MARITIME ARCHAEOLOGICAL ASSOCIATION REPORTS

1987/88

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Notes on projects of the Maritime Archaeological Association of Western Australia between July 1987 and June 1988.

Introduction:

These reports have been compiled to meet a need for faster dissemination of information about MAAWA projects, to indicate the nature and scope of the Association's activities and to provide the motivation and source material for further research.

In general terms these documents consist of interim reports, notes and research papers which form part of or are ancillary to the final project reports, which it is intended will be published as separate documents as each project is completed.

For example, in this issue there is material related to the North Mole and LADY ELIZABETH projects, on which full reports will be published later.

Contents:

THE STERN OF THE LADY ELIZABETH

December 1987.

By Mike Murphy.

Kieran Hosty and I were assigned by acting project leader Lin Kilpatrick to search the stern area of the wreck on and under the reef to see if we could locate the rudder.

Project leader Colin Cockran had developed a theory that the wreckage might not be lying on top of the reef, but could be jammed up into an angle of the reef. It might be possible to swim in between the stern and the reef to locate the rudder.

We first placed a tag (blue number 19) on a clearly visible jagged metal beam jutting up from the wreckage at an angle towards the stern and approximately in line with the central axis of the wreckage.

Then we swam back over the reef to attempt to locate the furthest extremity of the wreckage. In fact it appeared not to extend much further than the general area from which we had started. There are several holes in the reef and in some of these were striated formations which might have been metal beams or sheets but on closer examination were almost certainly part of the reef formation. A search under ledges looking back towards the wreckage, even with a torch, failed to identify anything to indicate the wreckage extended this far.

Returning to tag number 19 we began to examine holes on the port side. Here, quite clearly, there was a grid section of deck beams. To one side of this were a number of holes under the reef and closer examination showed one, possibly two, to have a curved ceiling section which was almost certainly part of the hull. One piece had a clearly defined semicircular ridge protruding about 5 cms from the hull and running along its full length. This appears similar to the ridge shown on photographs of barques from a similar period. On the sand on the bottom of this hole was a piece of wood, possibly sandalwood or sand-worn deck timber, with tapered ends and a large knot in the centre. Near the hole were several broken pieces of what appeared to be deck beams running approximately fore and aft. (Blue tag 20 attached). In another hole was a section of what again appeared to be curved hull with T-shaped protusions about 5 cms from the hull, the T-piece being about 15 cms long. These were possibly stanchions to which rigging was attached. On the sandy floor of one of the holes was a distinct piece of decking or hull timber with a clearly marked grain. The visible area was about 15 cms wide and 40 cms long.

On the north western side of the sandy hole in which these items were found it is possible to look in below the grid of decking frame previously mentioned.

Here the ceiling appears to be formed by hull sections curving in opposite directions. The one towards the bow is a convex curve from the bottom upwards towards the stern and the one towards the rear a convex curve from the bottom upwards toward the bow. Kieran estimated that this indicated an overhanging stern section which had broken away at the point where it joined the main line of the stern. On the sandy floor of this space were several pieces of Munz metal.

Looking down into a space in the deck frame just above and towards the rear from the convex roofed hole there is a well preserved porthole cover with the glass apparently intact. It is on the bottom of the hole, set into or lying on a concave curved section corresponding to the ceiling of the space below it. Next to this there is a round hole in the hull section and nearby a second round hole. One of these might be the hole from which the porthole cover has become detached, or they may be totally seperate holes. They looked more like open holes through which hawsers would have passed, possibly for the steering gear? At approximately 15 to 20 cms diameter they appeared too small for anchor chains. If they were not portholes and instead have another function in the hull, then the porthole cover must have fallen there from a point above. There is no sign of anything this could be but it may have been a timber structure since disintegrated.

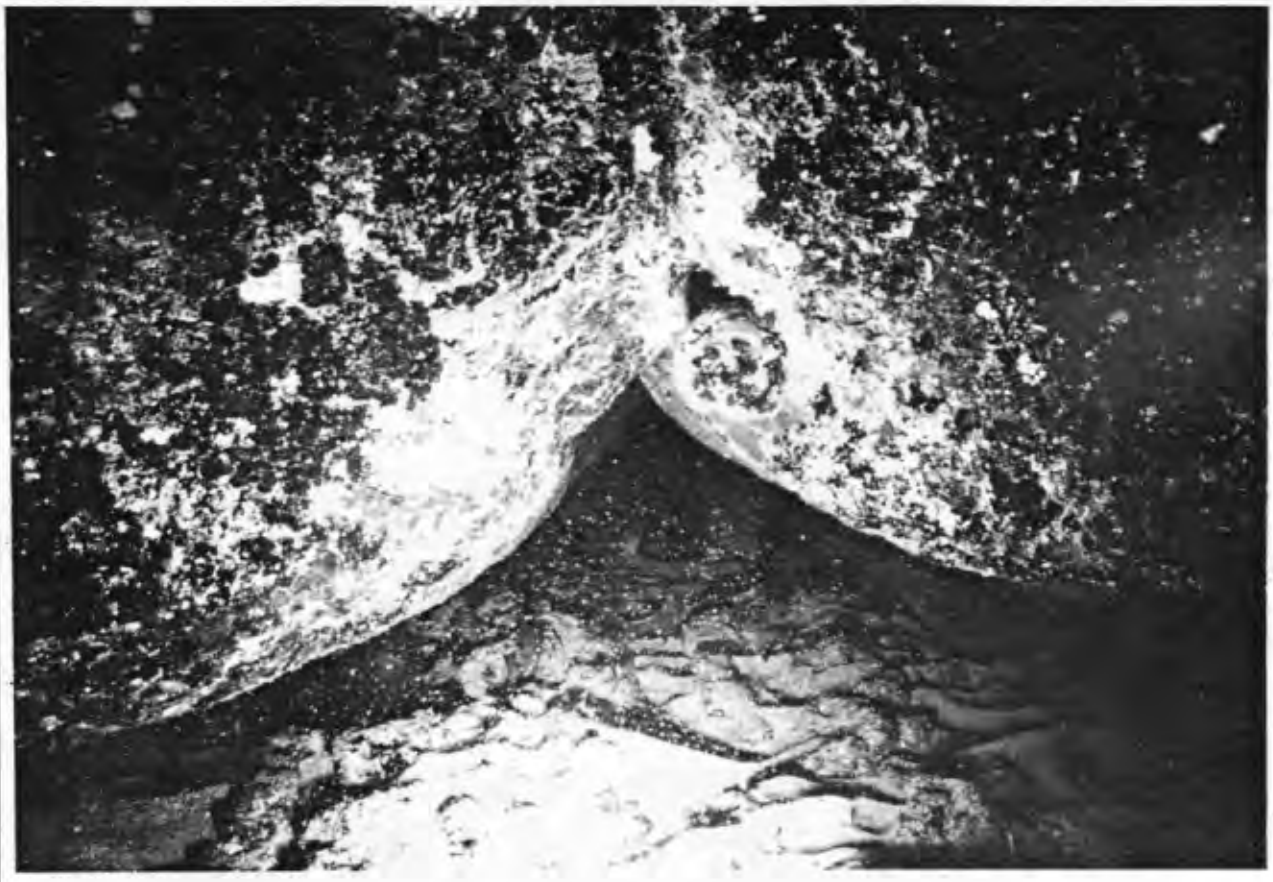
We then proceeded to the starboard side of the wreckage which stands substantially higher from the sea floor. Here there is a large overhang of metal and beneath it another curved section of hull forms the ceiling. This hole goes deep under the wreckage but a torch illuminated little except a red tubular shape protuding downwards from the ceiling and disappearing into the floor. It was about 15cms in diameter, too narrow to be a mast but possibly part of a spar, or of a ventilator. On the hull section were protusions similar to those previously noted as possibly stanchions.

Near this overhang and slightly towards the rear, on the starboard side, is a large piece of material about 5cms thick standing on it's edge. It protudes about 2 metres upwards from the sea floor and goes back about 1.5 metres, where it is overlapped by another piece of similar material (Blue tag attached). Towards the front of the first piece there is a long, vertical hole going almost the full depth, and at the bottom there is a beam, or shaft, about 1.5 metres along the bottom.

Because of it's thickness I estimated it might be part of the rudder, or the top of a deck hatch, (although this would not explain the hole and the shaft).

Returning to the port side we examined a large piece protuding above the decking frame. This appeared to be metal, about 1.5 metres high by 1 metre wide and 15cms thick. There is a square shaped hole through it towards the top left hand corner, (looking to the rear of the wreck), and a protusion about 10cms by 15cms on the right

The porthole - photograph by Patrick Baker



The "inverted V" - hull or reef? Photograph Patrick Baker

side. Kieran estimated this was part of the steering box, or similar mechanism (Blue tag attached).

NOTE: The above was written from memory two days after the dive. Approximate locations of sites indicated may be innaccurate, and none of the measurements referred to in the text were confirmed.

POSTSCRIPT : After a report on the above dive was given to a MAAWA meeting Maritime Museum Photographer Pat Baker visited the site on another MAAWA dive. He was of the opinion that the inverted V formation Kieran and I believed to be two sections of the ship's stern was in fact only one section of the stern jammed against the reef. The photographs he took indicate that he was examining the same area but Kieran and I were not on that dive and so we were unable to compare our findings in more detail. In particular Pat did not locate what we described as a semicircular ridge running along the hull. It is intended to return to the site and to take more detailed photographs and measurements on a later occasion.

THE NORTH MOLE WRECK PROJECT

Interim Report

March 1988

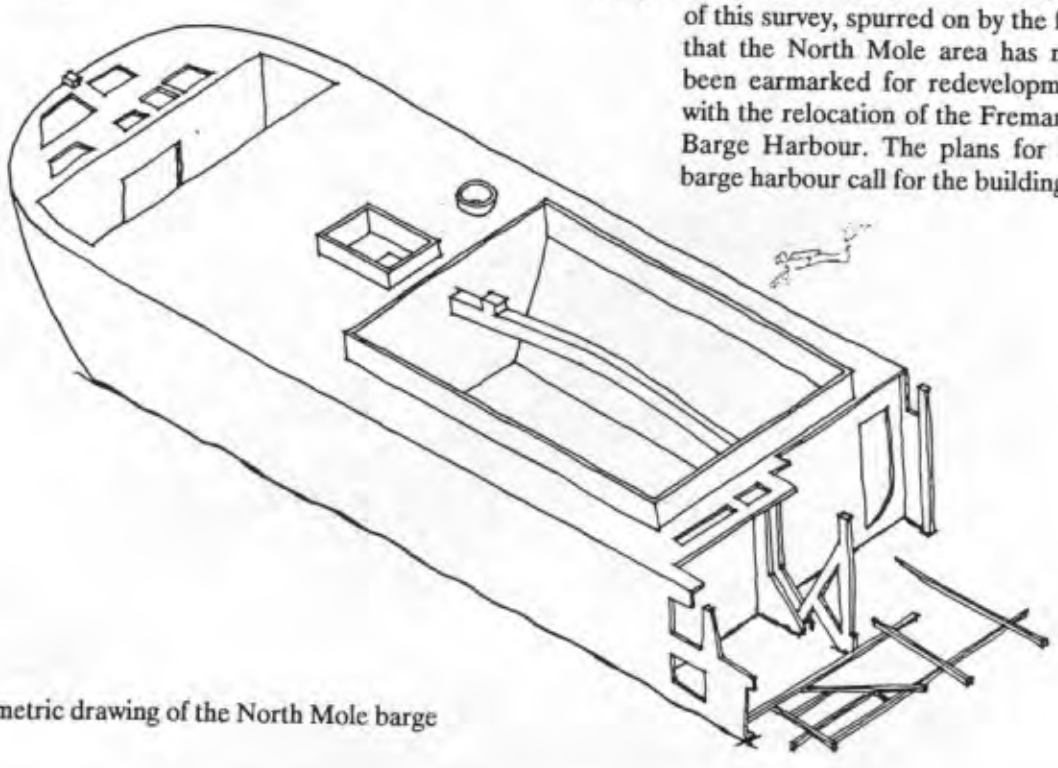
By Kieran Hosty

For the past eighty years the waters immediately to the north of the North Mole have been used as a dumping ground and breaking yard for damaged, unseaworthy and unprofitable vessels.

A number of vesels are known to have been disposed of in this area and a number of sites (North Mole Unidentified One and North Mole Unidentified 2) are relatively well known in the diving community and have been dived on recently.

The importance of this area to the maritime history of the port of Fremantle was recognised by the Maritime Archaeological Association of W.A. in the late 1970s by the appointment of various project leaders whose task it was to carry out a survey and hopefully identification of the North Mole wrecks. For the work of Mike Pollard and Dennis Robinson in this area the Association and the present North Mole Project Leader are extremely grateful.

The present season of work is a continuation of this survey, spurred on by the fact that the North Mole area has now been earmarked for redevelopment with the relocation of the Fremantle Barge Harbour. The plans for the barge harbour call for the building of



Isometric drawing of the North Mole barge

a 0.8 km seawall and the reclamation of up to 20 hectares of ocean immediately to the north of the North Mole. This extension of the Mole will cover up some of the known sites in this area and may destroy further unknown sites.

In July 1987 I was appointed MAAWA Project Leader for the North Mole, my main task being to locate, research and hopefully identify all known and unknown sites in the area threatened by the barge harbour development.

The method of search chosen is an adaptation of the traditional swimline method. An area is boxed off using weighted lines and bouys and the position recorded onto a chart by taking transits on local landmarks and sextant bearings between prominent features. Divers then swim along between the weighted lines holding a jackstay. This allows the divers to communicate with each other and also ensures that they cover the desired area. When an object on the bottom is sighted the diver pulls on the jackstay, signalling to the other divers to stop. The object is then examined and bouyed by the locating diver if significant.

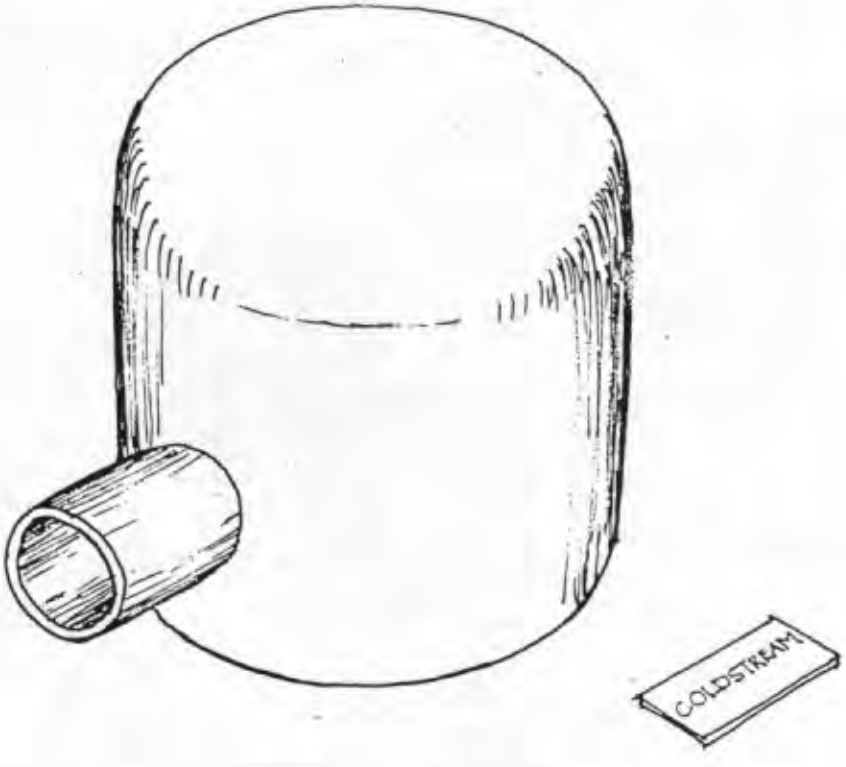
After the area has been covered the divers report back to the work vessell. The bouyed objects are then recorded onto the chart by using transits, compass and sextant bearings and the process is repeated in the adjacent area, building up a series of searched grids which eventually cover the entire search area.

Since the commencement of this stage of the North Mole Project MAAWA has had five days spent on the sites with a total bottom time of over 40 hours. In that time divers using the YAMBULLA as well as private craft searched an area of approximately 280 metres by 200 metres and located three major areas of wreckage as well as other isolated but substantial pieces of wreckage, one of which is a large boiler.

The North Mole wrecks have also been recorded using Col Cockram's isometric drawing technique which has produced results which have to be seen to be believed. Work by both Col and Lin Kilpatrick in this area is of extremely high standard and shows what MAAWA is capable of doing given time and imagination.

My future plans for the North Mole Wreck Project are a continuation of the swimline search plus hopefully the introduction of manta board searches to cover the outlying areas off the Mole.

The boiler drawn later from measurements taken on a dive



Map and drawings of North Mole Unidentified 2 (East of the main barge)

-- Mike Murphy

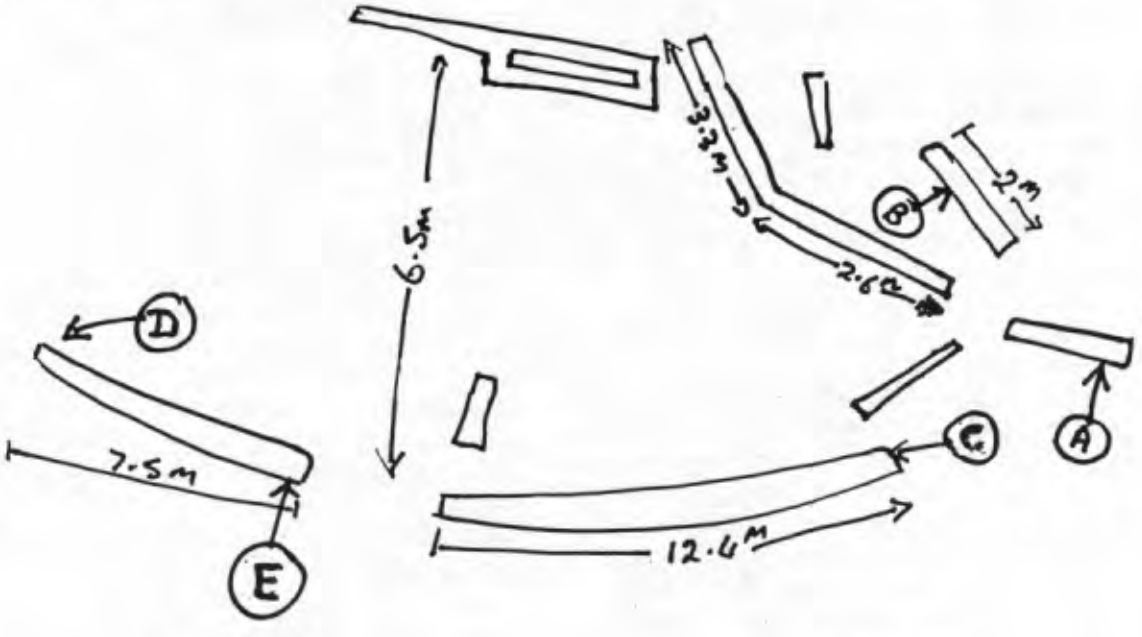
A Stern post (Indications of a propellor shaft in sand below.)

B One of several small pieces away from main wreckage.

C Curved section of hull at stern end. Height above sand varies along side

D Section near bow (?). Some suggestion it is separate wreck from stern section.

E Hatchway in side ? This also suggested by some divers as part of another wreck.

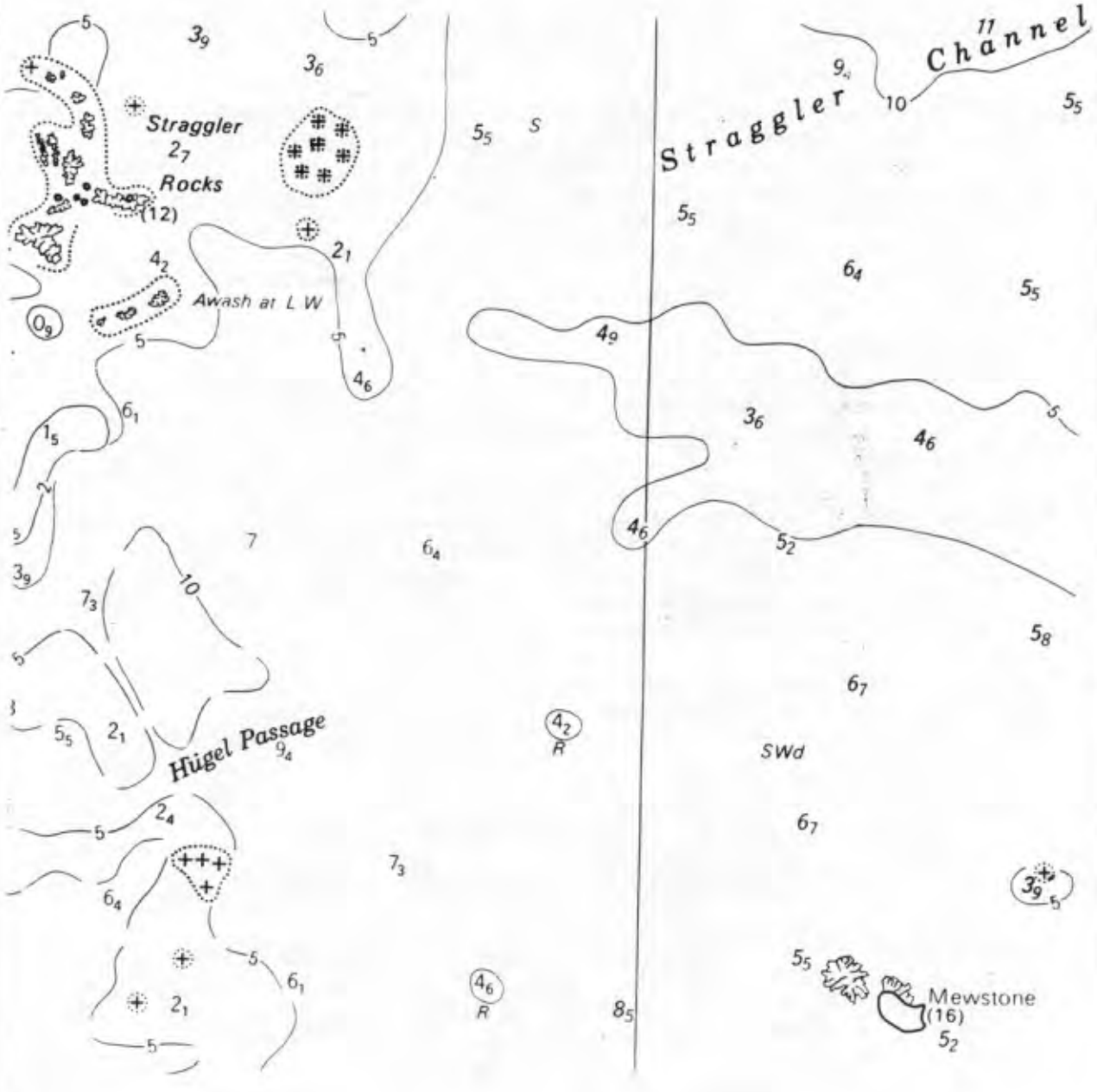


located a report in the Perth Gazette which stated the AMELIA was "nearly lost" on the Stragglers. In-bound from Java, the AMELIA struck the Stragglers at 9 p.m. and stayed there overnight. The next morning she was refloated but was leaking and was eventually condemned. Other reports indicate she was later towed to South Bay, sold and broken up.

The Mewstone

Because of the large area involved the Mewstone, a rock to the south of the Stragglers, is being treated as a separate project. There was a report of a wreck being sighted on a reef to the north of the Mewstone in the late 1970s but Museum divers failed to find it when returning with the reporters of the wreck some years later.

A general search of the area is planned during the 1988/89 summer.



The area around the Stragglers

THE SS KOOMBANA SEARCH GROUP

By Kerry Thom

We are a local, non-profit group, dedicated for the past 12 years to improving public awareness in and the identification, preservation and display of our Maritime Heritage in the North West of Western Australia. We work as a local group affiliated with the Maritime Archeological Association.

"SS Koombana"

We have been actively researching and searching for the wreck of this vessel for the past 12 years. It is classed as an "Historic" wreck by the Federal Government and represents the largest loss of life, in a civilian maritime disaster, on our coast this century. It was lost in 1912 with all 156 lives, some five weeks before the TITANIC.

A major search has been carried out by our group in April of this year and the US Air Force will be carrying out an airborne search of three areas of interest, which we have defined, in the near future. We hope to turn up some interesting anomolies.

"Pearl"

We located the remains of this vessel on North Turtle Island some years ago.

Bedout Island

We have uncovered several items on the reef platform surrounding this island, which we believe to be part of a 200-300 ton sailing vessel which is over 100 years old.

Discussions with Mike McCarthy suggest this is probably the American Whaler NORTH STAR, lost in 1856. Items located already include a copper nail and ballast bricks. The island has been the centre of rumours about wrecks (including the KOMBANA) for years.

We have run around the reef edge using scanning sonar (April 1987) but nothing showed up. We would dearly love to do it with high resolution TV.

This is a problem island. Reefs not properly charted - big tides to 8 metres - many sharks, poor weather, very strong currents, poor water visibility and isolation - 36 Kms NNE Hedland.

We are determined not to let this island beat us. There is usually a patch of calm weather in April/May and we will try for a reef top search on a big tide, and a reef edge search on a small tide.

"Glenbank"

We have commenced searching for the wreck of the Russian barque GLENBANK, a copper ore carrying vessel of some 1481 tonnes, which caused the loss of some 19 lives when lost in 1911. Several promising clues allow us to be hopeful that we will locate her.

Cape Keraudrin

We are investigating large wreckage in the area of this Cape which signifies the presence of a large, unknown vessel somewhere in the surrounding area.

HISTORY OF THE URIBES - WRECKED OFF ROTTNEST

By Richard McKenna

Sometime in June or July 1942 the three masted auxilliary schooner, URIBES, was lost after striking near Phillip Rock, Rottnest Island, and so came to a close the ship's 74-year history.

The vessel was built at Stockton-on-Tees in the United Kingdom in 1868 by the firm of M.Pearse & Co. The hull was constructed of Lowmoor Iron and she was barque rigged for her owners' usage in trade between their home port of Bilboa, Spain, and English ports, with occasional calls to some European ports.

From the Lloyds Register of 1869-70 it appears that her owners were a family concern for she is shown as owned by "de Uribe" and her master is shown as "Uribe". The Register gives the following details :250 tons, 110.8(feet) x 24.1(feet) x 14.0(feet).

The ship is described as having one bulkhead.

The URIBES does not appear in my next Lloyds Register of 1879-80. This is not uncommon, as she may have been insured with other firms not associated with Lloyds or she may have been laid up for sale or some other reason, and her registry had lapsed. In many cases such a disappearance means the ship was sold to new owners and a change of name took place but this was not the case.

Letters

In March 1958 I received a letter from Capt E.J.Courthope, of Mosman Park, WA. This led to letters to the Royal Australian Navy Archives Officer and Mr Vincent of the South Australia Ship Lovers Society and, eventually, to the Registrar of British Ships at the Port of Liverpool, England.

The URIBES, formerly of Bilboa, Spain, was registered at Liverpool on September 29th 1881, the owner being Alexander Cassels, of Liverpool, Merchant, 64/64 shares.

Subsequent transactions appearing on the Port of Liverpool Register are a Bill of Sale dated 16/12/1881, to Andrew Shewan, of London, England, Master Mariner, and a Bill of Sale dated 21/8/1883 (under a mortgage), to the Adelaide Steam Tug Co Ltd. 64/64 shares.

On coming onto the British Register in September 1881 the ship was given her British Official Number 0/n84150, which she carried for the rest of her life.

Her description in the Liverpool register is as follows;Decks -one and break; Masts - three; Head - scroll; Rigged - barque; framework - iron; Stern - elliptic; Length - 110.8 feet; Build - clinch; breadth - 24.1 feet; Galleries - none; depth - 13.85 feet; Tonnage - 249.74 tons (Gross and Nett).

To Adelaide

The URIBES registry was transferred to the Port of Adelaide, South Australia, dated the 27/11/1883, with the registry transfer documents no doubt having been brought out with the ship on her delivery to her new owners.

On coming onto the Port Adelaide Registry her particulars are shown as for the Port of Liverpool.

Shortly after she arrived at Port Adelaide the ship, anchored off Semaphore, near Port Adelaide, dragged her anchor and went ashore, but was subsequently refloated with little or no damage.

Whether the URIBES ever traded for the Adelaide Steam Tug Co Ltd as a barque I am unable to verify but from numerous reports it appears that she was, soon after, de-rigged and used by the company as a lighter with a short

mast, although her owners did not close her registry until 31/12/1920.

From a Mr Vincent, a member of the Ship Lovers Society of South Australia, I am informed that during the 1920's the URIBES passed into the ownership of a family called Hassels, of Marion Bay, Yorke Penninsula, South Australia. These people used the ship to carry gypsum from Marion Bay to Adelaide, for use in the plaster and cement trades. The URIBES of course, being a dumb lighter vessel, had to be towed from each port.

Then, on the 31/5/1934, the URIBES O/n.84150 is re-registered at the Port of Adelaide, South Australia, her owners being given as J.P.McFarlane,16/64 shares,L.G.McFarlane,16/64 shares, D.M.McFarlane, 16/64 shares, J.F.Philcox, 16/64 shares.

On acquiring the vessel these people had the ship cut down to her 'tween decks and rebuilt as a three masted schooner. They then had a petrol driven engine fitted and crew accommodation given to her.

Alterations of tonnage, length. installation of machinery, etc were recorded against the ship's registry at Port Adelaide dated the 2/7/1934.

W.A. connection

In the meantime events had taken place in W.A. that led to the coming of the ship to W.A. waters. About this time the long jetty at Onslow was severely damaged in a cyclone and a contract was called for the delivery of materials, mainly timber, for the reconstruction of the jetty.

Captain Coldstad was sent over to Adelaide to inspect the newly built and converted URIBES and to report back to Cossack Lightering & Traders Ltd on acquiring the vessel for use on the Onslow contract. As a result of Captain Coldstad's report the company bought the vessel and she was sailed to her new home port, Fremantle, W.A.

Her Bill of Sale to Cossack Lightering & Traders Ltd is dated the 16/7/1934.

The ship, now a three masted schooner, was registered at this port on the 13/8/1934 as No 3 of 1934, O/n 84150.

Her new particulars were 117.59 tons gross, 81.43 tons nett,104,25 feet x 24.1 feet x 6.57 feet, Machinery - 1 kero-petrol engine, British built; made in 1929, 6 cylinders, 75 BHP = 4.5Knots, Engine made by Thornycroft, England. Owners; Cossack Lightering & Traders Ltd.

During early November 1940 the URIBES, when off Yanchep, W.A. went ashore on a sandy beach. A cutting in the "West Australian" newspaper dated 13/11/1940 shows the ship close inshore, aground. The then Lloyds Register Surveyor of Fremantle, the late Mr W.G.Davies, was brought in to refloat her, which he successfully accomplished without further damage.

Wrecked off Rottnest

The R.A.N. Area Archives Officer at Fremantle, in a letter to me dated 6/2/1959 wrote:

".... The following information was given by Mr Gordon Humphries of Tropical Traders, Pattersons Ltd, Fremantle, who was an army staff officer at Rottnest at the time of the vessels foundering - In either June or July 1942 the URIBES, laden with 150x6 inch shells, stores and a couple of motor vehicles, arrived at Thompson Bay jetty from Fremantle, but owing to a northerly breeze could not remain at the jetty and her master decided to return to Fremantle. Near Phillip Rock the ship's motors cut out and it was found that the anchors would not hold. The ship drifted in a southerly direction and struck a reef about 300 yards from Natural Jetty. She was holed and sank. She quickly filled with sand to deck level. The motor vehicles and some of the stores were salvaged but owing to the sand it was found impossible to remove any of the shells. She was surveyed as unfit for salvage and remains where she foundered, presumably with the 6 inch shells still in her."

THE SEARCH FOR THE TWINKLING STAR

By Mike Murphy

April 1988

Contents :

Dives on the site

The search for the TWINKLING STAR has continued intermittently over the years. It was only a small barque and most of the cargo and personal effects was salvaged so it is unlikely to be of great archaeological value. The main reason it has attracted attention over the years is presumably the accessibility of the area just off the north west end of Garden Island and the mystery surrounding the exact location if any wreckage has survived.

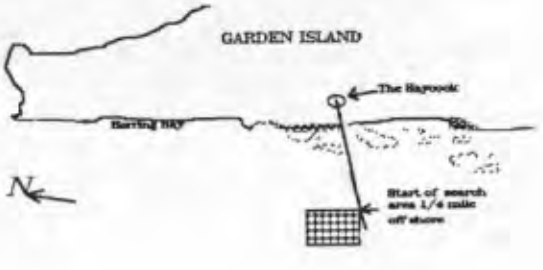
I have conducted four dives in the general area in the past twelve months.

I took as my starting point a line from the marker on top of the Haycock (a hill near the north end of the island) vertically down to the southern end of the rocks on the point below, and anchored the boat in line with this approximately a quarter of a mile out from the edge of the reef. This was where MAAWA member George Green indicated he had seen some brass rudder pintels about twenty years ago.

This was the area for the first dive. Subsequently I moved northwards from this line and also further out, to approximately the three-quarters of a mile mentioned in reports as the distance the TWINKLING STAR was off the beach when she sank. However, the search was not systematic nor the measurements accurate as my concern at this stage was to examine the sea bed in general and identify the type of country which would have to be searched.

Large reef outcrops

I found it to be very rocky with large reef outcrops and many caves and overhangs. Crags frequently rise up suddenly and in other areas there are long lines of reef which drop away steeply on the shore side. There plenty of evidence of cray



fishing - old pots, pieces of metal used as weights and long pieces of wire - but nothing I could firmly identify as wreckage from a substantial ship.

Nowhere did I identify a long cliff face of reef which would match the descriptions in the eye-wintess accounts of the wreck. This leads me to believe the wreck site may not be in this area but either closer in to shore, nearer the reef, or towards the southern end of the bay where the reef sweeps out in a curve. If one assumes the estimates of the eye-witnesses to be accurate, the location still depends on the point from which the distance was guaged. Does "three quarters of a mile off the Haycock" mean a distance from the hill itself, from the beach or from the line of reef out from the reef? Generally I suspect the wreckage, if any remains to be found, is closer in to the beach than the area in which I was searching this summer.

Another group searching

At the time of writing I understand the Underwater Explorers' Club has a team also searching for the TWINKLING STAR and it appears their search has been more rigorous, both in analysing the likely search area and in searching it. However, I understand they have also been unable to locate anything.

Historical record

There is a considerable amount of material about the TWINKLING STAR in the files of the Department of Maritime Archaeology at the Museum. Most of it is brought together in a paper written by Mark Staniforth in 1981. I have also received assistance from Richard McKenna who has references to the TWINKLING STAR in his records.

Briefly the TWINKLING STAR was built in Calcutta in 1866 and was a 2-masted schooner with a round stern and a wooden hull 63.58ftx16.25ftx7.33ft.

She visited Fremantle in 1867 and was offered for sale but there was no purchaser so she returned to Calcutta with a load of sandlewood. In February 1868 after reaching Fremantle on a voyage from Hobart she was bought by the Bateman brothers for one thousand pounds and was used by them mainly for carrying freight between Fremantle and Champion Bay. There was at least one voyage to Batavia in 1869 and she made voyages to Melbourne in 1871 and 1872 when her hull was recoppered at a cost of three hundred pounds.

Wrecked in a heavy haze

On January 25, 1873, she left Champion Bay and sailed for Fremantle with eight passengers and six crew and a load of three tons of lead ore.

On January 30, in haze created by a bush fire, she struck a reef in three fathoms of water off Garden Island. At the time she was steering 84.25 degrees and the crew were looking out for the Rottnest light which they expected to see dead ahead. Eyewitnesses gave the location as three quarters of a mile off the Haycock and there are descriptions of her being driven stern first against a perpendicular rock face. Most of the spars and rigging were landed and also the passengers - Mrs John Chipper and Mr and Mrs P. Simmonds and their five children.

The ship was reported to have completely broken up by February 26 and Captain George Long was subsequently censured by a court of inquiry.

Museum records

The museum records contain transcripts of Captain Long's description of the wreck and those of the other crew members and passengers.

Notes in the file, probably by the late Mike Pollard who searched the area extensively in the 1970s, suggest the most appropriate search areas are (1) the reef rising out of the four-fathom area about half a mile WSW of Mt Haycock and (2) nigger heads 300 to 500 yards offshore at Mt Haycock.

I did not locate any papers by Mike Pollard outlining the areas where he searched. When he died his wife donated all his papers to the Museum and if they exist in other files they may contain other notes which would help in at least identifying those areas which have previously been searched unsuccessfully.

NOTE: *There is a discrepancy in the files in that some reports refer to the load as copper ore instead or lead. Captain Long's account refers to lead ore and the first mention of copper appears to have been in a newspaper report of the court proceedings in The Inquirer in 1873.*

THE TOTAL WRECK OF THE SS CAMBRIA

By Mike Murphy

As one of its 1988/89 projects MAAWA has adopted a study of the SS Cambria, a small coastal steamer which sank in a storm at the south end of Garden Island in 1900.

Although the site has not yet been located and no field work commenced, basic background research has revealed a fully documented report of the incident in the newspapers of the time.

The Cambria was a wooden, single-screw steamship listed as 3/1896, ON 79276. She was built by William Mollison at Emu Bay, Tasmania, in 1885 and weighed 85.72 tons gross, 58.82 tons net (various reports erroneously describe her as 26 tons and 150 tons).

Her dimensions were 85.7ft x 18ft x 7ft. She had two masts and was of ketch design with a round stern.

The engine was a 25hp compound steam engine made by Ross and Duncan of Glasgow.

The Cambria appears on the Fremantle shipping register, ex-Hobart in 1896 and was owned by S.Smith of Geraldton in November 1898.

On Sunday March 4, 1900, she left Fremantle for Bunbury in moderate seas and a fairly strong SSW wind but met stronger winds and bigger seas head on after passing through Challenger Passage and clearing the shelter of the islands. According to an interview with Captain Charles Coalstad, reported in the West Australian on March 6, he decided to turn back to Rockingham but was caught by a heavy swell and carried to leeward passing the southern point of Garden Island.

The Cambria struck something and he ordered full steam astern, but the propellor broke from the shaft and she drifted onto the reef about a quarter of a mile from the island about 8.30 p.m.

Water flooded in, putting out the fires. An attempt to launch a boat failed, the ship swung round off the reef and Captain Coalstad, an engineer, two firemen, three seamen, a cook and one young passenger named Reid spent the night in the rigging as the water rose above the deck and the ship settled in about 20ft of water.

At 2.30 a.m. the Police and Customs at Fremantle were alerted by telegraph from the Police at Rockingham that a steamer had been wrecked and cases and brooms were being washed ashore.

The tug Dunskey set out for the scene (presumably some hours later) but had not gone far before it was reported that the crew had reached Fremantle.

Still clinging to the rigging at daylight, with only the masts and the funnel above the waves, they had used floating timbers to fashion a raft and got ashore on the island, found some material for a sail and eventually reached Fremantle, the boy named Reid taking a cat to safety with him.

Captain Coalstad was later found guilty of negligence and his master's ticket was suspended for six months.

There was a conflict of evidence between the Harbour Master, Captain Russell, who stated it was unsafe to go through the South Channell at night and master mariner Captain W. Reid who said it was normally safe to anyone who knew the passage well. One of the specific charges against Captain Coalstad was that he had not taken any soundings and Captain Reid commented that although he had "used the lead" in earlier years when he was inexperienced, he had been through the passage at night for many years without taking soundings.

He agreed it was not prudent to go through the passage without a compass but said Admiralty charts for the area were of no use to anyone with local knowledge.

Cargo

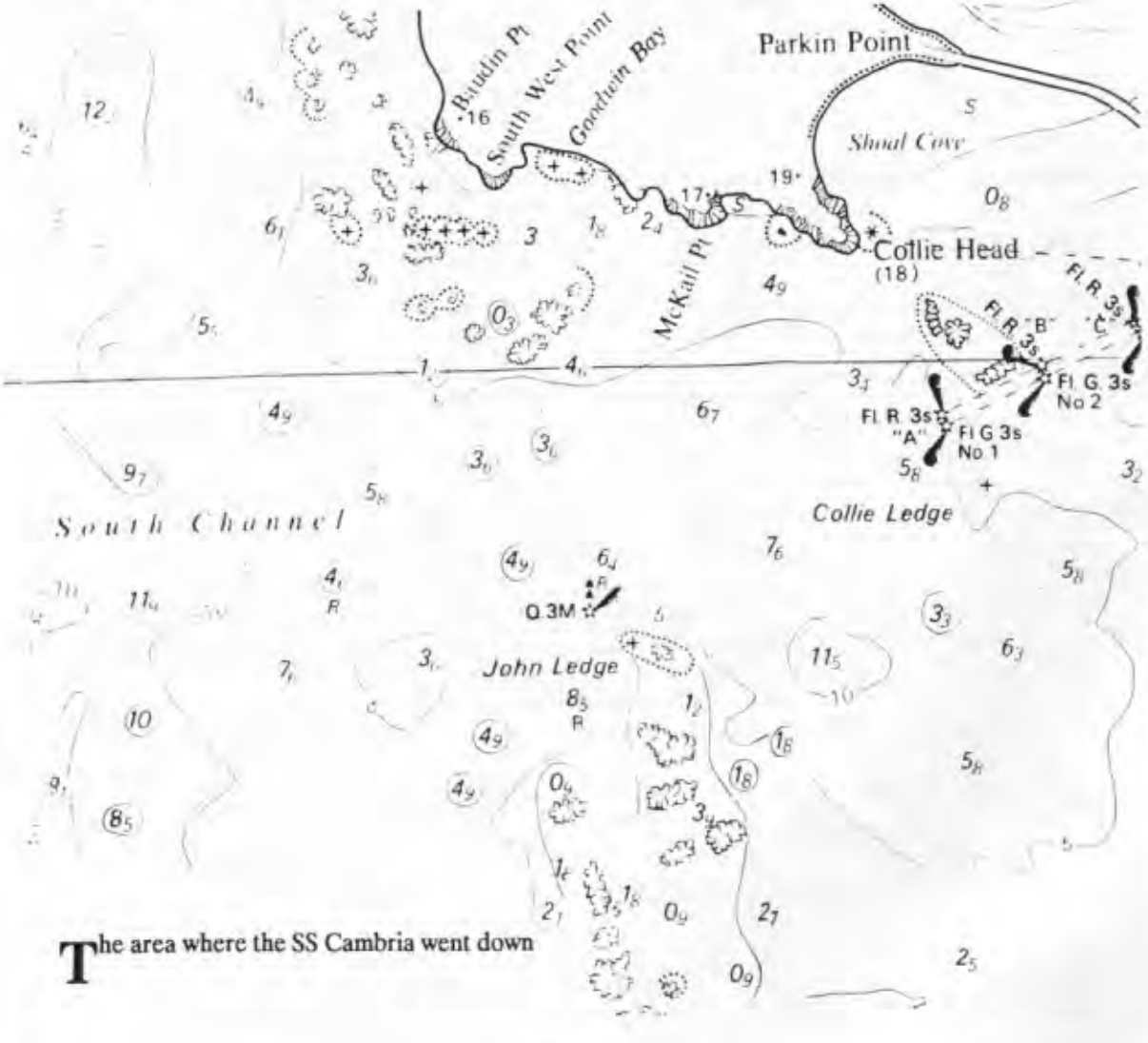
No cargo or personnel belongings were saved from the wreck immediately but there are brief reports of a salvage operation some days later and the hull and machinery were eventually sold at auction.

The cargo was described as 150 tons of general merchandise and machinery. It included 86 tons of groceries, kerosene, wines and 55 tons of machinery ex Suffolk for the Imperial Jarrah Timber and Woodpaving Company of Bunbury. There was also 30 tons of hardware, bran, pollard, oregon timber, rope and tar.

The newspaper reports dwell on the value of the gargo and predict that most of it will be salvaged. A report on March 7 states that a Captain Webster with a gang of men and a diver left in the tug Dunskey with a lighter in tow to commence a salvage operation, and another on March 13 announces an auction of "the hull, machinery and all parts...as she now lies in the south channel about 2 3/4 miles from Rockingham."

The name "Coalstad"

As the name "Coalstad" is unusual I searched the Perth and W.A. country telephone directories for any possible descendents of the Captain of the Cambria who might have photographs or other records. I could find no trace of any Coalstad, or Colstad, Coelstad, Collstad, Cohlstad, Calstad, Callstad, Carlstad or other spelling variations which came to mind including all of the above commencing with a K instead of a C.



The area where the SS Cambria went down

UNDERWATER MEASURING TECHNIQUES

This paper is based on a workshop organised by Colin Cockram at Whiteman Park on August 30th 1987. The purpose of this workshop was to explore various techniques of measuring and recording information. With the limited time available, only a small number of techniques could be attempted, but it is hoped that our discussions and practical sessions will increase understanding and, above all, lead to experimentation and innovation by our members.

One of MAAWA's objects is to produce permanent records of sites and artifacts and at the commencement of each project, careful consideration must be given to the best method of achieving the required result. The following may be considered on their various merits as a range of alternatives for recording information;

a. Oral - by means of tape recordings
b. Written descriptions
c. Drawings
d. Photographic stills
e. Movie/video film
f. Models

Decisions of which techniques to use will be guided by the complexity of the site and the detail necessary to compile an adequate record.

This paper is concerned only with drawing technique and, more particularly, the gathering of data for drawing production.

Having decided on drawing as a record medium. decisions then have to be made on the appropriate drawing technique. These may be categorised as follows;-

a. Plane Drawings; i.e. Plans Elevations Sections
b. Pictorial; Sketches (freehand)
Isometric/Axonmetric
Perspective

DATA GATHERING

All drawing forms, except freehand sketches, require the gathering of information on site in the form of measurements, levels and diagrams to assist in final presentation.

There is an enormous range of possibilities and techniques used for site recording of information, extending as far as highly sophisticated electronic devices. Many of these methods may seem obvious in their simpicity, others more complex, but all rely on simple principles which, with a very basic knowledge of geometry and physics, are easily understood.

LOCATION AND ORIENTATION

The site should be accurately located on a large scale map of the area by reference to prominent permanent features, using natural alignments, compass, theodolite, sextant.

The orientation of the site should also be recorded with reference to a major feature or datum line.

MEASUREMENT

There are basic principles of measurement common to all forms of physical measurement.

1. Off-set method

First step is to establish a datum line which should extend the full length of the area to be measured.

Objects are then located by measuring this distance at right angles from the datum line (off-set).

2. Triangulation.

Two or more datum points are established and their distance apart and relationships measured. Points on site are then located by measuring from two datum points.

3. Portable Grid.

Datum points are established as above. The grid (for example a frame 108m square divided into 300m x 300m squares) is placed over the objects to be measured. The grid is located by triangulation or off-set method. A sketch is then made of the area covered by the grid, onto a pre-printed drawing sheet.

For accuracy in measurement the tape should be held as nearly as possible to horizontal, with the use of a plumb-bob if necessary.

Written dimensions should always be consistent and preferably expressed in millimetres. This eliminates the need for decimal points and errors in later interpretation, e.g. 1.5 metres = 1500mm.

Unless the work being measured is of a very simple nature, it is preferable to number the points being measured and to schedule measurements separately.

SECTIONS.

Cross-sections provide a valuable third dimension which is invaluable in providing understanding of a site.

One method is to use a water level consisting of a clear polythene tube filled with air.

CONCLUSION

This workshop was only a quick introduction to recording and measuring techniques. There are many methods in use. The important thing is to approach each task in a logical manner, decide on the best approach, and proceed with consistency. Equally important is the need to be inventive and to try new techniques which will increase accuracy and reduce time - which is most important for our part-time activities.

Finally, we should all be flexible in our approach to various tasks, even to the point of changing methods of measurement if the results are beneficial to our chosen pursuit.

ISOMETRIC DRAWING

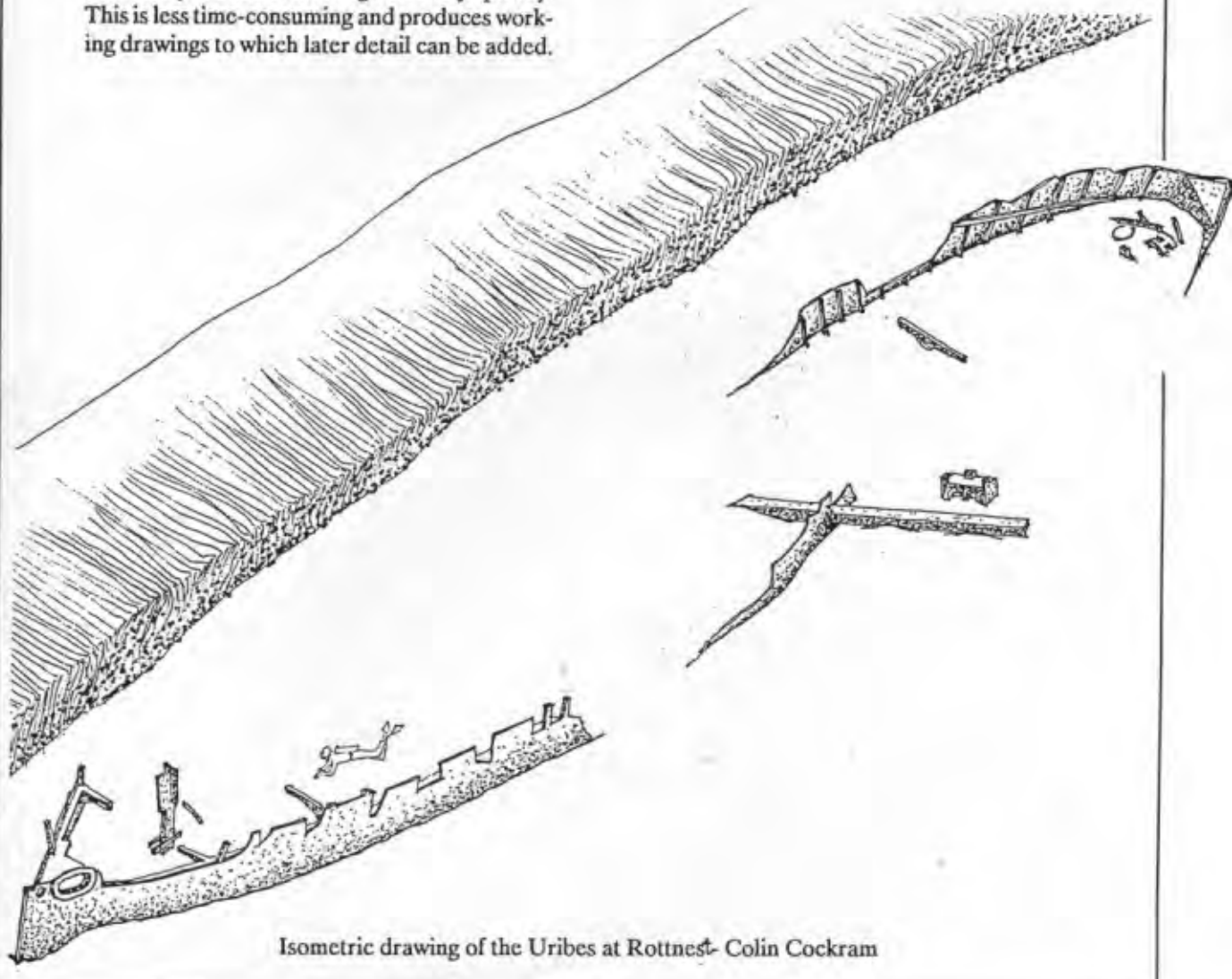
During the 1987/88 summer, largely on the recommendation of Museum photographer Pat Baker, MAAWA began turning its attention to isometric drawing as a means of recording wreck sites.

There are a number of reasons why isometric drawing is appropriate to this type of operation.

* An approximate drawing can be made underwater, with accurate measurements being taken for later redrawing.
* It lends itself to the compilation of a drawing from small sections - of special value when underwater visibility is limited.
* A smaller number of measurements can be taken to produce a drawing relatively quickly. This is less time-consuming and produces working drawings to which later detail can be added.
* Isometric drawing is done on a grid pattern which is pre-prepared and does not require specialised knowledge of perspective.

Early trials

The first trials of isometric drawing were carried out as part of the North Mole project, with immediate and gratifying results. Both Colin Cockram and Ian Warne were able to produce



Isometric drawing of the Uribes at Rottnest - Colin Cockram

drawings of the barge and it was also possible to produce drawings of details of machinery.

On a later dive during this project Steve Wells took measurements of the boiler which Colin Cockram was later able to reproduce as a drawing.

The second trial was on the wreck of the Uribes near Natural Jetty at Rottnest, and again the result was excellent, including an outline of the wreck and detail of some of the machinery.

It is now considered that isometric drawing is the best way to approach the Rottnest wrecks project. The aim is to produce an isometric drawing of each wreck which can be engraved on perspex and placed on each wreck's plinth with pointers to important features so that they can be observed and identified by divers in the future.

The most valuable purpose of an isometric drawing, however, is that it can be used to show the whole wreck site, something which is not always possibly with photography, and it does it in a three-dimensional way which is more illustrative than a plan and elevations.

It is immediately obvious, for example, that an isometric drawing of the LADY ELIZABETH would solve all the problems of varying levels which have thwarted attempts to produce a photo-mosaic or plan drawing of the wreck site.

Not for everyone

One early discovery with isometric drawing is that while it does not require a knowledge of perspective, it does require some artistic and drawing skills. Several members who attempted the method quickly gave up because they lacked these skills.

Future projects will probably see the development of teams in which one diver with drawing skills directs the work of others who do the measuring on which the drawing will be based.

Machinery detail from the North Mole barge