Sunk by intrigue?

WITH reference to the wartime *sinking of HMAS Sydney* (Letters), after Dunkirk Britain was hard-pressed financially and lacked trained servicemen.

In July 1941, Japan landed 400,000 troops in French Indo-China and Churchill was anxious to involve the U.S. in the war on Britain's side as soon as possible.

On August 12, Churchill and Roosevelt met on a British warship and signed the *Atlantic* Agreement. They also set in motion a plan to provoke the Japanese into attacking American interests in the Pacific. British, Dutch, Chinese and Russian *agents provocateurs* were sent to Japan to ferment hatred against America and the West.

Churchill's deal with Roosevelt was that, in return for American assistance, Britain would lease military bases to the U.S., including ones in mainland Britain, for 99 years. It also provided that, after the war, Britain would grant independence to most of the countries in the Empire.

Australian Prime Minister Menzies was worried about the defence of his own country and constantly asked Churchill for the return of Australian servicemen

The Sydney: Lost with all hands

from the Middle East. To placate him, Churchill prepared a secret message saying he had no intention of defending any Far Eastern station apart from Singapore and hinting at the plan to bring the U.S. into the war.

The Axis powers could intercept radio messages so Churchill sent his communique to Menzies by hard copy, carried aboard *HMAS Sydney*.

On November 19, 19 days before the Japanese attack on Pearl Harbour, the Sydney was attacked by the German raider *Kormoran* in an action which may have included a Japanese submarine.

Messages from the engagement were picked up in Tanglin barracks, Singapore (where I was on duty with the signals section of the Manchester Regiment), and transmitted to London. The reply came back: 'Do nothing.'

As the Sydney was sinking, she was boarded by German officers who took away documents including Churchill's communique, which was later transferred to Japanese intelligence. Was it to eradicate Japanese involvement in the sinking that all crew members of the Sydney were killed and all wreckage collected and taken to Japan? After the war, a solitary, bullet-riddled lifebelt from the Sydney was found on a beach.

When the war ended, the Americans insisted on supplying the army of occupation in Japan, hampered British efforts to search for war criminals and tried to make sure neither British nor American citizens obtained reparations. Japan was set up as the only democratic country in Asia, a buffer against Russian and Chinese communism.

In Japan, there's a copy of an agreement signed by Churchill and Roosevelt indicating their intention of coercing Japan into attacking the Philippines.

ARTHUR LANE,
Stockport, Cheshire.

Daily Mail, Friday, June 5, 1998

Submission to the Joint Standing Committee on Foreign Affairs, Defence and Trade: Defence Sub-Committee

SUBMISSION No 135A

Inquiry into the circumstances of the sinking of HMAS Sydney

Review of evidence that the wreck of HSK Kormoran is at 28°39'S 113°22'E: Supplement to "Feasibility of the search for HMAS Sydney and HSK Kormoran: Oceanographic and Cognitive Issues"[1]

Kim Kirsner[2] & John Dunn[3]

[1] Kirsner, K., & Dunn, J. (1998). Feasibility of the search for HMAS Sydney and HSK Kormoran: Oceanographic and Cognitive Issues: Submission No 135 to the Inquiry into the Circumstances of the Sinking of HMAS Sydney. Canberra: The Parliament of the Commonwealth of Australia: Joint Standing Committee on Foreign Affairs, Defence and Trade: Defence Sub-Committee.

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INTRODUCTION

Summary

Whittaker and Knight have advanced the claim that the wreck of HSK Kormoran is at 28°39'S 113°22'E (Knight & Whittaker, 1998, Whittaker, 1998). Whittaker's oceanographic and archival analyses are based on the assumption that the remote sensing claims are true in regard to both the presence and identity of the target at the indicated site. As this assumption is not substantiated by independent evidence as to the capabilities of their remote sensing system, it should be set aside, leaving their oceanographic and archival analyses to stand or fall on their own terms.

The claim that the liferafts and debris covered the distance between 28°39'S 113°22'E and the discovery area near 24°S 111°E in the assumed time frame depends on extraordinary assumptions about current velocity, wind velocity and leeway.

Based on raw data provided by the CSIRO Department of Oceanography, we were able to estimate that the probability of observing current velocities of 0.84 knots or more in *any* direction for 10 *consecutive* days is 0.0001 or less, thereby vitiating Whittaker's central claim. Extensive evidence from several sources including direct measurement of card movements by Bye (1998) demonstrate that for anything other than 12-24 hour observation periods total current in November is approximately 0.2±0.1 knots / 350±20°, a value that includes wind driven current up to the level of the prevailing winds for the area in the vicinity of 26°S 111°E; that is, 15.5 knots / 180°.

However, Whittaker's analysis fails absolutely because he has not provided a reconstruction of the wind conditions for the site claimed by him; that is, 28°39'S 113°22'E. Instead he has relied on extrapolation from a reconstruction prepared for another site *more than 200 miles away*[4]. The wind velocities from the reconstruction are far in excess of both long-term wind velocities for the Abrolhos / Geraldton region (11.7 knots), and contemporary wind observations from a nearby shore station demonstrate that wind velocity was not excessive for the period of interest.

There is direct evidence, furthermore, that the velocities of the liferafts and the carley float were less than 1.0 knot despite the fact that they were subject to leeway as well as current.

And, finally, the survivors, the people on the spot, provided detailed information about wind force and lifeboat movements that Whittaker can only discard by assuming that Kormoran's navigator was an incompetent seaman, an assumption that is unsupported by him.

Whittaker's analysis of the archival material is predicated on the assumption that Detmers conspired to misrepresent the position of the battle. Whittaker supports this claim by arguing that Detmers' text betrays his guilt! It should be

[4] All distances are in nautical miles.

noted however that Whittaker actually uses Detmers' evidence when it suits his case, while setting it aside as misrepresentation when it produces evidence that is inconsistent with his case. And, finally, it may be noted that if the survivor's accounts about the relative positions of the ships at the moment of contact are to be believed, and Whittaker does not dispute them, Knight and Whittaker's analysis implies that HSK Kormoran was within two or three minutes of *accidental loss* on Noon reef in the Abrolhos Islands when her lookout detected HMAS Sydney beyond the lighthouse on North Island.

Whittaker's claim that the wreck of HSK Kormoran is at 28°39'S 113°22'E has no substance.

Overview

This report comprises a review of the evidence that the wreck of HSK Kormoran is at 28°39'S 113°22'E While the wreck of HMAS Sydney is the primary target for the HMAS Sydney Foundation Trust, the relative dearth of information about the specific location of that vessel provides a justification for focussing on questions about the location of HSK Kormoran[5].

This review has been motivated by the cost of an in-water search, and by the need to avoid both errors of omission - failing to search areas that should be searched - and errors of commission - searching areas that should not be searched. This review is directly concerned with the specific claim that HSK Kormoran is at 28°39'S 113°22'E.

Summary of arguments presented by Whittaker (1998)

According to Whittaker (Knight & Whittaker, 1998; Whittaker, 1998) the wreck of HSK is at 28°39'S 113°22'E. Whittaker bases his claim on evidence that:

1. KDLS technology discovered a modern wreck at 28°39'S 113°22'E and established that there were no modern wreck sites north of 27°S
2. The locations of the drifting debris are consistent with a target site 28°39'S 113°22'E whereas they are inconsistent with 26°S 111°E.
3. Detmers observed Aquitania on 23/11/1941 at a time that is consistent with the assumption that Detmers drifted from 28°39'S 113°22'E at 1.93 knots / 333° for 133 hours.
4. The interrogation and diary data which support 26°S 111°E is the product of a conspiracy by Detmers, and that the only credible survivor testimony involves, first, Detmers' reported observation of Aquitania and, second, an informal remark by an unnamed survivor about 'rowing toward a light on the shore'.
5. The oral history data from Port Gregory is consistent with target site 28°39'S 113°22'E and inconsistent with 26°S 111°E, the "popular" site.

This issues are dealt with in turn in the body of the text.

[5] See McCarthy (1997) for a similar argument.

1 KDLS TECHNOLOGY

The primary basis for the claim by Whittaker (1998) that HSK Kormoran lies at 28°39'S 113°22'E is the reported result of two survey flights during which the Knight Direct Location System Mk 4 (KDLS) was employed to detect the signatures of "modern wrecks". During aerial search of an area roughly south of 28°S latitude, three "wrecks" were located. Aerial search of a large area north of 28°S latitude, inclusive of most "popular" sites of the battle, failed to detect any "modern wrecks". From this, Whittaker concludes that neither HMAS Sydney nor HSK Kormoran are located in the northern search area and, instead, correspond to two of the wreck sites detected in the southern area. Specifically, it is suggested that HSK Kormoran lies at 28°39'S 113°22'E and HMAS Sydney lies at 29°59'S 112°48'E.

Crucial to this argument is the performance of the KDLS Mk 4. A detection device can be evaluated according to its sensitivity and its specificity. The sensitivity of a device corresponds to its capacity to detect a target when a target is present. No information is provided concerning the sensitivity of the KDLS other than a few anecdotal comments. Lack of sensitivity, either intrinsic to the device or because the target signal is inherently weak, will mean that a target will not be detected. Given uncertainty concerning the sensitivity of the KDLS, it cannot be safely concluded that the failure to detect a target north of 28°S latitude means that neither the Kormoran nor Sydney lie in that region.

The specificity of a device corresponds to its capacity to fail to respond to non-targets. For example, if a device signals the presence of a wreck yet the response of the system is caused by some other factor, such as mineral anomalies, then this represents a failure of specificity. Again, no information is provided concerning the specificity of the KDLS. Given such uncertainty, it cannot be safely concluded that the three signals detected in the southern region correspond to "modern wrecks". They may be caused by other factors. In summary, without detailed performance figures, it is impossible to evaluate the accuracy of the results of the KDLS.

Related to the issue of device specificity, is the claim that two of the signals detected south of 28°S latitude correspond to the wrecks of the Kormoran and the Sydney. Even if it is granted that the signals are due to "modern wrecks", there is no reason to regard either as being the Kormoran or Sydney. According to the Western Australian Maritime Shipwreck Database, there are 76 modern wrecks[6] offshore in the Geraldton-Abrolhos region, the location of only two of which are known with any certainty. Without additional argument, it cannot be

[6] That is, ships lost since 1900.

safely concluded that any of the "modern wrecks" detected by the KDLS is not one of these[7].

Finally, identification of the KDLS Target No. 3, detected at 28°39'S 113°22'E, as the Kormoran appears to be based upon the fact that of the three reported positions, it is most consistent with the distribution of drifting debris recovered over 300 miles to the north. It will be argued in the following sections that this distribution is not, in fact, consistent with it having originated at 28°39'S 113°22'E. Nevertheless, even if it had, the debris also includes objects from HMAS Sydney which Whittaker identifies with another target. No argument is provided for why the debris from the two ships were recovered in close proximity to each other, while the final resting places of their points of origin are separated by nearly 100 miles.

2 LOCATION OF THE DRIFTING DEBRIS

Whittaker claimed that the positions of the debris found during the search support the claim that the wreck of HSK Kormoran is at 28°39'S 113°22'E. This claim is predicated on specific assumptions about wind and current for a 300 mile vector defined by 28°39'S 113°22'E and c. 24°S 111°E. The critical assumptions are that mean current and mean wind for this vector were 0.84 knots / 333° and 21.7 knots / 333° for the period 19 - 27 November 1941, respectively. Are these values plausible?

2.1 Current

According to Whittaker (1998, p21), "A total of 0.84 knots for oceanic drift and wind driven current appears to be reasonable", and this value was adopted by him for all calculations[8]. Whittaker's estimate of total current was based on four more specific assumptions; first, that there is a wreck at 28°39'S 113°22'E, second, that the wreck at 28°39'S 113°22'E is HSK Kormoran, third, that Detmers' lifeboat drifted at 5% of wind speed without any contribution from oars, sails or sea anchor from ET0[9] to ET133, and fourth, wind speed averaged 21.7 knots / 153° knots between ET0 and ET133 for their track from 28°39'S 113°22'E to 24° 52'S 111°5'E. If any one of these assumptions is false, all of Whittaker's analyses can be discarded. How secure are these assumptions? The first and second assumptions are 'not proven', and their inclusion in the current and wind analyses creates a circular chain of reasoning. The evidence for the third assumption is fragmentary at best, as Detmers did not keep a diary describing this or any other part of the lifeboat's voyage. . The fourth assumption is discussed and rejected in the next section.

[7] Given the large number of shipwrecks in the area, it is surprising that the KDLS detected only three signals. This appears to raise a question concerning the reported sensitivity of the device.

[8] For convenience. Total Current = Oceanic Drift + Wind Driven Current

[9] Elapsed Time from 1800/19/11/1941.

Given the status of the assumptions identified above, is 0.84 knots / 333° a 'reasonable estimate' of total current?

(a) Total current in the region of 26°S 111°E

As Alan Pearce of the CSIRO Department of Oceanography noted during the 1991 forum,

> ""climatological' current data cannot be used with any confidence to predict the likely currents which may have curried debris from the HMAS Sydney away from the site of the engagement" (Pearce, 1991, p1).

There are two problems. The first of these is that direct measurements of current for the area show enormous variation from observation to observation. Figure 1 is a summary of individual observations from three sources. It includes data from two sources supplied by Pearce (1991), from the Surface Currents Data System and from the Dutch Marine Atlas, and some additional observations from the US Hydrographic Office chart. As depicted in Figure 1, current sets in almost every direction, and there is substantial variation in velocity as well. It should also be noted that all of these observations were based on either the ship-drift method or satellite-tracking of buoys, for 12-24 hours periods. These values are direct observations of total current; they are not pure measures of oceanic drift, and they therefore include wind driven current as well as oceanic drift. They are valid for the prevailing wind conditions for the region; that is, for 15.5 knots / 180° (Climatic Atlas of the Indian Ocean, see Courtney, 1991a, Figure 2).

The second problem concerns the rate of change of current direction and velocity. Thus, while a reading of 0.84 knots / 333° might be realistic for a 1-day reading, is it a realistic assumption for nine consecutive days, the number required by Whittaker's analysis.

We could use Figure 1, for example, to determine the probability of obtaining the current specified by Whittaker (1998); that is, 0.84 knots / 333°. Analysis of the data summarised in that figure suggests that this value would have been achieved on just three of the 73 occasions represented in Figure 1. Thus, based on these data, the probability of obtaining the value assumed by Whittaker is approximately one in 25 or 0.04 for a single day.

However, the observations shown in Figure 1 are based on 12-24 hour observations, and rate of change may be critical. Thus, given a current of 0.84 knots / 333° on 19 November, what is the probability that the same current would have been observed on 20 November, and 21 November, and so on? Is it reasonable to assume that current direction and velocity were stable ast 0.84 knots / 333° for nine consecutive days, from 19 November to 27 November?

For an answer to this question we turned to George Cresswell of the CSIRO Department of Oceanography. Cresswell indicated that current direction is sensitive to changes in salinity and temperature as well as wind, and suggested

that "one could expect dramatic open ocean current changes in a week"[10]. In addition, he provided us with several data sets each of which comprised between 20 and 60 daily observations of current velocity and current direction from the general area and period of interest. All of the observations involved satellite tracking and, as indicated, each set involved data from consecutive days.

Our analysis of Cresswell's data yielded the following results:

(a) 1-day readings: The 1-day analysis involved the entire set of 265 readings. For the purpose of this analysis we treated each observation as an independent record, and ignored direction entirely. Mean velocity for the set was 0.51±0.33 knots. Thus, if day-to-day variation in direction and velocity are ignored, a reading of 0.84 knots or more is a relatively frequent event, with P = 0.33 approximately. The probability of obtaining this velocity specifically on 333° is of course far less than 0.33, as discussed above.

(b) 10-day readings: The 10-day readings were drawn separately from each data sets using 10-day partitions that were already present in the data. This analysis yielded 28 readings. Each reading involved an estimate of the total drift vector for a separate 10 day period. The total drift vector is the distance between the starting position and the finishing position for the period regardless of the direction and velocity of the intermediate movements. If this distance was 50.4 miles, for example, mean velocity would be that value divided by time; that is, 50.4 / 240 hours or 0.21 knots. Although each 10-day reading involves a particular direction, the set included readings from many points of the compass[11].

These readings do not involve the mean of the velocities for the ten day period, but mean velocity between the starting point and the end point for each 10 day drift period. This analysis is therefore constrained by day-to-day variation in direction, although we have not restricted consideration to readings that involved 333° or any other direction. The velocity for a total drift vector would be 0.1 knots / 360° for example, if a buoy drifted at 1 knot / 360° on the odd days, and 0.9 knots /180° on the even days.

The mean for twenty-three 10-day observations that involved off-shelf samples was 0.36±0.16 knots. Thus, when the 10-day data is considered, a mean velocity of 0.84 knots is an extraordinary event. We can actually use these data as a basis for estimating the probability of observing a velocity of 0.84 knots *in any direction*. It is P < 0.01 or less than one in one hundred. Probability for a specific vector such as 333±10° will of course be far lower than that. The distributions for the 1-day and 10-day observations are depicted in Figure 2.

Figure 2 also includes the mean for fourteen 10-day observations that involved shelf samples. Nine of these observations were from Cresswell (1991) The mean

[10] Personal communication, 21 June, 1998.
[11] Two thirds of the readings involved currents setting to the northwest, north or northeast.

for this set was 0.18±0.14 knots. The velocity for shelf sites is even lower than it is for the region in general.

(b) Whittaker's claim that his estimate of total current is supported by Kirsner and Hughes (1993)

An alternative approach to the problem of variability is to determine mean total current based on observations from all sources. This approach involves no prior assumptions about the original sample, and its validity will increase with the sampling period; it might be a poor estimate for a single period of, say, 12 hours but its validity will increase with the duration of the period under consideration. Kirsner and Hughes (1993) adopted this approach and estimated mean total current for the region for November at 0.16 knots/ 6° using data from five sources[12].

Whittaker (1998) claimed that his estimate of total current, 0.84 knots, is similar to the summary supplied by Kirsner and Hughes (1993). We cannot understand the basis for this claim. All of the total current velocities noted by Kirsner and Hughes (1993) were between 0.12 and 0.37 knots, and ranged in direction from 340° to 68°. We are unable to verify an arithmetic that uses values in the range 0.12 - 0.37 to confirm a value of 0.84, a problem that is exacerbated when variation in direction is taken into account.

We are unable to verify Whittaker's claim that his estimate of total current is supported by Kirsner and Hughes (1993).

(c) Correction for wind driven current

Several of the analyses that have been developed to hindcast the positions of the wrecks have involved double counting (eg., Kirsner, 1991). The problem was originally brought to our attention by Ray Steedman in a personal communication to the first author[13]. The assumptions and analyses used subsequently by Fugro and the present authors are based on the solution provided by him.

The central problem is that there are no wind-free laboratories over the Indian Ocean. All of the published current data involve measurement of the movement of ships, buoys, or cards and, as these objects are in the water under typical weather conditions, their movements necessarily reflect typical wind values, in regard to both direction and velocity.

The scale of that contribution can also be assessed. It will reflect the long term wind patterns for an area. If the historic mean wind for an area is 15.5 knots / 180° (source), then it must be assumed that the total current measurement for that area includes 0.48 knots / 360° (set) from wind alone. It is of no consequence whether measured current is setting to the north or the south. Either way, it includes an 0.48 knot / 360° (set) contribution from wind driven current.

[12] Revised to 0.16 knots / 353° by Kirsner and Dunn (1998)
[13] Personal communication, June 14, 1992.

It is possible to use the argument developed above to estimate the impact of abnormal wind values on wind driven current. Suppose that total current is 0.20 knots / 360° (set) for a region where mean wind is known to be 15.5 knots / 180° (source). If observed wind for a particular period is 21.7 knots / 180° (source), the correction is equal to 3% of the *difference* between the historical and observed values. That is, 3% of 6.2 knots , or 0.19 knots / 360° (set). Total current in this example will therefore be 0.20 knots plus 0.19 knots, or 0.39 knots / 360° (set).

(d) The double counting problem

In a recent communication to the authors and to the Australian Maritime Safety Authority[14], Whittaker rejected the suggestion made by us that his procedure involved double counting[15]. Whittaker used "Figure 50" to support his claim (see Appendix 1). The critical element in Figure 50 is actually "Note a" rather than the figure itself. According to Whittaker,

> "The effect of wind drift (driven) current alone is illustrated in this diagram. To obtain the total drift, oceanic drift and leeway must be added".

Whittaker's procedure for deriving total current or "total drift" includes wind driven current twice.

- The first count involves vector AC in Figure 50, where this is calculated for the observed wind conditions for 19 - 27 November; that is, as 3% of 19.3 knots, or 0.58 knots / 356°
- The second count is embedded in the statement that this figure must be added to oceanic drift and leeway. Thus, the wind driven current of 0.58 knots / 356° is added to an oceanic drift value that already includes the effect of wind driven current for normal wind conditions. Whittaker's analysis would be valid if oceanic drift for the region had been measured in a wind-free research laboratory. But there are no wind-free laboratories over the Indian Ocean.

The problem is that all of the available measures of oceanic drift already include wind driven current up to the value of the prevailing winds, or 15.5 knots / 180° according to Courtney (1991a). The available estimates of total current are not pure estimates of oceanic drift. They involve direct measurements of the movement of objects in water, and, as all of these movements occurred in the open ocean, they reflect wind driven current as well as the influence of any forces not determined by wind; that is, 'pure' oceanic drift.

Total current must still be corrected for the difference between the long term and observed wind values of course, and this involves vector AD in Figure 50; that is, the effective difference between long term and observed wind values.

[14] email from Whittaker to Kirsner, 6 July 1998
[15] email from Kirsner to Whittaker, 7 April, 1998

Whittaker's analysis of wind driven current involves double counting, and should be set aside.

(e) Total current in the Abrolhos / Geraldton region

As emphasised above, for Whittaker's analysis to be valid, his assumptions must hold for the entire vector from 28°39'S 113°22'E to 24°S 111°E, not just the area near 26°S 111°E. It is important therefore to determine current values for the Abrolhos / Geraldton region as well as the region near 26°S 111°E. Are there any values for this region, and do they sustain Whittaker's claim?

Figure 3 depicts nine observations from moored buoys at mid-shelf sites near the Abrolhos Islands for November (from Cresswell, 1991). Each of the values shown was based on 240 hours of observation, and they therefore provide better estimates for the long drift periods that must be applied to the debris from Kormoran and Sydney than do the 1-day ship-drift and satellite tracking values.

The current data from the Abrolhos do not support Whittaker's claim. Mean total current for the individual observations shown in Figure 3 is approximately 0.16 knots / 349°, and the highest single observation for the area is less than 0.6 knots.

(f) Total current between the Abrolhos / Geraldton region and 26°S 111°E

Is it possible to estimate current for the area between the Abrolhos Islands and 26°S 111°E? The Dutch KNMI Marine Atlas for November provides some assistance. With consideration restricted to the square defined by 26°S-28°S and 112°-114°, for example, current sets at approximately 0.3 knots/180° (stability 0-25%); that is, *to the south*. The values for the adjacent 2-degree squares are also of interest. For the 2-degree squares to the west, north-west and north the current values were approximately 0.1 knots / 60° (stability 0-25%), 0.4 knots/350° (stability 25-50%) and 0.5 knots/170° (stability 25-50%), The partial square that included the Abrolhos Islands did not include any observations.

The current data for the region between 28°39'S 113°22'E and 24°S 111°E do not support Whittaker's claim.

(g) Total current for card released by Bye at 27°S 111°E

The above analyses support a simple conclusion; that total current is 0.2±0.1 knots / 350°±20° for the entire region. Is it possible to test this summary by reference to any other data associated with the topic of the Parliamentary Inquiry?

Independent confirmation that mean total current is approximately 0.2 knots / 350°±20° can be derived from an experiment conducted by John Bye (Bye, 1998). Bye released 943 cards at 27°S 111°E in October 1995 and recorded the dates when specific cards were recovered around the Indian Ocean. One card was discovered on the Cocos Islands after approximately eight months at sea. Bye estimated the velocity of this card at 0.25 knots.

The current data from Bye's card experiment is consistent with the conclusion that total current is 0.2±0.1 knots / 350°±20° for the region. It is inconsistent with Whittaker's analysis.

(h) Summary

In summary, while there is a small probability that current was running at 0.84 knots / 333° near 26°S 111°E on 19 November, 1941, the probability that these or any other values were sustained for nine consecutive days is a vanishingly small number. When interest is switched to the Abrolhos Island position claimed by Whittaker, and to the region between the Abrolhos Islands and 26°S 111°E, the published evidence provides even less support for the current velocities and directions required and assumed by Whittaker. And, finally, even if the reconstructed wind values are used instead of the long-term winds, the corrected total current using the observed total current values plus a correction for wind driven current yield velocities less than 0.4 knots.

Whittaker's assumption about current is not plausible.

2.2 Wind

Whittaker based his wind estimates on values supplied by Courtney (1991) and Southern (1991). Whittaker has therefore assumed that wind directions and velocities reconstructed for 26°S 111°E can be extrapolated to 28°39'S 113°22'E, *more than 200 miles away*. The extrapolation from a wind reconstruction prepared for 26°S to 111°' to 28°39'S 113°22'E is surprising, and Whittaker has not justified it. Courtney, for example, recommended that separate reconstructions should be made on a day by day basis during the planning phase of an in-water search[16], and his analysis assumed a drift vector of 120 rather than 300 miles[17].

(a) Wind in the region of 26°S 111°E - Climatic Atlas of the Indian Ocean

The long-term wind pattern for the 26°S 111°E region is 15.5 knots/180° (Climatic Atlas of the Indian Ocean, see Courtney, 1991a, Figure 2).

(b) Reconstructed wind for 26°S 111°E for 19 - 27 November 1941

The first author of the present paper invited Joe Courtney and Bob Southern of the WA Bureau of Meteorology to prepare a reconstruction of the wind for the period 19/11/1941 - 28/11/1941 for 26°S 111°E for the 1991 forum. The values provided by Joe Courtney were 17.5 knots / 165°, 14.5 knots / 150°, 17.5 knots / 165°, 24 knots / 165°, 26 knots / 155°, 19 knots / 155°, 24.5 knots / 180°, 17.5 knots / 190°, 13 knots / 240° and 17 knots / 190° for the requested dates, respectively (Courtney, 1991b).

(c) Wind observations from Kormoran survivors

Additional evidence about daily wind can be derived from the diaries of the men on the spot. Detmers' log includes wind information for 19 November, 1941, and it is probable that the values included in the diary were obtained

[16] Personal communication, 1991.
[17] From 28°39'S 113°22'E to 24°S 111°E.

from an expert working under the navigator, Kapitan Lieutenant Meyer. Diary data is also available for the following five days from von Malapert' diary[18]. von Malapert was a cipher expert who worked under Meyer on Kormoran, and who was in all probability keeping the record under Meyer's instructions on his lifeboat. It is probable therefore that the entire archival record about wind force should be attributed to Meyer, an ex-Merchant Navy officer with extensive pre-war experience. The wind observations from these sources are summarised in Figure 4 together with the recorded observations from Carnarvon / Shark Bay (combined) and Courtney's (1991) reconstruction.

Two points stand out in Figure 4. The first of these is that the three functions follow the same pattern of change for 19 - 24 November. This covariation provides strong support for the authenticity and reliability of the Detmers / von Malapert / Meyer evidence. The second point is that mean velocity for the Detmers / von Malapert / Meyer evidence is substantially lower than Courtney's reconstruction, even for the days when which they involved a similar position; that is, 19/11/1941 and 20/11/1941. It should be noted, furthermore, that the period of force 4 - 6 winds may have lasted for only 19 hours, from 1700/22/11 to 1200/23/11, and that they thought that they were sailing in force 2-4 winds for the first three days of their voyage, the period during which they sailed from 26°S 111°E to a position near the coast north of Carnarvon. The observations provided by Detmers / von Malapert / Meyer are close to the long-term mean, of 15.5 knots.

Whittaker rejects von Malapert's weather and voyage data. Whittaker's argument appears to be that the wind was so strong that the crew literally lost the plot, and drifted NNW in what were actually force 4 - 6 winds while they thought that they were sailing ENE in force 2 - 4 winds. Whittaker's claim that von Malapert and Meyer could not distinguish force 2 - 4 winds from force 4 - 6 winds must be discarded in the absence of independent evidence that they were incompetent seamen. Finally, as Meyer's boat made most of its easterly heading before 1700 on 22 November, when von Malapert indicated that the wind strengthened, there is no reason to assume that the lifeboat was forced onto a NNW course without the knowledge of the occupants.

Kirsner (1991, Figure 3) demonstrated that performances for the lifeboats captained by Detmers, Meyer, Kuhl and von Gosseln were similar. In particular, detailed analysis of the movements of the boats that sailed toward the coast after ET133 shows that their performances were similar to that of Meyer's lifeboat. Each of these boats as well as Meyer's was able to maintain a course of approximately 100° off the wind (using day-by-day reconstructions based on Courtney, 1991), and wind velocity was similar for the two periods of primary interest, 20-22 November (ie. mean wind = 18.6 knots for Meyer's lifeboat, and 25-27 November (ie. mean wind = 20.3 knots for Detmers', von Gosseln's and Kuhl's lifeboats).

[18] von Malapert

Finally, von Malapert's description of his voyage receives direct and explicit support from the record of interrogation of Meyer. According to Meyer (28/11/1941),

> "Five boats and two rubber rafts left K. Cruiser had steamed away and disappeared and he had sailed his boat 150 miles N Easterly to land. He thought Capt Detmers was in another boat. One raft had broken up and sunk"[19]

In summary, von Malapert's diary must be treated as a valid record in the absence of evidence that Meyer was an incompetent seaman. That record is inconsistent with Whittaker's claims, and confirms that Meyer's lifeboat reached the coast in two stages. As reconstructed by Fugro (1997), the first stage involved an ENE track that brought the lifeboat to within 20 miles of Dirk Hartog Island. The second stage involved a NNE track and brought them to the coast north of Carnarvon. Von Malapert's analysis is corroborated by Meyer. If Meyer's lifeboat had started its voyage from 28°39'S 113°22'E on 20 November, it would have sighted land near Port Gregory on 21 November 1941.

(d) Wind in the Geraldton / Abrolhos region - Climatic Atlas of the Indian Ocean

The long-term wind reading for the Geraldton / Abrolhos region is 11.7 knots / 180° (Climatic Atlas of the Indian Ocean, see Courtney, 1991a, Figure 2).

(e) Wind observations from shore stations

According to Whittaker (1998, p21),

> ".... drifting items and lifeboats would have been within 60 miles of the coast until they reached 25°30'S[20]. In these circumstances, the use of weather data recorded at shore stations is justified"[21].

What, then, were the wind conditions at Geraldton between 19 November and 27 November?

Courtney (1991a) provided the daily wind readings for Geraldton for the period 19 - 27 November 1941, and these readings are shown in Figure 5 together with the long term readings for the Abrolhos / Geraldton region, and the values adopted by Whittaker (1998) for the same region based on extrapolation from Courtney's (1991) reconstruction for 26°S 111°E. The coastal readings are generally far lower than the reconstructed wind values. As recorded at Geraldton, Shark Bay, Hamelin Pool and Wooramel, the mean wind

[19] Meyer

[20] According to Whittaker's account, the objects were within 60 miles of the coast from Port Gregory to Dirk Hartog Island.

[21] The reconstructions prepared by Courtney (1991) and Southern (1991) are not the weather observations from shore stations; they are reconstructions based for 26°S 111°E based on the synoptic chart and high level winds from shore stations.

velocities were 8.6, 9.2, 2.5, 5.8 and 8.8 knots for the period 18 - 27 November, respectively[22].

As shown in Figure 5, the long-term readings and the daily readings for the Geraldton / Abrolhos region are similar, and far less than the values assumed by Whittaker on the basis of extrapolation from 26°S 111°E. In fact, they are barely 50% of the readings used by Whittaker, and they do not even justify use of a correction for wind driven current. For the purpose of leeway calculations, the long-term and daily values are identical. By way of illustration, they support leeway values of 0.82 knots for the liferafts (ie. 7% of 11.7 knots) and 0.35 knots for a lifebelt (ie. 3% of 11.7 knots). Given these leeway velocities and a total current of 0.2 knots, the recovery positions near 24°S 111°E would have been 12 and 23 days away for the liferafts and the lifebelts, respectively. The liferafts were actually discovered near 24°S after 3 - 5 days, and the lifebelts and other debris reached that latitude after 8 - 9 days.

Based on the wind readings from the shore stations, Whittaker's claim that the objects discovered near 24°S 111°E originated from 28°39'S 113°22'E is not plausible.

(f) Summary

The wind data from the Geraldton / Abrolhos region provide no support for Whittaker's assumptions about wind, and they render implausible his claim that the objects from Kormoran originated from 28°39'S 113°22'E. Whittaker's claims are nullified by the absence of an independent wind reconstruction for the Abrolhos / Geraldton region for 19 - 27 November 1941. Any further development of the claim that the wrecks lie south of 28°S must be based on an independent wind reconstruction for that region.

2.3 Current and wind

The liferafts and carley floats would have been subject to leeway as well as oceanic drift and wind driven current. Does the Sydney / Kormoran archive include any direct evidence about the velocity of these objects?

(a) Liferafts discovered by Aquitania on 23/11/9141 and Trocas on 24/11/1941

Following Hardstaff (1997), we accept that the correct coordinates for the liferaft discovered by Trocas was in error by one degree of longitude, and should be 24 06'S 110°40'E. This change provides established positions for two objects which share their point of origin and leeway values, and they therefore provide the most appropriate standard for *estimating* velocity for that class of objects.

The relative positions of the liferafts discovered by Aquitania and Trocas at ET86 and ET117 respectively provide a direct measure of the velocity of these objects through the water. The distance between the positions is 32 miles on a

[22] These are mean velocities, without reference to direction

bearing of approximately 340°, a distance that was covered in 33 hours, giving a mean velocity for the liferafts of 0.97 knots. This value should be compared with the 3.28 knots claimed by Whittaker for the liferaft discovered by Aquitania.

The liferaft discovery data are inconsistent with Whittaker's claim.

(b) Carley raft discovered near Christmas Island on February 29, 1942

The carley raft discovered near Christmas Island on February 29, 1942 covered approximately 1000 miles[23] in 80 days. Mean velocity for this object was therefore approximately 0.58 knots, depending on assumed point of origin. While the duration obviously involves many synoptic cycles, the fact that mean velocity for this object is actually lower than that advanced by Whittaker *for current alone* further compromises his claim that current was 0.84 knots. For example, if current was 0.84 knots and leeway was 0.62 knots, a figure that reflects only the typical wind values for 26°S 111°E (ie. 4% of 15.5 knots wind), why did the carley raft move at only 0.58 knots?

The movement of the carley raft is inconsistent with Whittaker's claim.

(c) Quantitative evaluation of Whittaker's claim

To facilitate evaluation of our analysis (Kirsner & Dunn, 1998a), and to explore alternative models, we have developed a quantitative model of the forces that influence the movement of objects in the water. The model uses the solver tool in Microsoft Excel[24]. The model enables users to select values for each force, and then explore the impact of these assumptions on predicted point of origin for each object. The model also provides an estimate of goodness of fit.

Figure 6 depicts the outcome when the model adopts Whittaker's values; that is, 0.84 knots / 333° for total current, 21.7 knots / 153° for wind, and the Australian Maritime Safety Authority values for leeway. As depicted in that figure, the debris is located near to Whittaker's target (ie. 28°39'S 113°22'E)[25]. But the liferafts are 50 - 100 miles to the north-west. It should be noted, furthermore, that this mismatch is not dispersion along the drift track; rather, it reflects a systematic departure from the Australian Maritime Safety Authority assumptions for leeway for liferafts.

Our model provides us with other options. For example, we could *increase* wind velocity for example, and observe the impact of this change on the objects. This manipulation moves the lifeboat and debris nearly 100 miles to the south of [illegible]. Another option is to estimate the leeway values required to bring the lifeboat and debris to 28°39'S 113°22'E. The value for the liferaft recovered by Aquitania is actually 12% of wind, a very substantial increase on the AMSA and US Coast Guard estimate, of 7% of wind. Perhaps some of this can be explained by the

[23] Depending on assumptions about its point of origin.

[24] Interested persons should contact Dr John Dunn for a copy of the application (08-9346-2251 or email: jdunn@cyllene.uwa.edu.au)

[25] Detmers lifeboat must be there by definition; it is not a prediction.

use of what Whittaker (1998) refers to as a "makeshift sail". But it should be noted that the makeshift sail on the liferaft actually consisted of the crew's jackets, and that the cabin boy who described the liferaft on 23 November (Winter, 1981, p145) did so in the following terms,

> Just before 0600 on Sunday 23 November, a cabin boy on the liner transport Aquitania saw a *low-lying raft* (italics supplied) bobbing on the pearly morning sea. The 26 men on the poorly equipped raft has seen her long ago, and were waiting anxiously for a sign that they had been noticed. *Although they had taken off their jackets to improvise a sail* (italics supplied), they were largely at the mercy of wind and currents, which were dragging them too far north (p145).. It was nearly two hours before Aquitania had them safely on board, at ...."

But even if we adopt Whittaker's assumption, and assume that an unknown number of "jackets" attached to one or more unknown devices[26] increased the velocity of this raft by 1.0 knot, how then do we explain the excessive velocity enjoyed by the liferaft recovered by Trocas? These values and descriptions cannot be reconciled with the accepted leeway values for objects of this type.

The simulation data are inconsistent with Whittaker's claim. The disparity between the observed and expected positions of objects of different types can only be resolved by assuming that the Australian Maritime Safety Authority leeway values for liferafts are in error by 50 - 100%. The onus is on Whittaker to prove this claim.

2.4 Conclusions

We are aware of nine papers that use oceanographic and/or Search and Rescue procedures to reconstruct the positions of HSK Kormoran and HMAS Sydney. Eight of these papers specified total current by methods that are *independent* of the author's assumptions or beliefs, if any, about the point of origin of the objects (Hardstaff, 1997; Hughes, 1991; Kirsner, 1991; Kirsner & Hughes, 1993; McDonald, 1991, 1997: Laffer, 1991; Steedman & McCormack, 1991). It is a significant feature of Whittaker's paper that it does not use an *independent* estimate of total current.

The published current and wind data provide no support for Whittaker's claims. The validity of his claim rests on extrapolation of a wind reconstruction prepared for 26°S 111°E to 28°39'S 113°22'E, over a distance of 300 miles. The available wind data for the Abrolhos Islands suggests that the winds were normal for November for that region, at about 8 - 14 knots for most of the period of interest. There is no case for correcting total current where this was probably about 0.2 knots rather than the 0.84 knots claimed by Whittaker.

3 WHITTAKER'S CLAIM THAT DETMERS' OBSERVED AQUITANIA AT 1200/23/11/1941

[26] Oars perhaps, but, if so, how were they held up?

According to Whittaker (1998), Detmers saw Aquitania at 1200 on 23 November. This assumption is conjectural. According to Detmers (1957, p194)[27],

> On Tuesday there wasn't a cloud in the sky and the weather was terribly hot. Even our buttons seemed to be letting us down. We had very little water left now, and what we had we used to wet our lips, no more. Spirits were getting low too. Then *that morning* (italics supplied) we sighted a white steamer with no less than four funnels. The men wanted to fire rocket signals, but I forbade it. I had immediately recognised the vessel as an auxiliary cruiser. As I discovered later, it was the Aquitania, and she continued her course at a distance of about five miles without her look-out having spotted us" (Detmers, 1957, p194).

Whittaker uses his claim that Detmers' observed Aquitania at 1200 on 23 November as evidence that mean velocity for Detmers' lifeboat was 1.93 knots, and, subsequently, that total current was 0.84 knots. But there is no evidence that Detmers observed Aquitania at this precise time.

Does Detmers' observation of Aquitania adjudicate between the various positions submitted to the Parliamentary Inquiry? We have identified eight separate specifications of the site of the battle:

- 28°39'S 113°22'E (Knight & Whittaker, 1998)
- 28°S 113°30'E (Bye, 1997; G. McDonald, 1998)
- 26°30'S 111°30'E (Hughes, 1991, see Kirsner & Dunn, 1998)
- 26°40'S 110°40'E (Steedman & McCormack, 1991, see Kirsner & Dunn, 1998)
- 26°20'S 111°42'E (Fugro, 1997)
- 26°20'S 112°25'E (E. McDonald, 1998)
- 26°39'S 111°42'E (Hardstaff, 1998)
- 26°15'S 111°E (Kirsner & Dunn, 1998)

These positions are depicted in Figure 7, together with Aquitania's known track from to 1200 on 12 November (after which it may or may not have diverted toward Gage Roads)[28], the position where Detmers' liferaft was sighted by a Search and Rescue aircraft, and the direct drift routes from each site to that position. Assuming that the lifeboat drifted at a constant rate from each of the eight provisional points of origin, it is possible to prepare a plot showing mean position for each track as a function of Elapsed Time from 1800 on 19 November.

Figure 8 shows the results of our analyses. The figure shows that Whittaker's claim is *possible*, but only just. If Aquitania actually stopped for two hours

[27] Detmers' interrogation notes and diary also mention the morning but fail to provide a precise time.

[28] It was not until noon (local time) that Captain Gibbons read the results of the interrogation of the prisoners and realised that there had been an action (MP1587/1 164)

rather than 45 minutes (see Winter, 1981, p145), Detmers would have seen Aquitania during the afternoon, and Whittaker's claim would be falsified.

More significantly, Figure 8 shows that the tracks from all of the recommended sites actually passed through positions that were within 25 miles of Aquitania during the morning, at about 1000 for the six northern points of origin, and at about 1200 for the two southern points. Twenty-five miles rather than visual distance is used as a benchmark because drifting lifeboats are known to diverge from wind by up to 35°[29].

In summary, Figure 8 demonstrates that Detmers' observation of Aquitania does not adjudicate between Whittaker's theory and any other theory about the position of the battle, and that it cannot be used to confirm or disconfirm Whittaker's assumptions about the velocity of Detmers' lifeboat or total current.

The reason why Detmers' observation cannot be used to adjudicate between competing estimates of total current, or any other variable is that we do not know the *precise* time when Detmers' observed Aquitania. Detmers could have sighted Aquitania at the time claimed by Whittaker but he could have sighted it several hours earlier as well, and each hour makes a substantial difference to the estimated velocity of Detmers' lifeboat.

In conclusion, Whittaker's assumption about current involves a circular argument which relies on the truth of the point that he is trying to prove, and a value that is confirmed by an unsubstantiated assumption about the precise time at which Detmers observed Aquitania. Whittaker's claim that Detmers observation confirms his estimate of the velocity of Detmers' lifeboat is invalid.

It should be noted that the movements of the lifeboats could have been moderated by oars, sails and sea anchors, and their movements cannot therefore be used to estimate the velocity of physical variables.

4 EVIDENCE FROM KORMORAN SURVIVORS

There is no empirical support for the assumption that the objects from HSK Kormoran drifted from 28°39'S 113°22'E to the positions where they were discovered or recovered between ET84 and ET209. What is the archival support for Whittaker's claim?

4.1 Evidence that Kormoran survivors conspired to conceal an illegal act

Whittaker dismissed the interrogation data which identified 26°S 111°E as the general position of the battle on the grounds that Detmers instructed the crew to misrepresent the location of the battle in order to conceal an illegal act. Whittaker based this claim on the detection of hidden meanings in Detmers

[29] According to the AMSA model, lifeboats and liferafts do not drift directly down-wind, but tend to diverge to left or right by 35 or more degrees.

book (Detmers, 1957). According to Whittaker, Detmers made three statements which indicate that he was frightened of being treated as a war criminal, statements which demonstrate that he was guilty of a war crime. Whittaker goes on to say,

> "If he (Detmers) had not breached the Geneva Convention, why would he be afraid?" (Whittaker, 1998, p8).

The psychological basis of Whittaker's claim is insecure; we know of no evidence that would support the validity or reliability of 'textual psychoanalysis' of this type. But Whittaker's interpretation of Detmers' statements is insecure for another and more tangible reason. Detmers had *valid* reasons for believing that the British authorities might treat Q-ship captains partially. On 19 August, 1915 neutral (American) eyewitnesses observed the crew of a British Q-ship shooting unarmed U-boat survivors, an alleged atrocity that was suppressed by British authorities until 1985 (Coles, 1986). Owing to reports in the American and German press, furthermore, it must be assumed that Detmers knew about the episode, and that he therefore had valid grounds for doubting the impartiality of British authorities. The Captain of the Q-ship received a DSO at Buckingham Palace some seven weeks after the episode[30].

Thus, if the British authorities were prepared to overlook an *alleged* war crime by a RN captain in the presence of independent evidence, why would they worry about the absence of evidence if it was expedient to prosecute an astonishingly successful German raider captain?

It should also be noted that many Kormoran survivors simply refused to answer questions about the position of the battle, and many other matters, a far simpler and therefore safer approach to concealment than a detailed but false story. Karl Will, for example, a Quartermaster who worked in the navigation section under Meyer, stated that

> "(He) Will not tell the position before the fight".[31]

There is no *evidence* that Detmers conspired with his crew to misrepresent the position of the battle.

4.2 'Rowed towards a light on the shore'

Whittaker treats one statement by an unnamed survivor as critical. The statement, "Rowed towards a light on the shore", is used as evidence that the battle occurred near the Abrolhos Island, the explicit assumption being that the survivor was in a boat that rowed towards the lighthouse on North Island. Perhaps the unnamed survivor who claimed that he had seen a light was suffering from stress following the battle? Perhaps the huge explosion on Kormoran confused him? Perhaps Captain Airey's brandy excited him and he just decided to 'stick to his story' the following day. Perhaps the light that he

[30] The truth or otherwise of the allegations is not the issue. The point is that Detmers knew about the allegation and had no reason to doubt it.
[31] Will

claimed that he seen came from one of the other lifeboats, for it is clear from Winter's account of the first night after the battle that the lifeboats tried to keep together, and that at least one lifeboat had a light?

The precise quotation from Michael Montgomery (1981, p21) is hard to resist. According to Michael,

> "With the encouragement of some of Captain Airey's brandy, he then added the following qualification: 'We were rowing towards the cruiser hoping to be picked up when Whoosh! Bang! (he threw up his hands to emphasise the magnitude of the explosion) it blew up. We then rowed towards a light on the shore.' When the Koolinda berthed ..... the man repeated this statement in front of Mr E Cumming, the local agent for the State Shipping Service".

Perhaps, despite the disclaimer, the light was actually from the fire on HMAS Sydney. For example, Wilhelm Weil, a Kormoran survivor, stated that

> "(He) Did not see Cruiser until after fight, as a light on the horizon".[32]

Weil was also on Koolinda and he was therefore in the same lifeboat as the unnamed survivor interviewed by Captain Airey.

But why treat 'rowed towards a light on the shore' as valid while treating reports from several Kormoran survivors that they were '120 miles from the coast' as invalid? The only clear distinction appears to involve the specific claim that one can be used to support the Abrolhos Island site, while the other is evidence against the Abrolhos site. The argument appears to be that the latter might have been used deliberately to mislead, whereas the former was made incidentally, while under 'the influence'!. Essentially the same problem applies to the detection of guilt in Detmers' account. The criteria for distinguishing true and false statements appear to involve reference to the point that Whittaker is trying to prove; Detmers is being honest when his evidence is consistent with Knight and Whittaker's claims, but he is lying when his statements cannot be reconciled with their claim.

There is no reason to single out one report and ignore dozens of other reports by the survivors about the position of the battle.

4.3 Eyewitness testimony involving complex events

The HMAS Sydney archives comprise an extraordinarily rich and complex database. Overall, there is material from hundreds of interviews. Many of them are short, involving just four or five points and less than 100 words. But others are long and complex, and involve dozens of points about every aspect of HSK Kormoran's voyage. It is clear, furthermore, that each and every eyewitness had a unique vantage point, of the voyage, and of the battle with HMAS Sydney.

[32] Weil

It is our contention that such a database can only be treated as a whole, where reality is explored and tested by contact with, and analysis of, the entire body of evidence. By taking isolated reports out of context, and ignoring everything else, it is possible to find evidence for almost anything. Consider the question of a ruse for example. Did Detmers use an illegal ruse to attract HMAS Sydney? According to Edwin Naumann, for example,

> "Saw Cruiser 'Sydney' approach. He was ordered to abandon ship shortly after. ...".[33]

This report could be used to support the inference that HSK Kormoran followed the Q-ship ruse used by the RN in World War I, where a panic party abandoned ship in order to deceive submarine captains, and draw them in to a distance where they could be attacked with confidence.

But according to Johan Wolfsburger, a survivor from the same lifeboat,

> "As to the Sydney fight - we went ahead 'Alarm Stations', I was sent to my No. 3 Gun - cruiser overtook them - much return fire - Cruiser was seen after being hit to be lower in the water - they were themselves on fire - a little later received the order 'All men to the boats' - we could not understand this as our ship seemed to be all right still. ...",

This statement includes the same basic fact as the previous one, that the crew were ordered to abandon HSK Kormoran before all of them were aware of the extent of the damage to her. However it includes additional information, information which is inconsistent with the claim that HSK Kormoran's success depended on the use of a ruse..

4.4 The positions of the ships on contact

Some aspects of the account advanced by Knight and Whittaker (1998) and Whittaker (1998) are so challenging that they can only be accepted by rejecting every single report provided by the survivors. Consider the position specified by Knight and Whittaker for the wreck of Kormoran for example. While there are minor discrepancies about the relative positions of Kormoran and Sydney at the moment of contact, the basic description is straightforward, and has no obvious bearing on the ruse or the positions of the wrecks.. It is that Sydney was first sighted at a distance of approximately 15 miles on a bearing of 0° - 25° at about 1600, *in broad daylight*. Furthermore, according to virtually every account, Kormoran then turned toward the west and steamed on 260° / 250° for about 90 minutes at 11-14 knots.

A simple reconstruction of these movements based on Knight and Whittaker's claim that HSK Kormoran is at 28°39'S 113°22'E surely poses a problem for their account. Our rough reconstruction puts Kormoran a mile or two to the south of Evening Reef, within sight of the lighthouse on North Island, and, as she was steering 25°[34], within a mile or two of accidental loss on Noon Reef, a

[33] Naumann

[34] Based on Detmers and others.

most interesting condition for a raider that had carefully avoided observation by enemy forces for nearly a year.

But HMAS Sydney herself was also in danger of accidental loss, on the North East Reef off the east coast of the Wallabi group of the Abrolhos Islands, and her approach to Kormoran would surely have been delayed by the need to pass to the north or south of the Wallabi, a delay that Kormoran would surely have put to good use.

4.5 Distance between wrecks of HSK Kormoran and HMAS Sydney

According to Knight and Whittaker (1998) the positions for HSK Kormoran and HMAS Sydney are 28°39'S 113°22'E and 29°59'S 112°48'E respectively. These positions are approximately 95 miles apart, a distance which demands explanation or comment. How did HMAS Sydney move that far after the battle without making a signal and without leaving any survivors?

For an expert opinion on this vexing question we consulted a senior Australian naval officer, an engineering specialist with extensive seagoing experience including wartime service during which his ship suffered severe battle damage. Rear Admiral Holthouse AO RAN (Rtd) commented on a similar issue at a recent hearing before the Parliamentary Inquiry. According to Rear Admiral David Holthouse[35],

> "Of course a ship might have reached the claimed location in the time available, if she still had power which, in SYDNEY's case means both steam and at least one main engine, as well as at least one shaft. However for steam to have been available and the main turbines to have continued to operate for as long as is claimed, there would have to have been human intervention.
>
> If there had been surviving engine and boiler room watchkeepers for so long, there must surely also have been officers and sailors alive elsewhere on board as well, including technical experts. I find it impossible to believe that the capability for emergency radio transmission could not have been achieved and signals sent.
>
> "Moreover I would find it very hard not to believe that in these circumstances where the survivors had presumably been trying to deal with fire and flood for this long period, that the inevitability of eventual loss of the ship would have become so apparent to the surviving command team that an orderly move to abandon ship would have been made."

Another approach involves the use of eyewitness testimony to estimate approach and separation rates for HMAS Sydney prior to and following the battle. Figure 9 is a summary of the eyewitness accounts for rate of separation following the battle. Each point represents one or more reports for a 15 minute period after 1730/19/11/1941. Inclusion was restricted to cases where the

[35] Personal communication, 23 April 1998.

observer specifically mentioned both time and distance. The critical feature is that the pattern of data suggests a declining rate of separation after the battle, as if Sydney was losing or had lost power. These data should of course be treated as suggestive rather than definitive, as the problems associated with diminishing visibility, disembarkation, and the fires on Sydney would have impeded accurate estimation.

5 EVIDENCE FROM PORT GREGORY EYEWITNESSES

Whittaker (1998, p9) introduced the possibility that the oral history data from Port Gregory is a fabrication. We do not understand why he has introduced this possibility. It is unnecessary and irrelevant. Human memory for detail declines rapidly over hours or even minutes. Reconstruction is present even during perception, and plays an increasing role as the original details are lost.

It is our view that analysis of the eyewitness reports from Port Gregory have been treated literally when the length of the interval between the original event and the recording sessions, and the lack of independence among the witnesses during the early months and years after knowledge of the event became widespread, suggest that a less literal approach might have been more appropriate. Whittaker (1998) for example, has used the reports to support a position that is 40 miles away from that defined by Bye (1997), and on the other side of the Abrolhos Islands. What constraints, if any, do the eyewitness reports place on the position of the battle?

The first and critical question concerns the nature of the event that triggered the reports. One possibility is that the trigger involved an independent incident now lost to us. A second possibility is that that the reports were triggered by the passage of Uco on the inshore route at about 0400/20/11/1941[36].A third and more interesting possibility is that the reports were triggered by reflection of light from high level cloud from the battle or from the 1000' column of flame that marked the end of Kormoran[37]. A recent report by John Cramb of the WA Bureau of Meteorology suggests that there may have been as much as 5/10 - 6/10 high level cloud (ie. >8500') in the Geraldton sky on November 19 - 20, although the position with regard to the night is unclear. These data require further work, but they introduce the possibility that the trigger actually involved light propagation from the vicinity of 26°S 111°E. A fourth possibility is that the reports were triggered by light propagation involving low level cloud from a source in the Port Gregory area.

6 CONCLUSION

[36] Described by Winter in the following terms, "She had not been on fire; she always smoked like that" (p154).
[37] Detmers (1957, p xxx)

In conclusion, on the basis of the existing evidence there is no case for conducting a search for HSK Kormoran at 28°39'S 113°22'E. Further claims that a search is required at this site must include an *independent* reconstruction of the wind for the Abrolhos / Geraldton region.

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Figure 1

Current: Frequency as a function of velocity and direction for the 26°S 111°E region

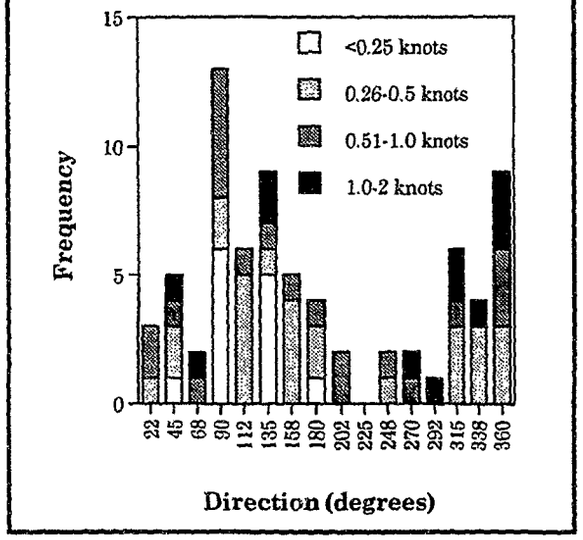


Figure 2

Current velocity: Distributions for 1-day and 10-day observations (regardless of direction)

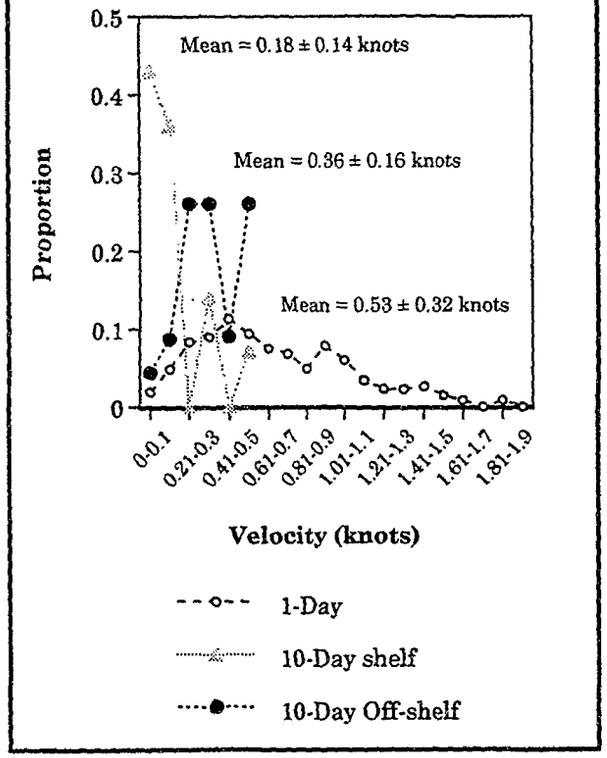


Figure 3

Current: Frequency as a function of velocity and direction for mid-shelf sites near the Abrolhos

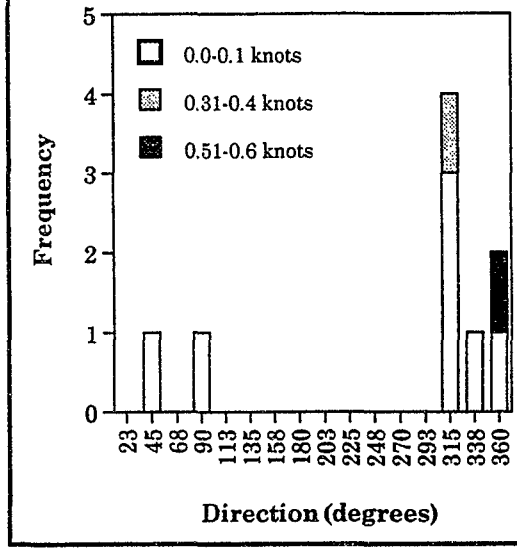


Figure 4

Wind velocity for Carnarvon/Shark Bay region, Detmers/Malapert and Courtney

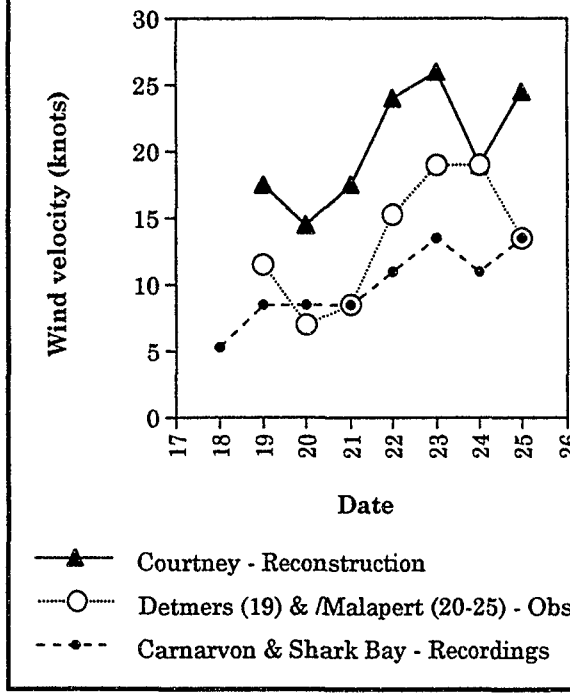


Figure 5

Wind velocity for Geraldton / Abrolhos region

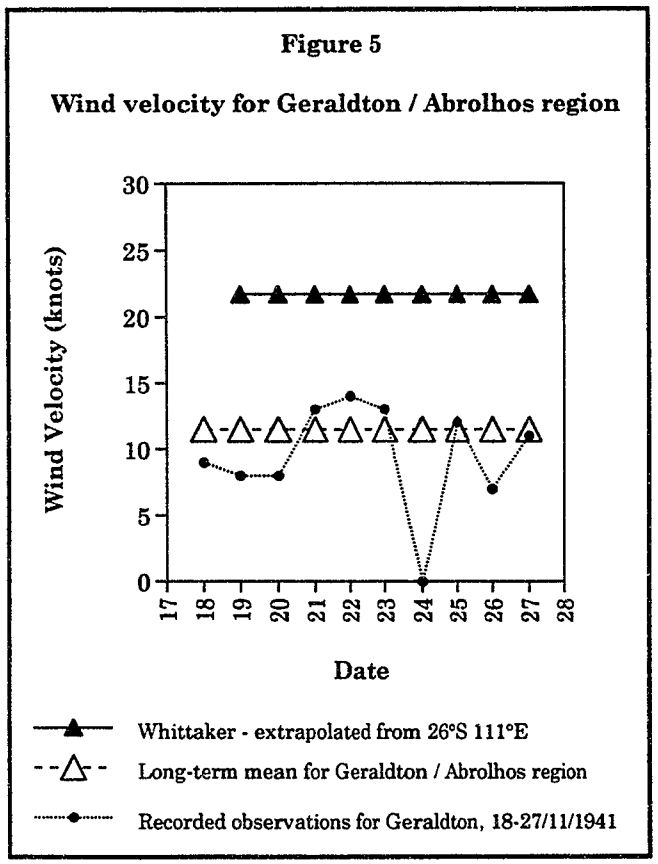


Figure 6

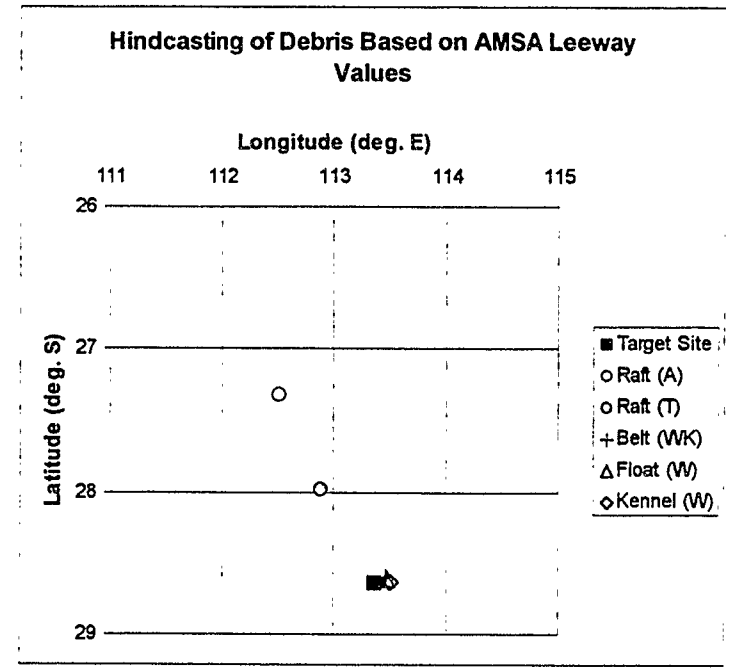


Figure 7

Eight sites identified in submissions to the Parliamentary Inquiry

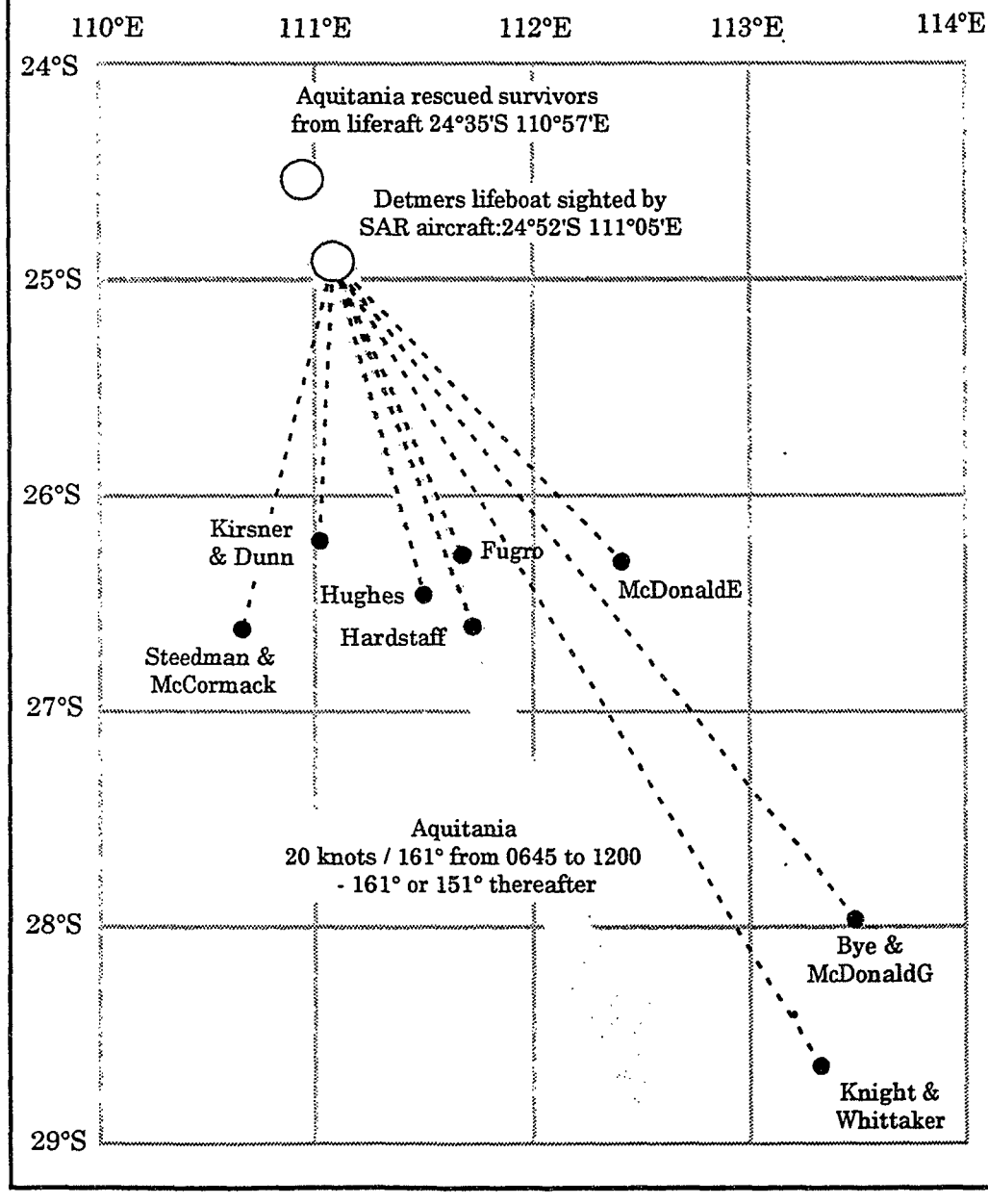


Figure 8

Distance between Detmers' lifeboat and Aquitania as a function of time for eight models

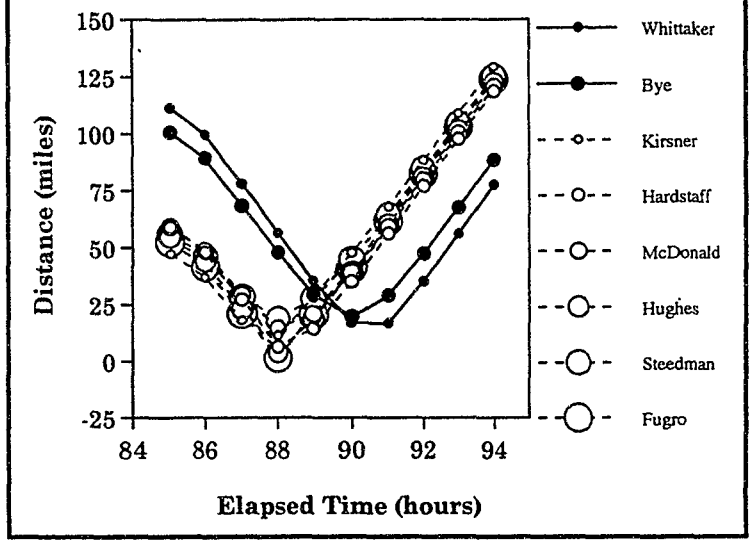
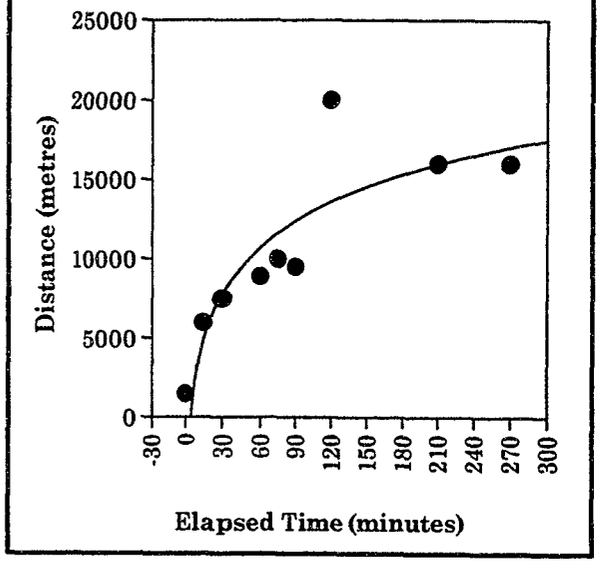


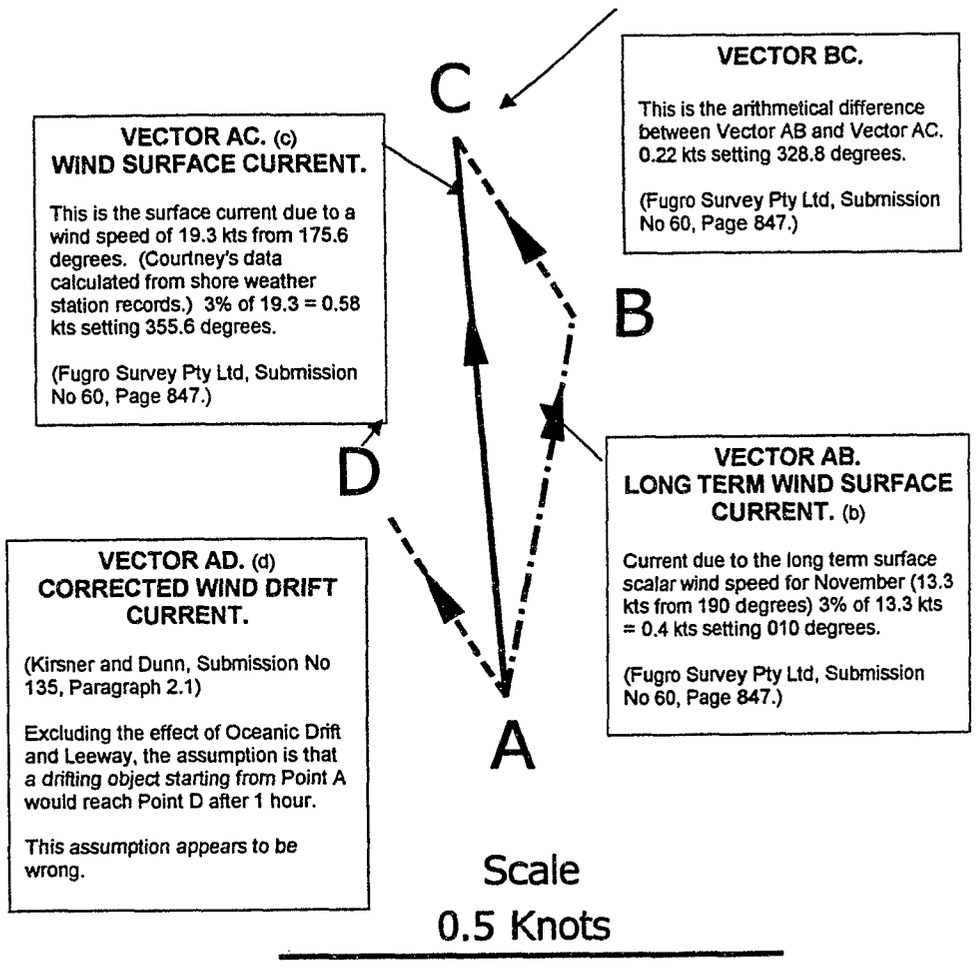
Figure 9

Distance between Kormoran and Sydney as function of Elapsed Time from 1730/19/11/1941



Appendix 1

WIND DRIFT CURRENT (a)



NOTES:

a. The effect of wind drift current alone is illustrated in this diagram. To obtain the total drift, oceanic drift and leeway have to be added.

b. **Vector AB** is derived from historical data taken from the US Navy Marine Climatic Atlas, 1976 and may contain a element of oceanic drift as well wind driven current. The wind speeds recorded in the Atlas are the mean of a large number of observations over a number of years. Vector AB is not a measurement of the conditions existing between 19 and 28 November 1941. In the absence of records made at the time, this data would be the best available. As we have records made at the time (Vector AC), it would appear that the historical winds contribute nothing.

c. **Vector AC** is the wind driven current derived from shore weather station records made at the time. There is no double counting involved. The weather station records show strong winds from the South East up to 25 November, moderating and becoming southerly after that date. Evidence of the Kormoran's survivors and the diary of a Shark Bay Fisherman are in agreement with the records. Under these wind conditions, excluding the effect of oceanic drift and leeway, **a drift object starting from Point A would travel to Point B in one hour.** Historical winds would appear to have nothing to do with this result.

d. **Vector BC** is the arithmetical difference between Vector AB and Vector AC.

e. **Vector AD** is the difference between Vectors AB and AD drawn from Point A. It is the correction used by Fugro to remove double counting for wind driven current (Kirsner and Dunn, Submission No 135, Paragraph 2.1). Kirsner and Dunn point out that the reconstructed winds (e.g. Courtney's data) are about 8 kts stronger than the historical winds (US Navy Marine Climatic Atlas). This is true. Fugro used a corrected wind driven current of 0.22 kts setting 328.8 degrees (Vector AD) in their analysis. As wind driven current is directly related to the strength and direction of the wind, the implication is that the wind was about 7.3 kts from 148.8 degrees. The evidence does not support this conclusion.

CONCLUSION.

Vector AC is based on wind speed and direction recorded at the time. There is no double counting involved. I conclude that Vector AC is the best estimate of wind driven current for the period 19th to 28th November 1941.