentioned. It was, in my view, a basic error of judgment. Yet CAPT Burnett was a skilful and conservative commanding officer, and he was supported by a group of experienced officers. On three previous occasions he had gone to action stations in daylight on sighting an unidentified merchant vessel or unknown object. Figure 19.1 shows where that occurred.

The occasion involving GS LIVANOS, on 2 June 1941, occurred only about 70 miles from the encounter with KORMORAN and comparatively close to the Australian coast and shipping lanes.

- 19.9 The only rational explanation for that initial erroneous decision is that CAPT Burnett decided not to trust his plot, yet the information on his plot and his knowledge of the possible presence of a raider amounted to the only information he had. Unless a commanding officer assumed the plot was correct, he risked putting his ship and crew at risk.
- 19.10 Other matters of a less direct nature might have influenced CAPT Burnett to diminish the weight to be given to the two factors I have just mentioned.

First, he could have been influenced by knowledge that the VAI, and thus his plot, were not always accurate. In Chapter 5 I discussed CAPT Burnett's familiarity with the Mercantile Movements Section and his apparent satisfaction with the VAI's accuracy. In October 1941, however, just six weeks before meeting KORMORAN, CAPT Burnett had an experience indicating significant error in such information.

⁶ NAA.011.0104 at 0112

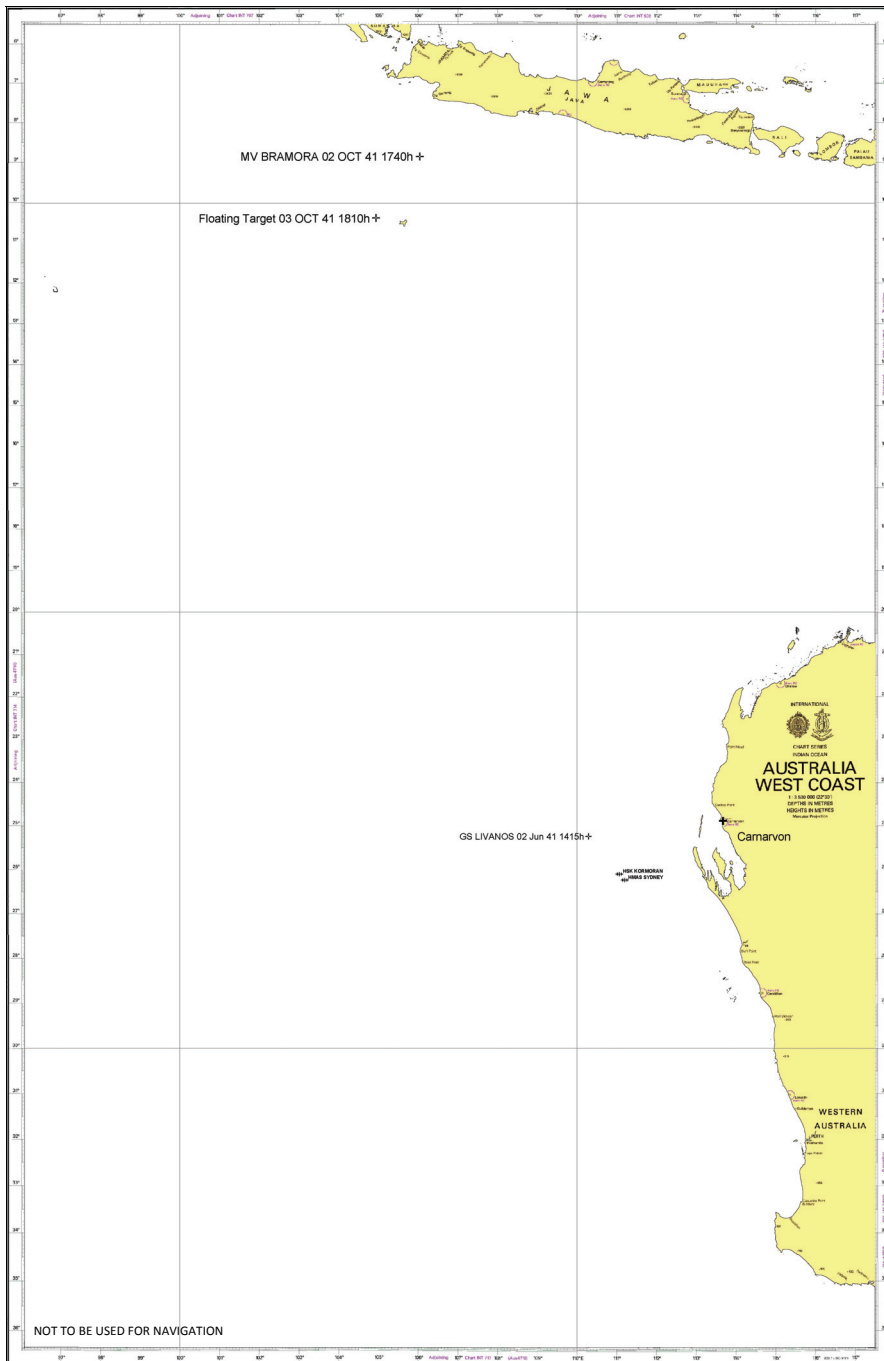


Figure 19.1 The three locations where SYDNEY went to action stations in daylight⁷

⁷ RAN.002.0174

After investigating the YANDRA–SALLAND⁸ incident, which occurred on 7 October 1941, CAPT Burnett recorded that HMAS YANDRA had signalled to an unknown ship ‘What ship?’ and received the reply ‘CALCUTTA’. The ship was allowed to pass without further identification. CAPT Burnett wrote:

No other action to identify the ship was taken, as she was on a list provided to the ship of vessels expected and leaving. In fact the list showed she was not due for another two or three days, but her early arrival did not cause any suspicion, as other similar cases had occurred.⁹

And later:

The P.W.S.S. [Port War Signal Station] passed the sighting signal to D.N.O. [the District Naval Officer], and the Duty Plotting Officer received it at 2300 that night. He realised that “SALLAND” was 2½ days early in arriving, and asked for a check on the signal.¹⁰

The lists of vessels arriving and departing and calculations of ships’ positions based on estimates of speed, weather, load and other factors constituted the material on which the Mercantile Movements Section based its plots and signalled warships. CAPT Burnett thus recognised that the estimate of a ship’s position—based, as it was, on the information signalled from the Mercantile Movements Section—could have been wrong to the extent of two to three days.

If the YANDRA incident had reminded CAPT Burnett of the possibility of the presence of a raider, it would equally have reminded him of the possible inaccuracy of the shipping movement information on which his plot was based. The vessel sighted might well have been a vessel that was two or three days ahead of or behind its anticipated and plotted position or any variable of that inaccuracy.¹¹

- 19.11 Second, CAPT Burnett might have given weight to his knowledge that, although there was the possibility of a raider being present, none had been encountered by a warship off the Australian coast since the outbreak of war. He knew that, although the number of raiders was uncertain, the best available information was that worldwide there were not more than seven such vessels. The prospect of encountering one was remote.

⁸ See Chapter 6.

⁹ NAA.010.0225

¹⁰ NAA.010.0225 at 0226

¹¹ As appears from Chapter 5, and Figure 5.4, it was only if either LARGS BAY or BRAMORA was approximately two days ahead of her plotted position that there was a possibility of the sighted ship being a ship referred to on SYDNEY’s plot, albeit more than 200 nautical miles distant.

- 19.12 Third, having arrived off the Australian coast and being close to a shipping lane and focal point, experience told him, as he had written a year earlier, that that was not an area where a raider was likely to be encountered. It was not the practice around the Australian coast to go to action stations when an unidentified vessel was sighted—absent some suspicious indicator. Failure to appear on the plot should have been such an indicator, but it must have been downgraded. CAPT Burnett had gone to action stations in a similar position five months before, only to identify a friendly ship.
- 19.13 Whether these or other factors I have not canvassed¹² influenced CAPT Burnett in making his initial decision to approach KORMORAN on the basis that she appeared ‘innocent’ will never be known. But in not giving predominance to the hard knowledge that his plot told him no friendly merchant ship was expected in the area—particularly when coupled with his knowledge of the possible presence of a raider—CAPT Burnett fell into serious error. He apparently disregarded ‘known movements of shipping’ when making his decision.

Closing on KORMORAN

- 19.14 Having assessed the ship as appearing innocent, CAPT Burnett was obliged to keep that assessment under review until the ship was identified. It is appropriate to examine what occurred as SYDNEY closed on KORMORAN in order to determine whether any event ought to have caused CAPT Burnett to change his initial assessment that the ship appeared innocent. Four matters require consideration:
- the turn into the sun
 - inadequate signal response
 - an extended chase—and the decision not to fly off the Walrus aircraft
 - the QQQQ signals.

The turn into the sun

- 19.15 The first thing SYDNEY would have noticed was the ship turning from her course of 024° or 025° and adopting a course of 250° to 260°, into the sun. KORMORAN did so once she could distinguish that the other vessel was an enemy warship. At the same time as making the turn, KORMORAN increased speed. SYDNEY, watching, must have seen

¹² For instance, anti-scuttling measures and Confidential Admiralty Fleet Order 450, but these would be material only if there were suspicions about the ship sighted.

that turn. The turn was made before SYDNEY started signalling 'NNJ'¹³, meaning 'Make your signal letters'. It was thus not part of the identification procedure contemplated by Naval Control Service Instruction 181.

CAPT Burnett was, however, also aware that not all merchant vessels properly complied with the ships recognition procedure. In September and October 1941 he had written about merchant ships' defective compliance with that procedure.¹⁴ Inadequate or tardy performance of the procedure was thus not necessarily an indication that a vessel was unfriendly.

19.16 It is possible that those in SYDNEY observing the turn and the increased speed might have regarded KORMORAN's conduct as suspicious: a friendly merchant ship had no cause to run from a friendly warship. It is equally possible, though, that those in SYDNEY might have regarded the turn and increased speed as an imperfect performance of the identification procedure described by Naval Control Service Instruction 181. A friendly merchant vessel was expected to turn away and increase her speed immediately *after* responding to the signal 'NNJ'. As SYDNEY continued the approach required by Case A under Tactical Note No. 9, CAPT Burnett must not have regarded the change of course and the increase in speed as rendering the ship 'suspicious': had he so determined he would have proceeded under Case B.

19.17 A second aspect of the turn away was that it was into the sun, something not required by the recognition procedure. The effect of the turn into the sun was to make identification of KORMORAN more difficult. She now presented a narrow stern view to SYDNEY, who was approaching her fine on the starboard quarter. SYDNEY was looking directly into the sun, making it more difficult to read flag signals. In the prevailing wind and sea conditions KORMORAN's flags, when eventually hoisted, and even when later hoisted clear, were only partially visible to a ship approaching on the course SYDNEY had adopted. It is hard to think that those in SYDNEY would not have questioned both the premature turn and the fact that the direction of the turn made their task of identifying the ship and her signals more difficult. Perhaps those on SYDNEY initially perceived the turn as that of a British master, unsure of a sighted warship, turning on an open course that happened to be into the sun. It should, however, equally have been recognised as possibly a skilful move by an experienced raider captain.

¹³ COI.005.0006 at 0008

¹⁴ NAA.010.0061

The difficulty of reading flag signals in the then prevailing weather conditions was discussed in evidence by CAPT WJ Bairstow CSC RAN and LEUT SJ Rivett RAN, both experienced seamen officers.

- 19.18 Modern science permits a determination of the wind and weather conditions at the site of the engagement on 19 November 1941. (This science is described in Exhibits 110 to 113.¹⁵) The information so derived accords generally with the scant information available from the KORMORAN survivors.¹⁶
- 19.19 Wind conditions on the afternoon of 19 November 1941 were determined as south to south-easterly and between 17 and 22 knots.¹⁷ That accords generally with contemporary evidence of the wind being 'south-south-east 3 to 4'¹⁸, being 3 to 4 on the Beaufort Scale. The sea state was recorded as 'sea state 3, medium swell from the south-west'.¹⁹ Visibility in those conditions enabled a mast to be seen against the horizon at 10 to 15 nautical miles²⁰, although from an elevated lookout position a sighting could be made at 18 to 19 miles. LEUT Rivett regarded as 'completely plausible' SBLT Bunjes' statement that when SYDNEY was sighted she was about 20 to 25 miles distant.²¹ Sunset was at 1905H, with a civil twilight of about 20 to 25 minutes²² and total darkness by 2000H. In those conditions—with KORMORAN on a course of 250° to 260° and SYDNEY approaching on a course of green 170° (10° to starboard of the stern of KORMORAN)—SYDNEY would be able to see approximately 50 to 60 per cent of any flags flown clear on KORMORAN. Since KORMORAN was heading into the sun, however, the flags would be 'backlit by the sun, so they would be casting a shadow on themselves, making them also more difficult to read'.²³ Heat haze from the funnel made the reading of the flags even more difficult. Had SYDNEY been approaching on a course of green 135° (that is, 135° from KORMORAN's ship's head), only 10 per cent of the flags would have been visible; they would have been almost 'end on'.²⁴ The sun was about 15° to 20° above the horizon between 1630 and 1700H.²⁵ Looking into the sun increased the 'order of difficulty' in reading the flags.²⁶

¹⁵ FSF.011.0003_R; WAM.002.0049; WAM.002.0066_R; WAM.002.0279

¹⁶ CORR.007.0034 at 0135

¹⁷ TRAN.022.0001_R at 0010_R Line 33

¹⁸ TRAN.022.0001_R at 0012_R Line 3

¹⁹ TRAN.022.0001_R at 0013_R Line 27

²⁰ TRAN.022.0001_R at 0014_R Line 6

²¹ TRAN.022.0001_R at 0014_R Line 40

²² TRAN.022.0001_R at 0015_R Line 4

²³ TRAN.022.0001_R at 0018_R Line 22; TRAN.022.0001_R at 0031_R Line 21

²⁴ TRAN.022.0001_R at 0019_R Line 6

²⁵ TRAN.022.0001_R at 0019_R Line 21

²⁶ TRAN.022.0001_R at 0031_R Line 27

19.20 These conditions, particularly looking into the sun, would have affected the capacity of officers on SYDNEY's bridge to view the silhouette of KORMORAN. LEUT Rivett's evidence was as follows:

Q: Finally, in relation to both of the positions you have postulated for the *Sydney* on that chart, what would be the effect on viewing the silhouette of the *Kormoran* from the *Sydney*?

A: The same issue with the shadowing, casting shadows upon itself, would apply. With the sun in that position, it would be harder to see the length of the ship accurately, for example, because you couldn't make out as many finer features on the ship to get a gauge for, "Oh, this ship is this long; there is its funnel". You would see the front, you would see the funnel, you would see the end – the stern – but all the finer details in between would become a lot more difficult to see until you were at closer range, by which I mean probably 2 nautical miles.²⁷

CAPT Bairstow's evidence was to similar effect:

Q: Finally, then, I want to turn briefly to the issue of weather effects on discerning silhouettes. You have provided some evidence on the ability to read flags and just briefly on flashing light from up-sun. Given a sea state of 3 to 4 and given *Kormoran's* position relative to the sun, and, again, assuming *Sydney's* position is somewhere between the starboard quarter of *Kormoran* and right astern of *Kormoran*, how easy or difficult would it be to discern a clear silhouette, noting the position of the sun, amongst other things?

A: It would be difficult to discern the silhouette, but also, from the perspective of the aspect of the vessel, when you look at the beam-on picture of the vessel, it tends to stand out. Once you start getting that angle, when the angle gets a lot more acute, it is hard to determine the actual positioning of the masts, the funnel, et cetera, of that ship. So if you take into account heading into the sun, the haze, looking up-sun, so it is hard on the eyes as well, there would be some elements of difficulty in determining the visual aspect – sorry, not the aspect, but the silhouette of that vessel.²⁸

19.21 The conditions also affected the distance at which the flags could be read. CAPT Bairstow said:

A: In these weather conditions, if you look at where the sun is, if you take it to a normal, reasonably clear day, as a rule of thumb, 5 nautical miles is good. You would want to be inside 5 nautical miles to see flags quite clearly. Outside of 5 nautical miles it starts

²⁷ TRAN.022.0001_R at 0020_R Line 20

²⁸ TRAN.022.0001_R at 0037_R Line 20

getting harder. Taking into account, if you look there, the relative position of the flags and where the sun is and the haze of the funnel, where the position of the flags is, range would definitely be, I would consider, a factor of how you would read the flags. Between 2.5 and 5 nautical miles – 5 nautical miles is getting out towards it, which is 10,000 yards, give or take.²⁹

LEUT Rivett's evidence was:

Additionally I assess that the maximum range at which an experienced officer or signalman could read flags in these conditions would be 10,000 yards (5nM) for a flag hoist that you were expecting to see, however it is more likely that with an unfamiliar flag hoist this would reduce significantly.³⁰

Other evidence before the Commission confirms the short distance at which flags could generally be read. CDRE Dollard gave the range at '3 or 4 miles'.³¹ CMDR Dechaineux was of the view that 'it is sometimes very difficult to read a flag hoist at as little as a mile'.³²

- 19.22 This evidence establishes that, since SYDNEY did in fact approach from astern fine on the starboard quarter, in the prevailing sea, wind and sun conditions, although officers on SYDNEY's bridge would have been able to make out some aspects of the ship's silhouette, KORMORAN's finer features would have been difficult to see until closed to a distance of about 2 miles. Reading the flags would have been difficult at 10,000 yards for an expected flag and at 'significantly less' distance for an unexpected flag, perhaps as close as 2.5 miles or even 1 mile.

Thus for SYDNEY to identify KORMORAN by reading the flag signal 'PKQI' she had to bring herself well within KORMORAN's gun range. To distinguish important superstructure features for visual recognition, she had to come even closer, to within 2 miles, and reposition herself relative to KORMORAN so as to observe a more beam-on profile of KORMORAN.

- 19.23 This consequence flowed from two factors. The first was CAPT Detmers' skilful positioning of his ship, heading into the sun on a course of 250° to 260° in the prevailing wind and sea conditions. The second was the angle of approach adopted by SYDNEY. Paragraph 8 of Tactical Note No. 9 required that:

Course and speed will be altered as necessary to intercept, until the general features of the stranger can be discerned. A good general rule

²⁹ TRAN.022.0001_R at 0032_R Line 5

³⁰ TRAN.022.0001_R at 0020_R to 0021_R Line 41

³¹ TRAN.014.0001_R at 0085_R Line 12

³² NAA.074.0065

for rapidly closing a ship who, when first sighted, is on a broad track ... is to steer for position 30-40 degrees ahead of her.³³

If, however, the plot having been consulted, no ship was expected in the immediate area and thus no vessel's silhouette and features could be used as a reference point against which the 'general features of the stranger' could be compared, there was no point in adopting a broad track to determine those general features. Had SYDNEY adopted that course, she would have observed from a broad position that the sighted ship was of about 9,000 tons with a Maierform bow, a cruiser stern, a single funnel amidships, about 150 metres long, with four samson posts and a three-deck superstructure with a signal deck above. These features would have suggested the possibility that the vessel was a disguised raider – and an equal possibility that it was not. But if it was not, it should have been shown on the plot.

CAPT Burnett did not adopt a broad approach to enable observation of the 'general features' of the ship. Instead, he took a narrow approach, ultimately producing an approach about 10° off the stern on the starboard side. His reason for adopting that fine interception course will never be known.

Inadequate signal response

19.24 When she was 7 miles from KORMORAN SYDNEY started flashing 'NNJ' – 'Make your signal letters'. KORMORAN delayed her reply by fumbling signals, finally hoisting the four-flag signal 'PKQI', which could not be read because of the position of the flags in relation to her funnel. This delay drew SYDNEY closer in her endeavour to identify KORMORAN. SYDNEY then signalled, 'Hoist your signal letters clear'. CPO Ahlbach did so by drawing the signal halyard to starboard. There is no evidence about precisely how far SYDNEY was astern of KORMORAN when that occurred, but she must have been rapidly closing. It can safely be assumed that she was within 10,000 yards – and probably well within that distance – when she was finally able to read the letters 'PKQI'. Only then was SYDNEY able to consult her books of reference to determine that 'PKQI' meant the vessel was signalling she was STRAAT MALAKKA. And only after that could SYDNEY establish the secret call sign for STRAAT MALAKKA ('IIKP'). When SYDNEY flashed the central secret call sign letters ('IK'), she was sailing abeam of KORMORAN on a starboard parallel course and about 1,200 metres away.

³³ NZA.001.0012 at 0012 to 0013

- 19.25 At the very latest, once SYDNEY had read the letters PKQI and learnt the vessel purported to be STRAAT MALAKKA—assuming the ship’s features were by then discernible—those on SYDNEY’s bridge must have realised the ship before them did not have STRAAT MALAKKA’s physical features in terms of size, bow and stern configuration and superstructure layout. It seems probable that, while consulting the books of reference to determine which vessel PKQI signified, what her physical features were, and what the ship STRAAT MALAKKA’s secret call sign was, SYDNEY signalled KORMORAN asking, ‘Where bound?’ and received the response ‘Batavia’. That was contemplated by Tactical Note No. 9 in the case of a foreign vessel approaching another vessel under the Case A (‘innocent’) procedure.
- 19.26 If SYDNEY’s officers had consulted Australian Confidential Book 0206, they would have seen that STRAAT MALAKKA was not listed. That should have immediately raised suspicion. It must have been necessary to consult Talbot-Booth to find her name and then consult elsewhere to find her secret call sign. The identification process—from the time KORMORAN’s flags could first be read (SYDNEY then being within 10,000 yards) to the point where reference books allowed SYDNEY to know that the vessel was signalling she was STRAAT MALAKKA, and her secret call sign was established to be IIKP, resulting in the signal IK—must have taken some time, perhaps more than 30 minutes.³⁴ That follows from the evidence that by the time SYDNEY made the signal IK she was abeam and parallel to KORMORAN; how long she had been sailing in that position is not known.
- 19.27 Once CAPT Burnett turned SYDNEY towards KORMORAN at a distance of 20 miles or more and decided to approach directly towards KORMORAN, which thereafter turned into the sun, it was inevitable in the prevailing wind and sea conditions that SYDNEY would be unable to adequately read KORMORAN’s signal flags without approaching to within KORMORAN’s gun range (should she be a raider). The time delay between reading PKQI and determining the name, characteristics and secret call sign of the ship thus identified meant that SYDNEY, still approaching fast but slowing, achieved a position abeam and parallel to KORMORAN before the identification process could proceed by signalling IK. By then it was too late.

³⁴ The speed SYDNEY was making in her approach to KORMORAN is not known, but she was slowing to adopt a parallel course and speed. If the differential in speed was 11 knots (assume SYDNEY at 25 knots and KORMORAN at 14 knots) SYDNEY would close 10,000 yards in about 27 minutes, but because she was slowing the time would have been longer.

An extended chase

19.28 I have considerable reservations about the precision with which times were given by German survivors. All that is known with certainty is that KORMORAN sent a Q signal at 1803H and repeated it at 1805H because receipt of distorted signals was recorded at those times. Other times are reconstructions. Nevertheless if one assumes that the German accounts are approximately correct, that KORMORAN turned into the sun at about 1700H, and that when the Q signals were sent SYDNEY had not yet achieved her position abeam of KORMORAN, that means SYDNEY chased KORMORAN into the sun for about an hour. At some time during that hour CAPT Burnett contemplated flying off the Walrus. His only possible reason for doing so related to KORMORAN—to identify her before darkness, to track her to stop her escape or to call the fall of shot—unless he contemplated flying it off to avoid damage to the aircraft from the firing of SYDNEY’s guns, or to avoid danger were she to be hit in any battle. Each of these possible reasons assumes, however, it was recognised that the sighted ship might not be friendly, a possibility highlighted by the fact that no ship was expected in the area.

Whatever the reasons for deciding to close down the Walrus might have been, the initial decision to prepare it for launch can only have been based on a suspicion about whether the vessel sighted was friendly. The suspicion was, in all probability, raised because no ship was shown on the plot. That objective fact was no doubt coupled with CAPT Burnett’s knowledge of the possibility of there being a raider off the Western Australian coast.

LEUT Ahl, himself an airman, later wrote, ‘For a while, the catapult had been pointing on the beam but had been swung back when it became obvious that the “KORMORAN” could not escape’.³⁵ This assumes, however, the contemplated use of the Walrus was based on the knowledge or suspicion that the ship was an enemy ship. If CAPT Burnett contemplated launching the Walrus because he thought KORMORAN might escape before inspection—as, indeed, she appeared during the chase to be trying to do—there must have been a suspicion on board SYDNEY that the ship was not a friendly ship.

19.29 I considered the possibility that CAPT Burnett might have started the Walrus for exercise purposes but rejected that possibility as being unrealistic in all the circumstances. There could have been sound reasons, not now determinable, why he chose to shut it down. But there is no reason I can conceive of for him to decide to prepare the Walrus

³⁵ PTE.004.0227 at 0231

for launch that does not involve doubt or suspicion about the friendliness of the sighted ship.

If there was any doubt or suspicion about whether the ship was friendly, CAPT Burnett's obligation was to go to action stations, stand off 7 to 8 miles, and implement the Case B procedure described in Tactical Note No. 9.

The QQQQ signals

19.30 It is established that KORMORAN sent two Q messages—about three or four minutes before the 'fight began', according to LS Linke³⁶; 10 minutes before opening fire, according to LS Pachmann³⁷; and about 25 minutes before the battle began, according to CAPT Detmers, who said in all his accounts³⁸ the signals were sent at 1700 (1800H).

Admiralty Merchant Shipping Instruction 309 provided that:

When a warship or merchant ship is suspected of hostile intent, a distress message in accordance with D.M.S., Confidential Appendix "B," Article 16, should be made, the word "Suspicious" being added as the "Nature of Attack." *Example:---*"QQQQ QQQQ QQQQ 5507N 1920W QUEEN MARY SUSPICIOUS".³⁹

The Q signal KORMORAN sent was not in that precise form, but it did signal four Qs and give a location and time and the name 'STRAAT MALAKKA'.⁴⁰ It could well have been understood as a proper Q signal.

19.31 The distress frequency of 500 kilocycles, or 600 metres, on which the signal was sent, was monitored by SYDNEY.⁴¹ The tug UCO heard a distorted signal at 1803H and Geraldton radio heard an incomplete signal at 1805H. This fixes with precision the times of the two Q signals. What is not known is the precise time the engagement started, so it is not known how long before the start of the engagement SYDNEY would have heard the signals. Nor is it known what effect, if any, receipt of the signals had on CAPT Burnett's view about the nearby vessel being 'innocent' or 'suspicious'.

³⁶ NAA.012.0085_LINKE

³⁷ NAA.012.0087_PACHMANN

³⁸ COI.005.0006 at 0010

³⁹ UKAA.008.0223. AMSI 309 was cancelled by AMSI 475 of 26 June 1941 (see UKAA.008.0321 at 0323). AMSI 468 (see UKAA.008.0322) of 26 June 1941 states that the form in which enemy reports and distress messages were to be sent by W/T is detailed in MERSIGS (Merchant Ships Signal Book, BR 637) Articles 105 and 106 (see UKAA.016.0012 to 0019). Despite intensive searching the Inquiry was unable to locate a 1941 edition of MERSIGS.

⁴⁰ NAA.012.0087_PACHMANN

⁴¹ TRAN.005.0001_R at 0019_R

The position 'STRAAT MALAKKA' gave in the Q signals was correct – 26°S 111°E. I do not know what effect receipt of such a Q signal from a vessel in view, giving its correct location on being approached by an Allied war ship, would have had on CAPT Burnett. There is no material that would allow one to infer that it either did or did not make him suspicious of the vessel in view. There is no basis for finding that it should have changed his perception of the innocence of the vessel before him. He might have regarded it as a signal from a merchant vessel that feared an approaching warship, as Admiralty Merchant Shipping Instruction 309 contemplated, whether such fear was justified or not. There is nothing to suggest that SYDNEY in any way changed the identification procedure being performed.

CAPT Detmers had been at pains to delay signalling his identity: he would have been unlikely to send Morse signals (which he would have assumed would be read by SYDNEY) announcing he was STRAAT MALAKKA before he had signalled 'PKQI', disclosing his assumed identity. According to CAPT Detmers' accounts, 15 minutes after the Q signals, 'Enemy opens out on starboard beam at range 900 meters'.⁴² For the reasons given, that statement is unlikely to be correct. However, if it is correct and SYDNEY did 'open out', that is no indication that the signals, if read by SYDNEY, resulted in any change of assessment that the vessel appeared 'innocent'; rather, it suggests the contrary. If SYDNEY did receive the Q message, including the name STRAAT MALAKKA, and was able to determine that the message came from the vessel in sight, she would not have 'opened out on the starboard beam' if she considered STRAAT MALAKKA suspicious because that would have exposed her to broadside attack. But if SYDNEY was by then on the starboard beam about 900 metres away that must have been about the time she signalled 'IK', so CAPT Burnett already understood that the vessel claimed to be STRAAT MALAKKA from having read the flag signals, or from having received the Q signals.

The 1809H signal to SYDNEY

19.32 It is known that at 1809H on 19 November 1941 – that is, six minutes after the first Q signal and four minutes after the second – the Naval Board sent to SYDNEY a signal⁴³ informing her that on 6 November 1941 a vessel acting suspiciously had been sighted about 900 miles north of Suva, Fiji. It is not known if the battle had begun at the time the signal was sent, if the signal was received by SYDNEY or, if it was indeed received, if it was decoded and brought to CAPT Burnett's attention before the battle began. If it was received and brought to his

⁴² COI.007.0036

⁴³ AWM.003.0215; NAA.109.0107 at 0108 to 0109

attention, it would have reminded CAPT Burnett of the desirability of unidentified vessels being treated as suspicious. In the light of the uncertainties to which I refer, however, fairness requires that the matter of the signal be disregarded as a factor in considering CAPT Burnett's actions. By 1809H SYDNEY was already close to KORMORAN.

Summary

19.33 The evidence establishes the following:

- There was no ship shown on SYDNEY's plot when she turned to investigate the sighted vessel. That should have raised suspicion.
- SYDNEY would have observed the other ship's turn into the sun and increase in speed disassociated with any 'NNJ' signal. This made SYDNEY's task of discerning the ship's features difficult. Alone, that might – perhaps – have been understandable, but when coupled with the ship's absence from the plot it should have raised suspicion.
- CAPT Burnett prepared the Walrus for launch. That is consistent only with a doubt about whether the sighted ship was friendly.
- SYDNEY chased the vessel for about an hour, her signals being ignored for some time and then the subject of a fumbled response. The chase and the incompetent signals response alone might have been explicable, but cumulatively with the other matters they should have caused disquiet.
- Once SYDNEY had received the signal 'PKQI' and consulted her reference books, she must have realised the ship before her was not STRAAT MALAKKA: she had a different bow, stern, superstructure and features. This knowledge was gained only when SYDNEY was very close to KORMORAN, and it is likely that this caused the flurry of activity on SYDNEY, as described in the German account.
- By the time SYDNEY signalled 'IK' she must have known the ship was not STRAAT MALAKKA. But by then it was too late, SYDNEY having lost all tactical and weapons advantage.
- SYDNEY did not start to go to action stations until about the time she realised the ship was not STRAAT MALAKKA – after receipt of the signal PKQI and consultation with the books of reference.

19.34 The fundamental error was the failure to believe the plot. Once it was known that no ship was expected in the area SYDNEY should have treated the other ship as suspicious. That is so regardless of Tactical

Note No. 9, although that note outlined a procedure likely to produce identification of the suspicious ship without placing SYDNEY at risk.

It is difficult to accept that—with SYDNEY chasing KORMORAN into the sun for about an hour and the consequential difficulty with reading flags and discerning features—there was not on SYDNEY's bridge an appreciation of the increasing danger: she was being drawn ever closer to the unidentified ship without being able to identify her. If the ship was a disguised raider, SYDNEY was placing herself in great danger. The identification process was, in fact, never completed: the third step, IK, was signalled when the ships were close and parallel abeam.

It is, however, beyond doubt that CAPT Burnett did not treat the ship as suspicious until after receipt of the signal PKQI, by which time the ships were close to each other.

The flaw in Tactical Note No. 9

- 19.35 Australian Squadron Tactical Note No. 9, reflected in LEANDER's War Temporary Orders, required that if a vessel sighted appears innocent, in that 'her appearance, in conjunction with known movements of shipping, gives no cause for suspicion'⁴⁴, the vessel was to be closed 'until within signalling distance, when her name will be ascertained'.⁴⁵ Thereafter the secret challenge procedure was to be carried out.
- 19.36 The flaw in Tactical Note No. 9 was that it assumed that at distance a sound decision could be made about whether the sighted vessel appeared 'innocent' or 'suspicious'. Further, it assumed that a ship at cruising stations could safely approach to a point where signals could and would inform the warship of the vessel's name. This latter assumption was wrong in situations where signalling was by flags: the signals could not be read beyond 5 miles. In the conditions experienced on 19 November 1941, KORMORAN having turned toward the sun, signals could not be read until SYDNEY was well within KORMORAN's gunnery range, and the delay thereafter in determining from the books of reference the supposed name of the vessel and then its secret call sign meant that SYDNEY closed even further, to a very unsafe position. That was an inevitable consequence of complying with Tactical Note No. 9 in the prevailing conditions whilst ever KORMORAN signalled by flags, after an initial assessment had been made that the ship 'appears innocent'.

⁴⁴ NZA.001.0012 at 0013

⁴⁵ NZA.001.0012 at 0013

- 19.37 So long as merchant vessels communicated by flag, requiring warships to close to within a ship's gunnery range to read the identifying signals, the recognition system contained an insurmountable flaw that created a grave risk for the warship. The system worked perfectly if the vessel was not a raider; it was a recipe for disaster if the vessel was a raider. It was SYDNEY's misfortune to encounter one of the seven raiders afloat.
- 19.38 The reasons there were so few disasters resulting from the identification system were that there were so few raiders and they rarely encountered warships.

The Navy's recognition of the flaw in the recognition procedure

- 19.39 On 15 July 1941 the Naval Commander-in-Chief East Indies Station, VADM R Leatham CB RN, wrote, 'Definite identification of a suspicious ship without risk to one's own ship must always be a very difficult matter especially with an enemy so well versed in the art of deceit as the Germans'.⁴⁶
- 19.40 On 20 October 1941 CAPT Burnett's successor as Deputy Chief of Naval Staff, CAPT FE Getting, wrote, in relation to identification of merchant ships, 'An almost water-tight system is provided for the identification of merchant ships'.⁴⁷ He then set out the four-stage recognition procedure, regrettably getting the last two stages wrong. He wrote, 'The two outer letters of the secret call sign are then made to the merchant ship, who should reply with the two inner letters'.⁴⁸ The reverse of that was correct.
- 19.41 It would seem from the 'almost water-tight system' remark that there was no appreciation of the danger into which a warship was drawn should the merchant vessel be a raider.

Immediately after the loss of SYDNEY, however, the defect became apparent. It is useful to trace the Navy's developing understanding of the problem.

- 19.42 On 4 December 1941 CMDR Dechaineux wrote a draft of a letter he suggested the Deputy Chief of Naval Staff send to all merchant ship owners. Paragraph 2, which was not ultimately included in the letter sent, read:

One direct lesson from the loss of H.M.A.S. 'SYDNEY' is that the Commanding Officer of the 'SYDNEY', having had previous experience of the inefficiency of Masters in this respect, closed the

⁴⁶ UKAA.010.0013

⁴⁷ NAA.010.0223

⁴⁸ NAA.010.0223

disguised raider in order to establish identity, with the result that he placed himself in an unsound tactical position. This situation would never have occurred had the Captain of the 'SYDNEY' been quite confident that all friendly ships would, without delay reply correctly to his request for secret signal letters. He would then be able to establish identity at a distance, which would not put him at a tactical disadvantage. This desirable state of affairs does not exist. The Captain of the "SYDNEY", acting on previous examples of friendly ships failing to comply with challenge and reply procedure, closed the apparently friendly ship, with the result which you all know.⁴⁹

19.43 On 16 December 1941 the Rear Admiral Commanding the Australian Squadron, RADM Crace, wrote:

- (b) In the past, the standard of signalling by Merchant Vessels has left much to be desired, and I feel it most important that it should be impressed on Merchant ships that any failure on their part either in signalling or in complying immediately with orders given by H.M.A. Ships may result in very unpleasant consequences.
- (c) With regard to the challenge and reply procedure (vide C.B.3050 Article 371), the remarks in (b) above still apply but to a lesser extent, as it will usually be possible to recognise friendly ships by day. In cases where this can not be done with certainty, however, the challenge and reply procedure would normally be carried out at a range of about 8 - 10 miles. This points to the necessity for all merchant ships to carry daylight signalling lamps if
 - (i) the procedure is to be of value and the warship guarded from sudden close-range attack.
 - (ii) valuable time is to be saved by overcoming the need to board, or to send in, what may be friendly ships.

...

- 3. Since Navy Office letter under reply was written, war in the Far East has broken out and in consequence H.M.A. Ships are being instructed normally not to board friendly ships for the purposes of investigation, observing the now changed conditions in regard to risks from submarine attack.⁵⁰

The letter does not explain how it was 'usually possible to recognise friendly ships by day' or at what range. The implicit suggestion is that, if all merchant ships were provided with daylight signalling lights, the warship could safely perform the full recognition procedure at distance.

⁴⁹ NAA.074.0041

⁵⁰ NAA.074.0074

19.44 On 22 December 1941 CMDR Dechaineux concurred:

Concur with R.A.C.A.S. remarks.

The provision of daylight lamps is difficult. An Aldis if efficiently used will give 5 miles range by day in normal weather conditions.

Will D.S.C. and D.O.T.M. please remark.⁵¹

Responding to RACAS, he suggested, 'The question of equipping merchant ships with daylight signalling lamps is under consideration. It will be noted that the Admiralty does not insist on this equipment'.⁵² The Secretary of the Naval Board wrote to RACAS to that effect on 24 December 1941. On a copy of that letter, however, appears a note, perhaps from the Deputy Chief of Naval Staff: 'Are we really considering this - It seems to me an insoluble problem. Even if we give the light to our ships - what about our allies?'⁵³

19.45 A memorandum about the proposal was submitted to the Department of Defence and the Deputy Chief of Naval Staff on 29 December 1941 (see Figure 19.2).⁵⁴

19.46 This evoked a response from CMDR Dechaineux, who did not agree that flags could be read at 5 miles:

Reference D.S.C.'s paragraph 3 at "X", I do not agree. It is sometimes very difficult to read a flag hoist at as little as a mile. The whole purpose of suggesting a daylight lamp is that warships can identify ships from a range at which they are not tactically in a disadvantageous position, i.e. outside 5 miles at least.

2. With reference to D.S.C.'s paragraph 1 at "Y", the majority of British merchant ships are in convoy, and thus do not require identification, and hence do not require a daylight flashing lamp. It is probable that not more than 500 British and Allied ships are sailing independently. It would appear that the task of providing 500 daylight signalling lamps is not insuperable.

3. It is proposed that the matter be referred to the Admiralty.⁵⁵

⁵¹ NAA.074.0071

⁵² NAA.074.0071

⁵³ NAA.074.0070

⁵⁴ NAA.074.0068

⁵⁵ NAA.074.0065

DEPARTMENT OF THE NAVY.

MINUTE PAPER.

(This side only to be written on.)

FORM 10-1-41

SUBJECT:

SAFETY OF MERCHANT SHIPPING.

R.C.P.

R.C.N.S.

Submitted.

Y | With reference to C.N.S. Minute of 26th December, it is suggested that little will be gained unless an Admiralty direction is given that every Merchant Ship, British or Allied, should be provided with a daylight flashing lantern. In order to implement this direction, many years would elapse before it could be safely said that every ship on the high seas was so provided.

2. Article 66 B of the Recognition Manual does not say that it is essential that daytime identification procedure should be carried out by flashing. It says that Merchant Ships make their signal letters either by flags or by flashing. It then says what the Warship makes and how the Merchant Ship replies. This article is loosely worded, but the fact that flags are mentioned in it, infers that the identification procedure may be carried out by flags.

X | 3. It seems desirable that Merchant Ships should be informed that flag signalling may be employed when carrying out identification procedure. It might however, be desirable for Warships to make the two centre letters of the secret W/T Call Sign by a signalling projector, since it cannot be expected that Merchant Ships will be able to read flags hoisted in H.M. Ships at long distances. H.M. Ships, on the other hand, should be able to distinguish flags hoisted in Merchant Ships at ranges of at least 5 miles, particularly if the two outside letters of the secret Call Sign are separated by a tack line. A circular memorandum to the Commanding Officers of H.M.A. Ships and R.C.S.O.'s is recommended, outlining this policy.

4. It is suggested that R.A.C.A.S. be informed accordingly, and that paragraph 2 of the proposed memorandum be cancelled.

29 December, 1941.

L. P. K. Braine
R.C.S.O.

Figure 19.2 A minute paper dated 29 December 1941, discussing daylight lamp use and flag use⁵⁶

⁵⁶ NAA.074.0068

19.47 The response, dated 31 December 1941, from the Director of Signals Communication was as follows:

Concur that it is desirable that a daylight lamp be provided and I also concur that it is sometimes difficult to read flags at distances of one mile. It is also difficult to read daylight flashing lamps if the ship is "up sun". These are exceptional cases and I consider that to be able to read flags at even 3 miles is a step in the right direction. Until the day when all independently sailing ships have daylight flashing lamps, it is suggested that it is desirable to inform ships that the outside letters of their secret call signs may be hoisted by flags when carrying out identification procedure.

Para.2.

I was unaware that there were only 500 British and Allied ships which sailed independently. It is probable that this number of S.P's could be produced within a year or so of the order being placed, but it must be remembered that most manufacturers of signalling lamps are already engaged on turning out the lamps for other Defence services. The question of priorities therefore arises.⁵⁷

19.48 On 2 January 1942 CMDR Dechaineux submitted the proposed signal shown in Figure 19.3 to the Admiralty.⁵⁸

19.49 Thus within six weeks of the loss of SYDNEY there was in the Navy recognition that the need for warships to close to read flag signals as part of the identification process was a serious defect in the recognition procedures. It was argued that the defect could be overcome only by the provision of signal lamps, which would enable a warship to stand off beyond the range of a raider's guns and perform the recognition procedures.

Had such a system been in operation in November 1941, it is improbable SYDNEY would have been lost: she could have required KORMORAN, posing as STRAAT MALAKKA, to respond to signals identifying herself under threat of fire while remaining outside KORMORAN's gunnery range.

⁵⁷ NAA.074.0064

⁵⁸ NAA.074.0063

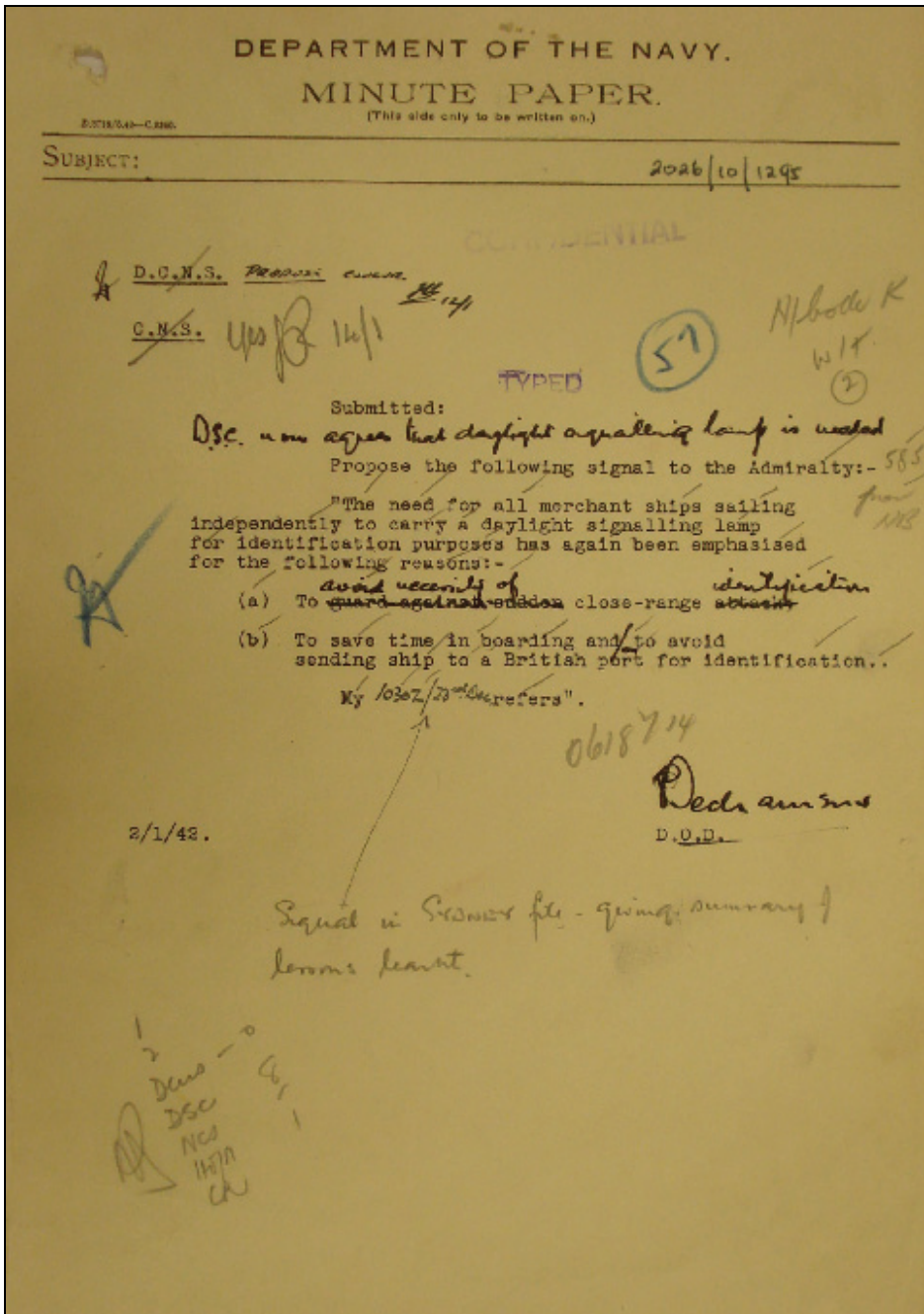


Figure 19.3 CMDR Dechaineux's proposed signal on the need for daylight signalling lamps⁵⁹

⁵⁹ NAA.074.0063

Conclusion

19.50 SYDNEY was lost because she approached to a position abeam and close to KORMORAN, thus losing all tactical and armaments advantage. She did so while performing her duty of identifying an unknown vessel. Under procedures established by Naval Control Service Instructions 181 and 371 and Australian Tactical Note No. 9, if she assessed the ship to be 'innocent' she was required to approach to a position close enough to enable her to read identifying signals from the merchant vessel; similarly, if she assessed the vessel to be innocent she was not required to go to action stations. She had not done so.

Because merchant vessels usually signalled by flag, as did KORMORAN, this recognition procedure meant that SYDNEY came within KORMORAN's gun range and thus was in danger. SYDNEY did not change her initial assessment of innocence, made at distance, until she was close to KORMORAN. By then she would have observed that KORMORAN's features—her size, hull shape and superstructure—did not accord with those of STRAAT MALAKKA. In accordance with the mandatory recognition procedure, SYDNEY signalled the internal letters of STRAAT MALAKKA's secret war call sign, to which KORMORAN could not respond. Instead, KORMORAN de-camouflaged and opened fire, gaining the first-strike advantage. That first strike destroyed SYDNEY's bridge and director control system. Although SYDNEY fought back, she did not recover from those initial barrages from all of KORMORAN's starboard-trained armaments and the torpedo strike that followed shortly afterwards.

19.51 The error SYDNEY made was to assess the ship as innocent when the ship was not on SYDNEY's plot and thus was not expected to be in the area. The purpose of the plot was to inform warships of friendly merchant vessels they could expect to encounter. If a vessel was encountered and was not on the plot it should have been assumed suspicious until its innocence was established. Had SYDNEY had regard to 'known movements of shipping' and assessed the ship as suspicious, she would have been at action stations, would have stood off 7 or 8 miles, and would have engaged in a different recognition procedure.

19.52 CAPT Burnett's initial assessment that KORMORAN appeared innocent was erroneous. Nothing happened thereafter that caused him to change his assessment. There were four occurrences of significance during SYDNEY's approach:

- KORMORAN turned into the sun and increased speed.
- KORMORAN was dilatory in responding to signals.

- There was an extended chase during which the Walrus aircraft was prepared for launch.
- KORMORAN sent out two Q signals shortly before the battle.

The decision to prepare the Walrus for launch is explicable only on the basis of some doubt or suspicion about the sighted ship. The other matters, each taken alone, might have reasonably been regarded as not raising suspicion. But, when they are taken, alone and cumulatively, with the fact that the ship was not on SYDNEY's plot, it is difficult to understand why they did not cause growing concern. There must not have been any appreciation of the fact that SYDNEY was being drawn increasingly closer to a position of grave danger before the identification procedure could be completed. That risk should have been appreciated. It was not; SYDNEY continued to approach without going to action stations.

- 19.53 Judgment, including military judgment, involves the giving of weight to known or perceived circumstances or events. Different people might attach different weight to the circumstances or events. But in not giving full weight to the fact that there was no ship expected in the area – and thus by deduction any ship sighted should be regarded as suspicious until the contrary was established – CAPT Burnett made a serious error that had terrible consequences.

Would others have acted as CAPT Burnett did?

- 19.54 Human nature is such that, once it is known that a course of action results in tragedy, no one will admit they would have taken that course of action. That is 'the prism of hindsight' to which Gleeson CJ referred in *Rosenberg v Percival*.⁶⁰ So, to assess whether other commanding officers would have acted as CAPT Burnett did, one must look to conduct before or without knowledge of the SYDNEY-KORMORAN encounter on 19 November 1941.

- 19.55 From the beginning of the World War 2 until SYDNEY's encounter with KORMORAN there had been only five encounters between a raider and a warship:

- HMS ALCANTARA's action against THOR on 28 July 1940⁶¹
- HMS CARNARVON CASTLE's action on 5 December 1940⁶²

⁶⁰ CASE.005.0001 at 0006 to 0007

⁶¹ NAA.002.0216 at 0233

⁶² NAA.004.0213 at 0216

- HMS LEANDER's action against RAMB I on 27 February 1941⁶³
 - HMS VOLTAIRE's action against THOR on 4 April 1941⁶⁴
 - HMS CORNWALL's action against PINGUIN on 8 May 1941.⁶⁵
- 19.56 ALCANTARA was an armed merchant cruiser. On 17 July 1941 she was ordered to divert to patrol off the Brazilian state of Pernambuco and join HMS HAWKINS in a hunt for a raider reported in the area. On 26 July ALCANTARA was ordered to search off Trinidad Island, which she did on the same day, sighting two masts and altering course to intercept. At a distance of 23,000 yards, the unknown ship turned momentarily towards her and then away. After a four-hour chase, while 16,000 yards from ALCANTARA, the unknown ship hoisted the German flag and opened fire. The battle lasted more than an hour, and the German vessel escaped. ALCANTARA suffered severe damage and loss of life.
- 19.57 ALCANTARA knew the vessel she had been seeking for more than a week was a raider. CAPT Burnett did not know the vessel he encountered was a raider. No question of closing to engage in a recognition procedure arose with ALCANTARA, as it did with SYDNEY. ALCANTARA was engaged in a raider hunt; SYDNEY was not.⁶⁶
- 19.58 CARNARVON CASTLE was an armed merchant cruiser. On the morning of 5 December 1940 she sighted a suspicious vessel at a range of 19,000 yards, the extreme limit of visibility, off the coast of South America. The vessel was steaming away. CARNARVON CASTLE ordered her to stop; the vessel did not. CARNARVON CASTLE fired one round, which fell short. The other vessel replied with a four- or five-gun salvo at 17,000 yards. Ultimately the range reduced to 8,000 yards, the raider hitting CARNARVON CASTLE repeatedly – a total of 27 hits. The raider escaped.

CARNARVON CASTLE sighted a 'suspicious ship'. SYDNEY sighted a ship that did not arouse her suspicion, even though she was not on SYDNEY's plot. It is of note that each of the encounters at distance engaged in by ALCANTARA and CARNARVON CASTLE occurred against vessels that were known to be or were assessed as suspicious

⁶³ UKAA.010.0107; NZA.001.0001

⁶⁴ PUB.045.0001 at 0121 to 0122

⁶⁵ NAA.007.0001 at 0002

⁶⁶ UKAA.001.0001 at 0005

and before the merchant ship recognition code of 25 December 1940 had been promulgated.⁶⁷

- 19.59 On 27 February 1941 LEANDER was patrolling off the Maldive Islands when she sighted a vessel that aroused suspicion because she resembled the Ramb Class of Italian banana freighters and had a gun on her forecastle. At 10,000 yards, LEANDER ordered the vessel to hoist her colours: she hoisted the Red Ensign. The vessel was then ordered to hoist her signal letters. After a five-minute delay the letters were hoisted, but they did not appear in the books of reference. LEANDER made the secret challenge; there was no reply. CAPT Bevan decided to board and by flag and signals ordered the ship to stop. She did not reply but hoisted the Italian flag and started training her guns. LEANDER then started to train her guns on the stranger. LEANDER was 'just before the stranger's beam' and about 3,000 yards distant. The stranger opened fire but was short. LEANDER fired five rapid salvos, hitting the stranger and causing fires. The Italian ship had fired only three rounds per gun, her crew abandoned ship, and later she exploded and sank.

CAPT Bevan placed LEANDER in a position abeam the raider, 3,000 yards away. He did as CAPT Burnett did. The Admiralty commented in 1942 that LEANDER 'was perhaps fortunate to escape the fate which befell the Australian cruiser *Sydney*'.⁶⁸

- 19.60 On 4 April 1941 VOLTAIRE, a British armed merchant cruiser, was sunk by Raider E, the SANTA CRUZ (being the raider THOR), between the West Indies and the Cape Verde Islands. Little is known of the engagement except that the raider opened fire 'at very long range' and her first salvo crippled VOLTAIRE, which sank after three hours' continuous shelling. The raider picked up 197 survivors.⁶⁹

Little is known of the actions of the captain of VOLTAIRE.

- 19.61 On 8 May 1941, whilst in the Indian Ocean near the Seychelles, CORNWALL received a report of a raider from a merchant ship. She searched for the raider all that day and the following night. At dawn on 9 May she launched both her aircraft to continue the search. One aircraft found a merchant ship of 'suspected type' for a raider, and both returned to CORNWALL. One aircraft was relaunched so it could find out if the vessel was a raider. The vessel hoisted signal letters showing she was TAMERLANE. TAMERLANE was not on CORNWALL's plot.

⁶⁷ UKAA.001.0001 at 0008 to 0009

⁶⁸ UKAA.001.0001 at 0010

⁶⁹ UKAA.001.0001 at 0010; compare PUB.045.0001 at 0121. According to the German captain action began at 9,200 yards.

CORNWALL turned to intercept. The raider began making 'raider reports', resulting in CORNWALL's aircraft advising the raider that the warship was British and she should stop her engines. CORNWALL turned to give the ship a sight of her silhouette. The raider did not stop. When 19,000 yards away, CORNWALL signalled three times, 'Heave to or I fire'.⁷⁰ That order was disobeyed, but CORNWALL did not open fire, thinking 'she might be a normal merchant ship whose master was gallantly determined not to stop'.⁷¹ Fourteen minutes after the first three 'stop' signals, CORNWALL again signalled, 'Heave to or I fire', backed up with a single 8-inch shot over. CORNWALL's aircraft was again launched, with instructions to 'drop a 250-lb bomb close to the suspect, and, if that did not stop her, to drop the other on her forecandle'.⁷² The range was inside 12,000 yards when the raider opened fire with five guns. At a range outside 12,000 yards CORNWALL adopted a parallel course. CORNWALL was hit twice, but shortly afterwards she succeeded in hitting the raider, sinking her.

19.62 CORNWALL was engaged in a 'raider hunt'⁷³; SYDNEY was not. Notwithstanding that the vessel CORNWALL suspected gave a ship's name not on the plot, made 'raider reports' and refused to stop, the captain of CORNWALL was undecided whether or not the vessel was a raider. The Admiralty criticised the captain for closing within 12,000 yards and for not advising the commander-in-chief by radio when contact was made.

19.63 I should also mention an encounter between HMS DEVONSHIRE and a raider that occurred in the South Atlantic on 22 November 1941, three days after SYDNEY was lost but before the circumstances were known. DEVONSHIRE dispatched her aircraft to carry out an anti-submarine patrol and long-range search ahead of her. The patrol sighted a merchant vessel that, from her description, DEVONSHIRE's captain 'suspected ... might well be an enemy raider'.⁷⁴ At 10 miles distance DEVONSHIRE sighted the ship and flew off her aircraft to identify the ship. By then the captain's 'suspicions were thoroughly aroused by the manoeuvres and appearance of the ship, which closely resembled Raider No. 16'.⁷⁵ He therefore kept his ship between 12,000 and 18,000 yards distant in order to 'frustrate possible torpedo attack'.⁷⁶ The raider transmitted raider signals that identified her as POLYPHEMUS, a ship of similar appearance. To remove doubt, the captain of DEVONSHIRE

⁷⁰ UKAA.001.0001 at 0012

⁷¹ UKAA.001.0001 at 0012

⁷² UKAA.001.0001 at 0012

⁷³ UKAA.001.0001 at 0014

⁷⁴ UKAA.001.0001 at 0016

⁷⁵ UKAA.001.0001 at 0017

⁷⁶ UKAA.001.0001 at 0017

signalled the Commander-in-Chief South Atlantic, who told him the ship could not be POLYPHEMUS. DEVONSHIRE then opened fire, sinking the raider.

19.64 In this instance, DEVONSHIRE's aircraft sighted a vessel that was able to be described, and the description gave rise to suspicion. CAPT Burnett did not have such a description. It appears that he contemplated using his aircraft to investigate the vessel sighted but decided against doing so for reasons unknown, although it is known that it was not the practice to have an aircraft investigate when off the Australian coast. Because she regarded the merchant vessel sighted as suspicious as a result because of her description, DEVONSHIRE decided to stand off while radio silence was broken to inquire if the vessel could be POLYPHEMUS. SYDNEY did not know the other vessel purported to be STRAAT MALAKKA until she was well within 10,000 yards.

19.65 Of these six instances, nothing is known of one—VOLTAIRE. In two instances, ALCANTARA and CORNWALL, both Allied warships were engaged in a definite 'raider hunt'. CARNARVON CASTLE sighted a 'suspicious ship' at 19,000 yards. She ordered her to stop, and the reply was gunfire. DEVONSHIRE also had a description of the sighted vessel; this aroused her suspicions, so she kept at distance until the identity of the stranger was known. The circumstances of those four encounters are quite different from those of the encounter involving SYDNEY: none required a close approach to carry out a recognition procedure. Their situations give no intimation of how the warships' captains would have acted had they been in the position of SYDNEY's captain.

LEANDER also sighted a 'suspicious ship' but closed to a course parallel to the vessel and 3,000 yards away before the vessel disclosed her identity. In many respects LEANDER's conduct is not dissimilar to SYDNEY's—but LEANDER's opponent's gunnery skills were poor.

19.66 There are two other instances, not involving raiders, to which I should refer. They concern the plot.

- The Commanding Officer of HMAS MORESBY reported:

On Tuesday, 21st January [1941] at 1618, a strange vessel was sighted steering north-eastward. She had not been shown in the V.A.I. I hoisted the signal "what ship" but no answer could be seen. Having hoisted the motor boat which was then alongside, I proceeded to investigate. Closer investigation showed that the vessel was probably the M.V. "Tulagi", painted grey instead of white (as she was when I passed her on 1st January). I did not have sufficient speed to close the vessel to confirm identification so requested her (by light) to alter course towards me. This she

did and identified herself as "Tulagi". After signalling my thanks to the Master, each vessel proceeded.⁷⁷

- CAPT HMC Waller, then captain of PERTH, wrote about an incident on 3 December 1941, when the loss of SYDNEY was known: he saw a ship 'which did not quite agree with my plot, so I stopped her by signal at a distance and carried out full procedure for a "raider at a distance" so to speak'.⁷⁸

19.67 There are two other relevant examples of a commanding officer's approach. The captain of HMS NIGERIA, a British light cruiser, issued his standing orders, which stated, 'Action stations are to be sounded off immediately if a ship is detected within 15,000 yards, unless a friendly vessel is expected to be in the vicinity in which case my orders may be awaited'. Further, the orders required the principal control officer and the officer of the watch to be aware of 'War and Merchant shipping likely to be encountered'.

The commanding officer was addressing ships detected by radio direction finding, but the orders do reflect an underlying approach that, unless a friendly ship was expected in the vicinity, a sighted ship was to be treated as suspicious until identified. They also emphasise the reliance on, and the importance of being familiar with, the vessels likely to be encountered.

19.68 The other matter relates to an incident that involved HMAS WESTRALIA on 10 November 1941, nine days before SYDNEY was lost. WESTRALIA was off the Australian coast, about 365 miles north-east of Darwin. Her log records:

0450 Ship sighted brg [bearing] N35W(M) action stations. Cor [course] Sp [speed] as req [required] for identifying vessel

0510 Ship identified as SS Marella British east bound. 0515 resumed course 566W (m)⁷⁹

The monthly report of proceedings by CAPT Hudson RN stated:

Monday 10th November 1941

0510 - Identified British S.S. "Marella" by Merchant Ship recognition procedure. "Marella" was not on the plot when sighted but subsequent information was received.⁸⁰

⁷⁷ AWM.001.0107 at 0108

⁷⁸ AWM.001.0128 at 0129

⁷⁹ NAA.063.0351 at 0358

⁸⁰ AWM.006.0289 at 0290

Although it is not entirely clear, when the report of proceedings is read with the ship's log, it seems that when the ship was sighted at 0450 the plot was consulted and no ship was expected to be in that position. Accordingly, the ship went to action stations. If that interpretation of the documents is correct, CAPT Hudson was in the situation CAPT Burnett found himself in nine days later—namely, a sighted ship not on his plot. WESTRALIA went to action stations; SYDNEY did not. When considering the circumstances of the WESTRALIA encounter, it is necessary to bear in mind that it occurred at 0450, some two hours before dawn.⁸¹ It is not known how close WESTRALIA approached to MARELLA or whether the exchange of signals in the ship's recognition procedure occurred by light or flag.

- 19.69 There is thus little evidence with which to judge how other commanding officers would have reacted had they been in CAPT Burnett's position. The WESTRALIA encounter on 10 November 1941 and the PERTH incident on 3 December 1941 (no doubt with knowledge of the loss of SYDNEY) are instances of a vessel being sighted off the Australian coast where friendly merchant vessels might be expected but where the sighted vessel was not on the plot or its location did not agree with the plot. On both occasions the ship was treated as suspicious until the contrary was established.
- 19.70 One must approach with considerable reservation the comments of experienced Naval officers *after* the event. It is inevitable they would have been influenced by the knowledge that acting as CAPT Burnett did resulted in the loss of SYDNEY. Inevitably, they would be critical of that course. It is easy for those not faced with command decisions to say they would have acted differently—particularly knowing that CAPT Burnett's course of action resulted in loss.
- 19.71 How others in command would have acted on 19 November 1941 in similar circumstances can never be known.

⁸¹ Sunrise was at 0642: Geoscience Australia—www.ga.gov.au/.

Glossary

Abaft	Nearer to the stern of the ship or to the rear of the ship.
Abeam	Directly at right angles to the fore and aft line; also referred to as 'on the beam'.
Abreast	Two vessels at sea, steaming along close to one another and on parallel courses, with stems in line or nearly in line.
Abwehr	German military intelligence organisation from 1921 to 1944.
Action stations	The highest degree of readiness in a warship, in which all crew members are at a state of alert, weapons are manned and all major watertight doors are shut.
Admiralty	A British department of state. The ministerial head was known as the First Lord of the Admiralty.
Aft	Near the stern; toward the stern. Also referred to as after, as in 'after-steering' a steering compartment at the aft end of the ship.
Ahead	Directly in advance.
Amidships	Halfway between the stem and stern of a ship; the middle of the breadth of a ship anywhere in her length; an order to the helmsman. Often abbreviated to 'midships'.
ASDIC	Radio device for detecting underwater objects, particularly submarines; precursor to sonar.
Astern	Directly in rear. Also used with reference to the movement of a ship's main engines when required to reverse from going ahead.
Athwart	Across the ship; from side to side.
Athwartships	At right angles to the fore and aft line.
Australia Station	A Naval command area, consisting of the waters around the Australian continent and established in 1859, after the Crimean War. The Australia Station became the responsibility of the Commonwealth of Australia from the foundation of the Royal Australian Navy in 1913.
Australian Commonwealth Naval Board	The Australian counterpart of the Board of Admiralty, established in 1905, charged with the administration of all matters relating to the Australian Navy, in accordance with the policy laid down by the Australian Government and directed by the minister responsible for the Navy. Disbanded in 1976.

Avast	To stop; hold fast. The order to stop pulling or heaving on a rope.
Awash	Level with the surface of the water. The decks of a ship are awash when seas break onto them.
Beam	That part of the ship's side that lies between bow and quarter; can also denote the breadth of a ship.
Bearing	A relative direction from the source. 'Bearing green 45' means 45 degrees on the starboard (right) side from the source.
Belay	To secure (as a rope) by turns around a cleat; also to stop, to case, ignore the last instruction.
Bilge	That part of the ship near the keel. If a ship's bottom is stove in, she is said to be 'bilged'.
Board of Admiralty	An internal unit of administration of the Admiralty, charged with the control and administration of all matters relating to the British Navy, in accordance with the policy laid down by the Government and directed by the First Lord.
Boatswain	The boatswain, or bosun, was traditionally responsible for the rigging, sails and sailing equipment in a ship. Now the boatswain looks after the general working of the ship, especially with regard to maintenance and cleanliness of the ship's hull, superstructure, decks and holds. (Pronounced bo'sun)
Bollard	Circular metal or stone posts around which ropes are belayed.
Bow	The front part, or fore end, of the ship, immediately abaft the stem.
Bulkheads	Vertical partitions going across the ship or fore and aft.
Cable length	A nautical unit of measure equal to one-tenth of a nautical mile.
Carvel built	A boat built with its side planks meeting flush and not overlapping, giving smooth sides.
Cleats	A metal or wood fitting on a base with a projecting horn on each side of the centre for making ropes 'fast' by wrapping them under the horns.
Clinker built	A boat built with its side planks overlapping at their edge.
Coamings	The vertical plates built around a hatchway.

Compass points	Compass point	Abbreviation	True heading
	North	N	0.00° or 360.00
	North by east	NbE	11.25°
	North-north-east	NNE	22.50°
	North-east by north	NEbN	33.75°
	North-east	NE	45.00°
	North-east by east	NEbE	56.25°
	East-north-east	ENE	67.50°
	East by north	EbN	78.75°
	East	E	90.00°
	East by south	EbS	101.25°
	East-south-east	ESE	112.50°
	South-east by east	SEbE	123.75°
	South-east	SE	135.00°
	South-east by south	SEbS	146.25°
	South-south-east	SSE	157.50°
	South by east	SbE	168.75°
	South	S	180.00°
	South by west	SbW	191.25°
	South-south-west	SSW	202.50°
	South-west by south	SWbS	213.75°
	South-west	SW	225.00°
	South-west by west	SWbW	236.25°
	West-south-west	WSW	247.50°
	West by south	WbS	258.75°
	West	W	270.00°
	West by north	WbN	281.25°
	West-north-west	WNW	292.50°
	North-west by west	NWbW	303.75°
	North-west	NW	315.00°
	North-west by north	NWbN	326.25°
	North-north-west	NNW	337.50°
	North by west	NbW	348.75°
Counter stern	A cut-away or elliptical type of stern in which the underside overhangs the rudder.		
Course	A compass direction steered by the helmsman of a ship; the angle in degrees between the north-south line of the compass.		
Crew	Although it is usual to refer to ratings as the crew, officers are also members of a ship's crew.		
Crow's nest	A small steel hut built high in a ship's superstructure and from which a seaman keeps his lookout.		

Cruiser	Best defined as the largest warship-type ship that could be built in numbers. It was in some ways a general-purpose warship designed to escort and assist battleships, protect merchant shipping and support destroyers, as well as bearing a part of the normal Naval burdens of shore bombardment, patrolling and scouting. The term originated in the 18th century, when a cruiser was any warship on detached duty. By 1939 international treaties had defined two separate types – the 10,000-ton (maximum) ‘heavy’ cruiser, which was armed with 8-inch guns, and the ‘light’ cruiser, which could equal the heavy cruiser in tonnage but had guns not larger than 6 inches.
Cruiser stern	A rounded stern; a much fuller underwater section compared with a counter stern.
Cutter	A small boat used by ships of war. A ship’s cutters are broader, deeper and shorter than the pinnaces; they are fitter for sailing and are commonly used for carrying stores, provisions, passengers, and so on, to and from the ship.
Damage control	The term used to describe the emergency control of situations that might cause the sinking of a ship. A common example is the isolation, by means of securing all hatches and openings, of a damaged compartment to prevent flooding into other compartments.
Davit	A curved steel column with a tackle fitted at its head and used in pairs for lifting lifeboats and swinging them over the side for lowering into the water.
Dead lights	A round steel cover that can be screwed down over a porthole to protect the glass from being broken by the force of heavy seas in a gale.
Dead water	The water in a vessel’s wake, close to her stern.
Department of Defence	A Commonwealth department continuously in existence since 1901. It was named the Department of Defence Co-ordination from 1939 to 1942. Its minister was president of the Naval Board from 1905 to 1915 and from 1921 to 1939. During these periods the department was responsible for Naval administration through the agency of Navy Office.
Department of the Navy	A Commonwealth department in the years 1915 to 1921 and 1939 to 1973, responsible for Naval defence. Its minister was president of the Naval Board at those times.
Derrick	A steel or wooden boom fitted to the lower end of a ship’s mast or to the deck for hoisting cargo into or out of the hold.

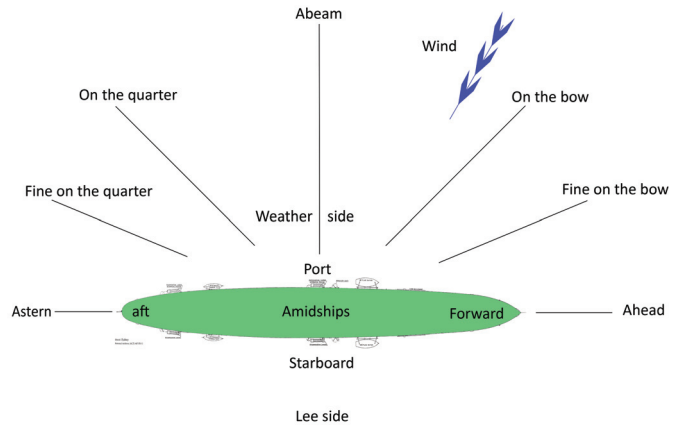
Draught	The depth of the lowest point of a ship below her water line.
Drift	The direction and distance an object is carried by current at sea.
Engine-room log	A book in which a watch-keeping engineer records particulars relating to the ship's engines during his watch.
Fathom	<i>see</i> Units of measure
Fend	To fend a boat is to prevent it striking against anything that might endanger it.
Fender	An object used to provide protection to the ship's side when berthing at a wharf or to another ship.
Flare	A long-lasting light used to attract attention.
Fleet	In Australia 'the Fleet' means the main seagoing force of ships and aircraft under the command of the senior Naval officer afloat.
Flotsam	The cargo of a wreck that is floating about or freed from the wreck.
Flush deck	When the deck has no raised or sunken part.
Fore and aft line	The line between stem and stern (that is, in line with the keel); in the direction of the length of the ship.
Forecastle	Also called fo'c'sle, the fore part of the upper deck; the deck right forward, just abaft the bow. (Pronounced foe'ksle)
Founder	A vessel founders if a leak or leaks cannot be controlled by pumps.
Galley	A ship's kitchen.
Gunwales or gunwhales	The top or upper edge of a boat's side planking. (Pronounced gunnels)
Halyards	Ropes used for hoisting flags, sails, pennants, and so on. Also spelt halliards.
<i>Handelsschutzkreuzer</i>	Merchant navy protection cruiser
<i>Handelsstörkreuzer</i>	Merchant shipping disruption cruiser

HAPAG	<p>The Hamburg–Amerikanische Packetfahrt Actien-Gesellschaft for shipping across the Atlantic Ocean was founded in Hamburg. In 1912 HAPAG built the first of the ‘big three’ ocean liners – the IMPERATOR. She was followed by her sisters VATERLAND and BISMARCK. BISMARCK was under construction at the outbreak of World War 1 and was completed after the war for the White Star Line as the MAJESTIC. These were the first liners to exceed 50,000 gross tons and 900 feet in length.</p> <p>During World War 1 the majority of HAPAG’s fleet of 175 ships were destroyed, and most of the surviving ships (including the big three) had to be turned over to the winning side as war reparations. HAPAG rebuilt its fleet with much smaller ships, but the fleet was again mostly destroyed during World War 2, and the surviving ships were turned over to the Allied powers.</p>
Hatches	Covers of hatchways that rest on the hatch beams.
Hectometre	The unit of distance used by the Kriegsmarine in World War 2 for the ranging of artillery weapons. Equal to 100 metres.
Helm	Steering gear, including the wheel of a ship; the place a ship is steered from.
Helmsman	The seaman steering the ship.
Hoist	To haul anything up by means of a rope. A string of flags making a signal is also known as a hoist.
HSK 8	The German Navy’s official designation for KORMORAN, used for administrative purposes.
Hull	The complete outside plating of a ship up to the level of the upper deck.
International Signal Code	A flag code used by vessels of all maritime nations for signalling.
Jury rig	A makeshift rig fitted temporarily to a ship to replace a damaged or broken rig – for example, jury mast, jury rudder.
Keel	A continuous line of steeling plating lying fore and aft along the bottom middle line of a ship. The ship is built up from the keel.
Knots	A measure of speed representing nautical distance over time.
Kriegsmarine	The German Navy.

Lee	In the lee means sheltered from the wind. The lee side of a ship is the side other than that onto which the wind is blowing directly.
Listing	The leaning of a vessel to port or to starboard.
Maierform	A form of ship body construction featuring a raked stem, a cruiser stern and large cargo capacity; named after Austrian Naval engineer Fritz Maier (1844–1926).
Master	The captain of a merchant vessel; the navigator in the old sailing men-of-war.
Midships	<i>see</i> Amidships
Naval Board	<i>see</i> Australian Commonwealth Naval Board
Naval Staff	At Navy Office, responsible for the collection, evaluation and dissemination of intelligence, the preparation and negotiation of plans, the conduct of operations, the study of the principles of Naval warfare, and the promulgation of tactical doctrine.
Navigator	The officer responsible for the safe passage of a vessel, pilotage in and out of port and through difficult navigational waters (with or without electronic navigation aids), and provision of specialist advice to the commanding officer in relation to technical ship-handling and tactical ship-routing scenarios. Also responsible for the maintenance of navigation equipment and charts.
Navy Office	The head office of Australia's Naval administration from 1905. It was the central administration of the Department of the Navy from 1915 to 1921 and from 1939 to 1973 and the head office of the Naval Branch of the Department of Defence from 1905 to 1915, from 1921 to 1939, and since 1973.
On the bow	A bearing midway between ahead and abeam.
On the quarter	A bearing midway between astern and abeam.
Parliamentary Inquiry	The Joint Standing Committee on Foreign Affairs, Defence and Trade inquiry into the sinking of HMAS SYDNEY.
Pinnacle	A large rowing boat, more often a steam or motor launch 35 to 40 feet long.

<i>Peildeck</i>	Signal deck (German).
Pendant	A long flag, wider at the head (next to the mast) and tapering to a point. Also called a pennant.
Poop	The aftermast and the highest point of a large ship's hull. A poop deck is an exposed portal weather deck on the stern superstructure.
Port side	The left-hand side of the ship, looking forward.
Prize	A ship is seized as a prize when the officer in command is satisfied that the ship is an enemy ship and is liable to capture.
Prize officer	The prize officer is appointed to take charge of a ship seized as a prize, to navigate her to the port selected by the officer in command and to take charge of all papers and cargo on the seized ship.
Q message	A distress message, made by W/T, used by merchant ships to alert the Admiralty to the sighting of or upon being attacked by an armed merchant ship.
Quarter	A sector of the ship or the horizon from almost after to 45 degrees round on each side.
Quarterdeck	The after part of the upper deck.
R message	A wireless telegraphy message sent by a merchant ship and warning of attack by a raider or enemy surface vessel.
Rating	A sailor or seaman, as distinct from an officer.
Samson post	A strong vertical post or stump mast to which lines are attached for bearing loads.
Scuttle	To cause a vessel to sink.
Sea state	A summary description of the height, period, direction and swell of the ocean's surface waves at a given time and place.

Shipboard directions



Degrees from the bow	Bearing
0°	Dead ahead
11°15'	1 point on starboard bow
22°30'	2 points on starboard bow
33°45'	3 points on starboard bow
45°	Broad on starboard bow
56°15'	3 points forward of starboard beam
67°30'	2 points forward of starboard beam
78°45'	1 point forward of starboard beam
90°	On starboard beam
101°15'	1 point abaft starboard beam
112°30'	2 points abaft starboard beam
123°45'	3 points abaft starboard beam
135°	Broad on starboard quarter
146°15'	3 points on starboard quarter
157°30'	2 points on starboard quarter
168°45'	1 point on starboard quarter
180°	Astern
191°15'	1 point on port quarter
202°30'	2 points on port quarter
213°45'	3 points on port quarter
225°	Broad on port quarter
236°15'	3 points abaft port beam
247°30'	2 points abaft port beam
258°45'	1 point abaft port beam
270°	On port beam
281°15'	1 point forward of port beam
292°30'	2 points forward of port beam
303°45'	3 points forward of port beam
315°	Broad on port bow
326°15'	3 points on port bow
337°30'	2 points on port bow
348°45'	1 point on port bow
360°	Dead ahead

Spallation	A process in which fragments (spall) are ejected from a body as a result of impact or stress. Spallation as a result of impact can occur with or without penetration of the object creating the impact.
Stability	A ship's ability to return to the upright position when the force that heeled her over has been removed.
Starboard side	The right-hand side of a ship, looking forward.
Stem	The extreme forward part of a vessel.
Stern	The extreme rear part of a vessel.
Stove in	Broken by an external force.
Superstructure	Cabins, navigating rooms, masts, and so on, built above the top continuous deck of a ship.
Swell	Long, undulating movements on the sea's surface.
Tackle	A rope or line run through a number of blocks and forming a purchase, or tackle. This gives additional power when pulling by hand or mechanically.
Trim	The position in which a ship floats, either perfectly horizontal (on an even keel) or down by the stern (deeper after) or bow (deeper forward).
Units of measure	1 nautical mile = 1.852 kilometres = 18.52 hectometres 1 kilometre = 10 hectometres = 0.53 nautical mile 1 fathom = 1/1000 nautical mile = 2 yards = 6 feet = 1.82 metres 1 yard = 3 feet = 36 inches = 0.91 metres = 91.4 centimetres 1 inch = 2.54 centimetres = 25.4 millimetres
Waist	The midship part of the upper deck aft in the stern.
Watches	Periods of duty at sea, each traditionally four hours long.
Watertight	Having the strength and ability to keep out water.
Wave length	The distance between the summits of two adjacent waves.
Welin gear	AB Welin, a Swedish company founded in 1901, supplies safety equipment to ships, including davits, embarkation ladders, winches and lifeboat hooks.
Well decks	The lengths of deck between and below raised decks.
Whaler	A long, double-ended rowing boat.

Abbreviations

1st NM	1st Naval Member
AA	anti-aircraft
AB	Able Seaman
AC	Companion of the Order of Australia
ACB	Australian Confidential Book
ACH	Area Combined Headquarters
ACNB	Australian Commonwealth Naval Board
ACNS	Assistant Chief of Naval Staff
ADFA	Australian Defence Force Academy
ADM	Admiral
AFC	Air Force Cross
AFO	Admiralty Fleet Order
AM	Member of the Order of Australia
AMC	Armed Merchant Cruiser
AMS	Australian Minesweeper
AMSI	Admiralty Merchant Shipping Instruction
ANMM	Australian National Maritime Museum
AO	Officer of the Order of Australia; area of operations
AOC	Air Officer Commanding
AP	armour-piercing
A/S	anti-submarine
ASIO	Australian Security Intelligence Organisation
AVM	Air Vice Marshall
AWAS	Australian Women's Army Service
AWM	Australian War Memorial
B-Dienst	<i>Beobachtungsdienst</i> – radio monitoring service (German signals intelligence)
BPT	battle practice target
BS	Battle Squadron
C/S	call sign
CAFO	Confidential Admiralty Fleet Order
CAMSI	Confidential Admiralty Merchant Shipping Instruction
CAPT, Capt	Captain
CB	Confidential Book; Companion of the Order of the Bath
CCAS	Commodore Commanding the Australian Squadron
CCS	Combined Chiefs of Staff
CDF	Chief of the Defence Force, Australia

CDRE	Commodore
CGS	Chief of General Staff
C-in-C	Commander-in-Chief
CMDR	Commander
CDRE	Commodore
CMG	Companion the Most Distinguished Order of St Michael and St George
CNO	Chief of Naval Operations; Commonwealth Naval Order
CNS	Chief of Naval Staff
CO	Commanding Officer
COIC	Combined Operational Intelligence Centre
COIS	Chief of Intelligence Staff
COS	Chief of Staff
CPBC	common pointed ballistic capped
CPO	Chief Petty Officer
CS	Cruiser Squadron
CSC	Conspicuous Service Cross
CTF	Commander Task Force
CTG	Commander Task Group
CTU	Commander Task Unit
CWR	Central War Room
CZM	Commander-in-Chief Netherlands East Indies Naval Forces
DCA	Department of Civil Aviation
DCNS	Deputy Chief of Naval Staff
DCT	director control tower
DEMS	defensively equipped merchant ship
DF	direction finding
DFC	Distinguished Flying Cross
DNC	Director Naval Construction
DNI	Director Naval Intelligence
DNO	District Naval Officer; Director Naval Operations
DNOWA	District Naval Officer Western Australia
DOD	Department of Defence
DSC	Director of Signal Communications; Distinguished Service Cross
DSD	Defence Signals Directorate
DSO	Director of Signal Organisation; Distinguished Service Order
DSTO	Defence Science and Technology Organisation
EMC	<i>Einheitsmine Typ C (Ankertaumine)</i> – moored contact mines
ERA	engine room artificer
EST	Eastern Standard Time
ETA	estimated time of arrival
ETD	estimated time of departure

FAA	Fleet Air Arm
FELO	Far Eastern Liaison Officer
FLGOFF	Flying Officer
FLTLT	Flight Lieutenant
FOCAS	Flag Officer Commanding the Australian Squadron
FRUMEL	Fleet Radio Unit Melbourne
FSF	Finding Sydney Foundation
G	'Golf' time – GMT plus seven hours
GMT	Greenwich Mean Time (also 'Zulu' time)
GNR	Gunner
GOC	General Officer Commanding
GPCAPT	Group Captain
GSO	General Staff Officer
GWS	guided weapons system
h	hours
H	'Hotel' time – GMT plus eight hours
HA	high-angle
HACP	high-angle calculating position
HACS	high-angle control station
HE	high-explosive
HF/DF	high-frequency direction finding
hm	hectometre
HMAS	His (Her) Majesty's Australian Ship
HMAT	His (Her) Majesty's Australian Transport
HMCS	His (Her) Majesty's Canadian Ship
HMNZS	His (Her) Majesty's New Zealand Ship
HMS	His (Her) Majesty's Ship
HMT	His (Her) Majesty's Transport
hp	horsepower
HQ	headquarters
HQWA	Headquarters Western Area
HSK	<i>Handelsschutzkreuzer; Handelsstörkreuzer</i>
HT	Hired Transport
IJN	Imperial Japanese Navy
IWM	Imperial War Museum
JCS	Joint Chiefs of Staff
K	'Kilo' time – GMT plus 10 hours
KBE	Knight of the British Empire
kc	kilocycle
KTB	<i>Kriegstagebuch</i> (war diary)
LA	low-angle

LCDR	Lieutenant Commander
LCS	Light Cruiser Squadron
LEUT	Lieutenant
LF	low-frequency
LS	Leading Seaman
LS 3	Light Speedboat No. 3
Lt	Lieutenant
LtCdr	Lieutenant Commander
MBE	Member of the British Empire
MID	Mentioned in Dispatches
MIDN	Midshipman
MLS	Mine Layer Squadron
MMS	Mercantile Movements Section
MS	Merchant Ship
MTB	Motor Torpedo Boat
MV	Motor Vessel
NAA	National Archives of Australia
NARA	National Archive and Records Administration (United States)
NB	Naval Board
NCS	Naval Control Service
NCSI	Naval Control Service Instruction
NCSO	Naval Control Service Officer
NEACH	North Eastern Area Combined Headquarters
NEI	Netherlands East Indies
NHB	Naval Historical Branch, United Kingdom
NHC	Naval Historical Centre, Washington DC
NHS	Naval Historical Section, Australia
NID	Naval Intelligence Directorate
NIDS	National Institute of Defense Studies, Japan
NLA	National Library of Australia
nm	nautical mile
NOCS	Naval Officer Commanding (Sydney)
NOIC	Naval Officer-in-Charge
NWACH	North Western Area Combined Headquarters
NZNB	New Zealand Naval Board
OAM	Medal of the Order of Australia
OBE	Order of the British Empire
OIC	Operational Intelligence Centre; Officer-in-Charge
ONI	Office of Naval Intelligence
OS	Ordinary Seaman
PNF	Permanent Naval Forces

PO	Petty Officer
POW	prisoner of war
PRO	Public Records Office
PWSS	Port War Signal Station
QC	Queen's counsel
RAAF	Royal Australian Air Force
RACAS	Rear Admiral Commanding the Australian Squadron
RADM	Rear Admiral
RAF	Royal Air Force
RAN	Royal Australian Navy
RANC	Royal Australian Naval College
RANR	Royal Australian Navy Reserve
RANVR	Royal Australian Navy Volunteer Reserve
RCN	Royal Canadian Navy
RCNC	Royal Corps of Naval Constructors
RDF	radio direction finding (radar)
Retd	retired
RFA	Royal Fleet Auxillary
RFD	Reserve Forces Decoration
RINA	Royal Institution of Naval Architects
RMS	Royal Mail Ship
RN	Royal Navy
RNVR	Royal Navy Volunteer Reserve
RNZN	Royal New Zealand Navy
ROP	report of proceedings
ROV	remotely operated vehicle
R/T	radio telephony
Rtd	retired
SAG	Surface Action Group
SAP	semi-armour piercing
SAR	search and rescue
SBLT	Sub Lieutenant
SEACH	South Eastern Area Combined Headquarters
SFTS	Service Flying Training School
shp	shaft horsepower
SIGINT	Signals Intelligence
SIM	shipping intelligence message
SkL	Seekriegsleitung (German Naval War Staff)
SMN	Seaman
SMS	<i>Seine Majestäts Schiff</i> (His Majesty's Ship) – World War 1
SNOWA	Senior Naval Officer Western Australia

SP	signal publication
SPC-A	Sea Power Centre, Australia
SS	Steamship
SV	Survey Vessel
SWACH	South Western Area Combined Headquarters
SWPA	South West Pacific Area
TB	Torpedo Boat
TBS	talk between ships
TC	torpedo carriage
TMB	<i>Torpedomine B</i> – torpedo-launched ground mine, type B
TS	transmitting station
TT	torpedo tubes
UHF	ultra-high frequency
UKHO	United Kingdom Hydrographic Office
USS	United States Ship
UT	Universal Time
VADM	Vice Admiral
VAI	vessels in area indicated
VC	vertical compound
VDC	Volunteer Defence Corps
VHF	very high frequency
VS	visual signalling
W/A	Western Area Headquarters (Army)
WAMM	Western Australian Maritime Museum
WGCDR	Wing Commander
WIR	<i>Weekly Intelligence Report</i>
WO	Warrant Officer
WO-N	Warrant Officer of the Navy
WRANS	Women's Royal Australian Naval Service
WRENS	Women's Reserve Emergency Naval Service
W/T	wireless telegraphy
Z	Zulu time (Greenwich Mean Time)