



SHIPWRECKS OF TWOFOOLD BAY & DISASTER BAY

October, 1996

WRECK INSPECTION REPORT



Olive Cam (1920-1954)
Lanercost (1865-1872)
City of Sydney (1853-1862)
New Guinea (1884-1911)

Ly-ee-Moon (1859-1886)
Lawrence Frost (1854 - 1856)
Empire Gladstone (1944 -1950)
Unidentified Wreck Site

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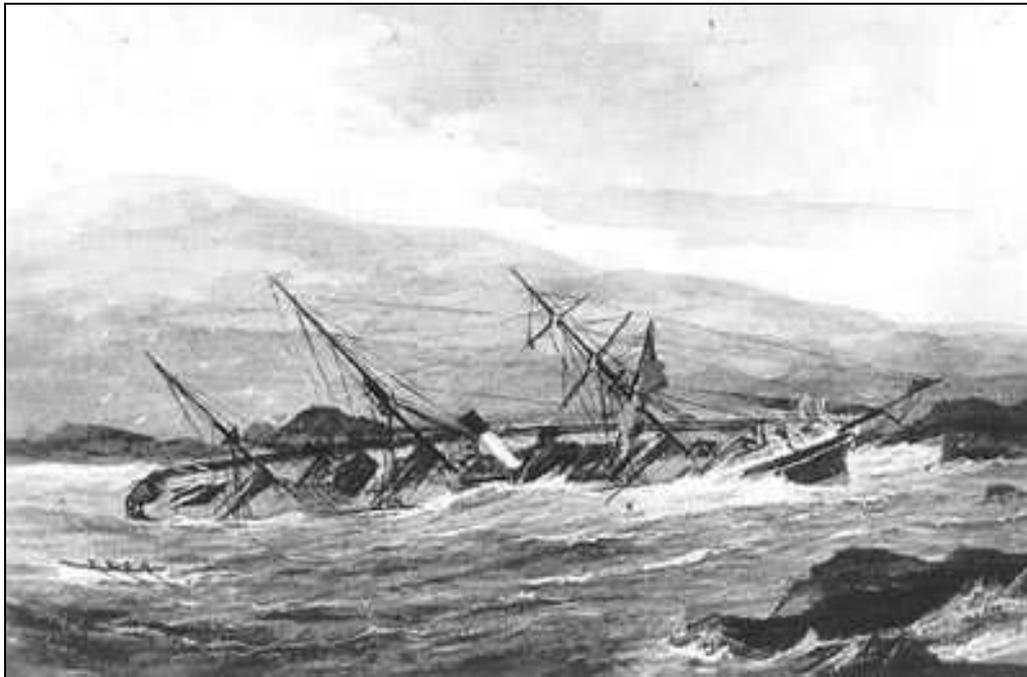


Figure 1: *City of Sydney* (1853-1862) first vessel wrecked in Disaster Bay. Courtesy: Mitchell Library, State Library of NSW.

TWOFOLD BAY / DISASTER BAY SHIPWRECK SURVEY

WRECK INSPECTION REPORT

Wednesday 10 April - Friday, 19 April, 1996.

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1.0 SUMMARY

This report details a regional shipwreck survey of the Twofold Bay/Disaster Bay area, conducted from Wednesday 10 April - Friday 19 April, 1996.

The principle aim of the survey was to investigate the remains of known shipwreck sites previously located by sports divers and to obtain an accurate GPS position fix for each site. The survey also had two further aims: (1) to examine the *Lanercost* wreck site in detail, whose attribution has been conjectural, and (2) to gain local information on other potential shipwreck sites located in the study area.

The field inspection proved successful with the following results:

- the examination of the *Olive Cam* wreck site and the gaining of an accurate position
- the examination of the *City of Sydney* wreck site and the gaining of an accurate position
- the examination of the *New Guinea* wreck site and the gaining of an accurate position
- the examination of the *Ly-ee-Moon* wreck site and the gaining of an accurate position
- the examination of the site tentatively identified as the *Lanercost* wreck site and detailed examination of surviving hull structure, associated artefacts, together with the gaining of an accurate position
- the examination of an isolated timber "knee" in Disaster Bay
- examination of the *Empire Gladstone* wreck site, Merimbula and the gaining of an accurate position
- Examination of timber hull components and artefacts raised from an unidentified shipwreck, located off Green Cape
- public lecture at Eden Killer Whale Museum, Eden
- lecture at NSW National Parks and Wildlife Office, Merimbula
- meetings with the National Parks and Wildlife Service - Merimbula; NSW Fisheries - Eden; Waterways Authority - Merimbula; Eden Killer Whale Museum - Eden; Fish Co-op - Eden and the NSW Water Police - Eden.

The survey was conducted by the NSW Heritage Office's Maritime Archaeology Program, formerly part of the Heritage Branch of the Department of Urban Affairs and Planning.

Maritime archaeologists David Nutley and Tim Smith coordinated the fieldwork. Diving support was obtained from Colin Browne of the Manly Hydraulics Laboratory (Public Works Department).

The Eden Killer Whale Museum, local divers and the general public assisted the work by providing important information on known wreck sites. Four days were allocated at the start of the field program to make all necessary contacts, which were extremely fruitful.

As part of the 1992/3-1994/5 Three Year Strategy, the Maritime Archaeology Program had included an extended field survey at Wreck Bay, NSW in 1993. During the current 1995/6-1997/8 Three Year Strategy a second extended field survey was conducted at Tweed Heads in September, 1995. The highly successful results of these extended duration field surveys has led to the development of regional field inspections as a priority - the Twofold Bay/Disaster Bay project being the third in the series.

Those present during the current survey were:

Mr David Nutley, Heritage Office, Maritime Archaeologist, Project Coordinator;

Mr Tim Smith, Heritage Office, Maritime Archaeologist;

Mr Colin Browne, Manly Hydraulics Laboratory, Public Works Department, diver support.

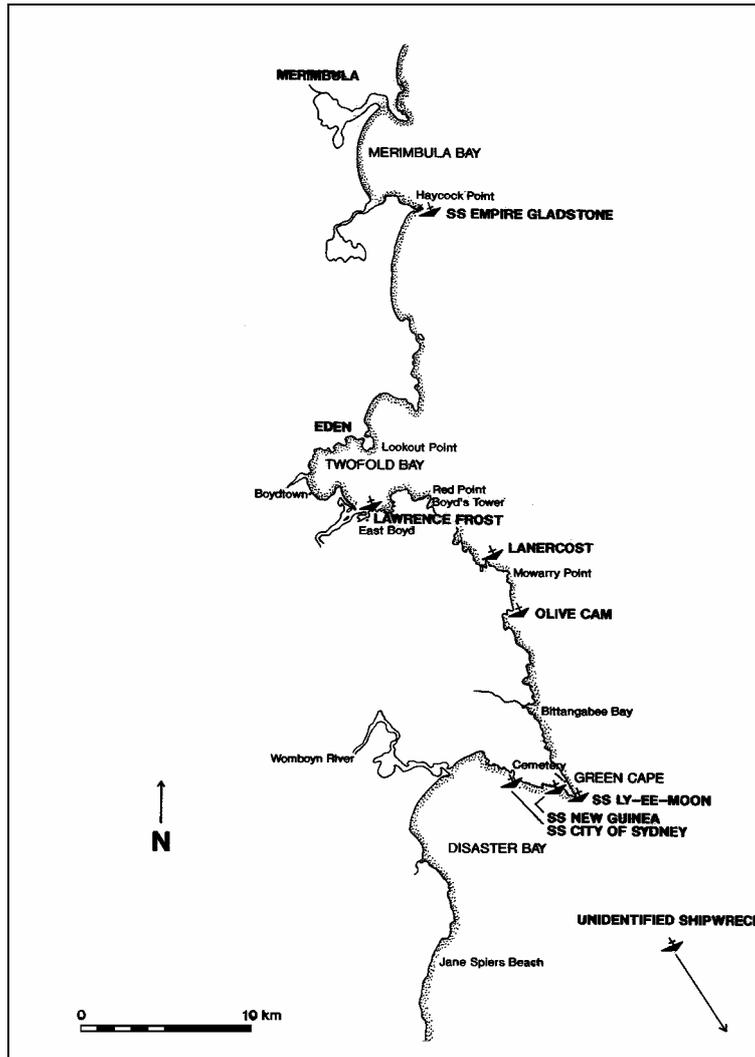


Figure 2: Location Map - Twofold Bay/Disaster Bay: environs and wreck sites under investigation.

2.0 HISTORY OF THE TWOFOLD BAY/DISASTER BAY AREA

Following Captain Cook's charting of the southern coastline, the next European contact with the area was associated with the wrecking of the trader *Sydney Cove* in 1797. This vessel went ashore at Preservation Island in the Furneaux Islands, Bass Strait. When part of the crew attempted to sail from the wreck, they were driven ashore on the Victorian coast and proceeded to walk overland to Sydney. A diary kept of the trip indicates that they passed near Cape Howe, then around Disaster Bay and Twofold Bay on their long trek back to Botany Bay.

The 1840's saw much of the history of the southern coastline associated with the enterprises of Benjamin Boyd. Boyd was a London Stockbroker who decided to establish bold commercial ventures on the relatively unsettled southern coast. Evidence of Boyd's activity has now been largely lost, although a tower or lighthouse on the South Head of Twofold Bay and the Seahorse Inn at Boydstown, are tangible reminders of his grandiose plans.

The following information on Boyd's career has been condensed from: H.P. Wellings, *Benjamin Boyd in Australia (1842-1849)*:

Boyd arrived in Sydney on the 18 July 1842 aboard his yacht *Wanderer* amid scenes of jubilation. Word had already preceded his departure from London regarding his enterprising business plans. Three steamers were purchased by Boyd and sailed to Sydney, these being the *Seahorse*, *Juno* and *Cornubia* as part of a plan to establish a coastal steamship service.

A banking company was also formed by Boyd, known as the Royal Bank of Australia, and when floated, attracted £1,000,000 capital. Boyd also formed the Australian Wool Company, basically a property concern owned by Boyd with one of his brothers, Mark, which traded in both London and Sydney as "B. Boyd & Co., Brokers" and "B. & M. Boyd, Brokers and General Agents". Upon his departure from England, Boyd gathered a number of influential gentlemen who were to become staff of his new operations.

Upon his arrival, the steamer *Seahorse* was put into service between Port Jackson and Port Phillip, with passages to Launceston in Tasmania. Boyd's idea for a coastal steamship service appears to have been taken up by competition prior to his arrival, and there was some early concern over duplication of routes. This problem was resolved however, with Boyd allowed to keep his interest in the southern coast of NSW and his competition, the northern coastal routes. However In June 1843, the *Seahorse* was damaged in Tasmania and condemned in Sydney, at a great personal loss to Boyd.

Boyd now looked to purchase land and secured, by 1845, enormous holdings. In the Riverina area, he controlled one and three quarter million acres with some eight thousand cattle and a hundred and forty thousand sheep. On the Monaro plateau, he obtained over half a million acres, running thirteen thousand cattle and eighteen thousand sheep. Boyd next chose Twofold Bay as an important shipping port due to its natural harbour and closeness to his extensive land holdings. Though used as a whaling port at the time, Boyd expended vast sums of money constructing a private town at the site, which he named, *Boydtown*. Buildings included the Seahorse Inn, a large store, a jetty, a three story wool shed, wells, vegetable gardens, orchards, a church and residences.

Boyd naturally took on whaling as a major industry, establishing a whaling fleet and boiling down works. The vast expenditure however began to take its toll and Boyd's finances became incredibly complicated due to the various controls of the Royal Bank of Australia, B. Boyd & Co, the Australian Wool Company, and the Australian Agency of M. & B. Boyd. Boyd was also plagued by some dishonest staff and many of the building projects riddled with doubtful negotiation regarding cost and materials.

By 1847, the affairs became "hopelessly entangled" and Boyd was removed from the running of the businesses which was passed onto William Sprott Boyd, apparently a cousin. Sprott Boyd on his arrival was forced to close down the affairs of the Royal Bank of Australia and attempt to salvage the other assets. By 1849, the operations at Twofold Bay had ceased, the buildings slowly fell into disrepair and the bulk of the land holdings sold off. Boyd left Australia for the Californian gold fields in 1849 aboard the *Wanderer*, staying about a year. In an earlier scheme to create a private colony on a south seas island, Boyd examined San Cristoval in 1851 and while ashore appeared to have been killed by natives. The crew sailed the *Wanderer* back to New South Wales, where it was wrecked at Port Macquarie.

Shipwreck History

The southern coastline always caused concern to shipping due to the strong seas frequently observed around the Cape Howe/Disaster Bay area. Disaster Bay appears to have earned its name from the frequency of shipping disasters to have occurred there, some nine vessels recorded lost, the first major casualty being the coastal steamer *City of Sydney* in 1862. Other Prominent disasters included the barque *Lanercost* in 1872 and the horrific loss of the steamer *Ly-ee-Moon* on the tip of Green Cape in 1886. Several other large vessels continued to be wrecked in the area, including the *New Guinea* in 1911.

Twofold Bay also attracted a number of early losses due to its growing importance as a port and safe haven. Some nineteen vessels are recorded lost in Twofold Bay or surrounding areas. The earliest recorded loss being the timber sloop *George* as early as 1806. Many of these disasters can be accounted for due to the extreme sea and storm conditions which frequent the area. Some vessels were lost due to fog or running too close to the coast on inshore currents. Other disasters were caused due to human error such as trying to cut down voyage times by skirting too close to the coast.

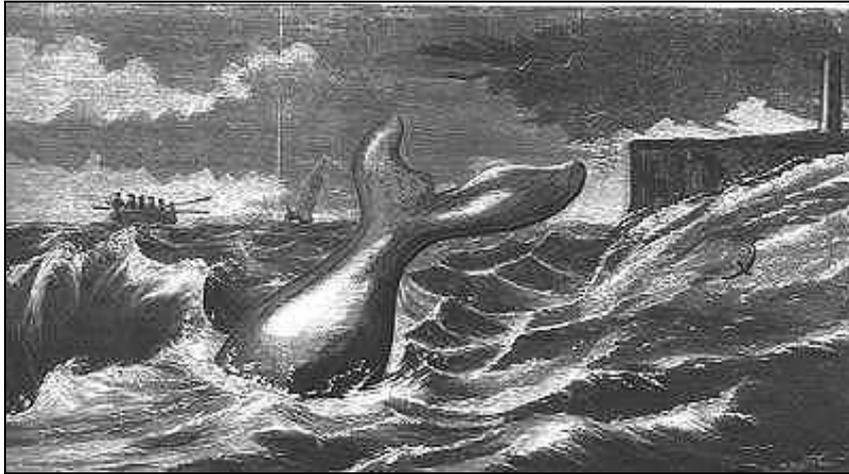


Figure 3: Whaling activities in Twofold Bay, as depicted in the *Illustrated Sydney News*, 30 September, 1871. Note Boyd's Tower on Red Head to the right of the picture.

3.0 OBJECTIVES

General

To develop baseline data on wreck sites in the Twofold Bay/Disaster Bay area in relation to their environmental and archaeological characteristics; to develop site interpretation and an assessment of the area's archaeological potential.

Specific

1. To inspect the known wreck sites of *the Olive Cam*, *Lanercost* (attribution tentative), *City of Sydney*, *New Guinea*, *Ly-ee-Moon* and *Empire Gladstone*, and to record an accurate position for each site;
2. To conduct a probe survey of the *Lanercost* wreck site in order to assist with the firm identification of the site;
3. To conduct a visual examination of the Historic Davidson Whaling Station in an attempt to locate the wreck of the *Lawrence Frost* lost in 1856;
4. To meet with local trawler operators to gain additional information on a shipwreck previously reported to the Heritage Office, and located in 700 feet of water south-east of Green Cape (in the Cape Howe area).
5. To liaise with relevant agencies and organisations in the survey area (eg Bega Valley Shire Council - Bega, Eden Killer Whale Museum, NSW Fisheries - Eden, Fish Co-op - Eden, National Parks and Wildlife Service - Merimbula, NSW Water Police - Eden, Waterways Authority - Merimbula, and the local Dive shop and Scuba Club).
6. To present a public lecture on Maritime Archaeology at the Eden Killer Whale Museum.

4.0 METHODOLOGY

Background histories of known and potentially located shipwreck sites were prepared by the Office's staff prior to the site inspections. A total of **19** shipwrecks were noted as having been lost in the immediate vicinity of Twofold Bay and **9** shipwrecks in or near to Disaster Bay (*NSW Historic Shipwrecks Database* - see Appendix 1). Additional information on these and other potential wreck sites was obtained from Mr John Mathieson, a local diver and fisherman who had previously collated historic references to shipwrecks in the region.

When assembled, the above documentation provided information on the general history of the 28 vessels, particular aspects of their construction and significant details of each wreck event. From this list of losses, six shipwrecks were chosen for inspection because their locations were known. These were the: ss *Olive Cam*, ss *City of Sydney*, ss *New Guinea*, ss *Ly-ee-Moon*, ss *Empire Gladstone*, and a wreck site tentatively attributed to the barque *Lanercost*.

The *Lawrence Frost* site was included in the current survey because a tentative wreck position could be estimated from historical reports and oral recollections. An unidentified shipwreck located by fishermen in deep water off Green Cape, was also included in the current survey.

A visual inspection was made of the previously located sites with video footage and drawings obtained where applicable. The limited duration of the fieldwork period precluded detailed site documentation. An accurate GPS position fix was gained for each site using a Magellan Global Positioning System receiver using static averaging mode.

4.1 Shipwreck survival in the study area - some factors

The majority of iron shipwrecks lost in the study area have been located. This is partly due to the size of these vessels and the resulting extent of wreckage, and the fact that many of these losses occurred close inshore, accessible to SCUBA divers. Several of these wreck events had a major impact on the local communities (e.g. loss of the *Ly-ee-Moon*) and therefore the location of the loss was retained by the community.

Many of the early timber wreck sites have eluded discovery. This is partly due to the early period in which many were lost with the accompanying absence of detailed records, and, partly due to the isolation of the region in the early part of the colony's development. The rugged coastline meant that timber vessels were extensively broken up if they came ashore, leaving little in the archaeological record. A number of the timber vessels were lost off the coast in deeper water. These have been occasionally detected by deep sea trawling operations, for example, through demersal net deployment. At least one site has been found initially to be in a relatively intact condition, due partly to the less turbid environment and partial burial in anaerobic environments (see 5:9).

The absence of extensive coastal rivers and bars is a major feature of the southern coastline of New South Wales. Many of the northern rivers attracted significant collections of shipwrecks as vessels crossed these hazardous shallow entrances. The south coast by comparison, claimed fewer shipwreck losses and most of these were against the rocky coastline or within the large bays which often acted to trap vessels (e.g. Disaster Bay, Twofold Bay).

4.2 Salvage Activities in the Twentieth Century

Several notable salvage ventures were organised in the 1950's and 1960's and had a serious effect on the integrity of the local historic shipwrecks. These expeditions targeted the shipwrecks as a source of precious metals for re-sale. They were organised at a time when there was no effective legislation in place to protect wreck sites from disturbance (i.e. *Historic Shipwrecks Act*, 1976), other than the provisions of the *Navigation Act*, 1912, which dealt largely with ownership rights for sunken vessels and cargo.

The first major recovery operation involved the salvage vessel, *Foremost 17*, which was towed from England specifically to raise the cargo of copper, lead and zinc ingots from the wreck of the steamer, ss *Cumberland*, lost near Eden in 1917. The work took place in 1951 and it was estimated that some 1825 tons, representing 95% of the lost cargo, was recovered by the owners. Photographs of the work, which involved divers operating from a diving bell, indicate that substantial portions of the ship's structure were removed to gain access to the cargo. Much of the deck plating is shown being raised to the surface and fishermen report that the wreck is now spread over a large area of the sea floor. While partly due to the disturbance to the wreck site, this damage is also partly due to modern fishing nets snagging the remains and distributing them over several kilometres.

The *Foremost 17* departed Eden following the work and assisted in raising 35 bars of gold from the wreck of the *Niagara* in New Zealand¹.

The other major venture involved a commercial salvage company headed by Mr Carlo Filippetti, then of Sydney². His group chartered a 120 foot long vessel named *Lady Doris* to carry out their operations. The vessel was taken to Eden and operated out of Bittangabee Inlet. Most of the salvage work was undertaken in the 1960's on the *Ly-ee-Moon*, *City of Sydney* and *New Guinea* wreck sites and involved clearance of the sites with explosives. Several additional wrecks were salvaged, although it is not recorded where these were located.

One of the notable discoveries involved a brass cannon which was recovered from an unrecorded site in the Disaster Bay area. This important relic can be dated to c. 1780's - 1820's and might be the same cannon which was purchased by a Sydney resident and temporarily curated by the Australian National Maritime Museum in Darling Harbour, Sydney (Figure 4).

The salvage vessel, *Lady Doris* was later wrecked by one of the crew at Bittangabee after being caught in a gale.

References:

1. The *Imlay Magnet*, 8 August, 1985. p.20.
2. Undated newspaper clipping collected by Mr John Mathieson, Eden.

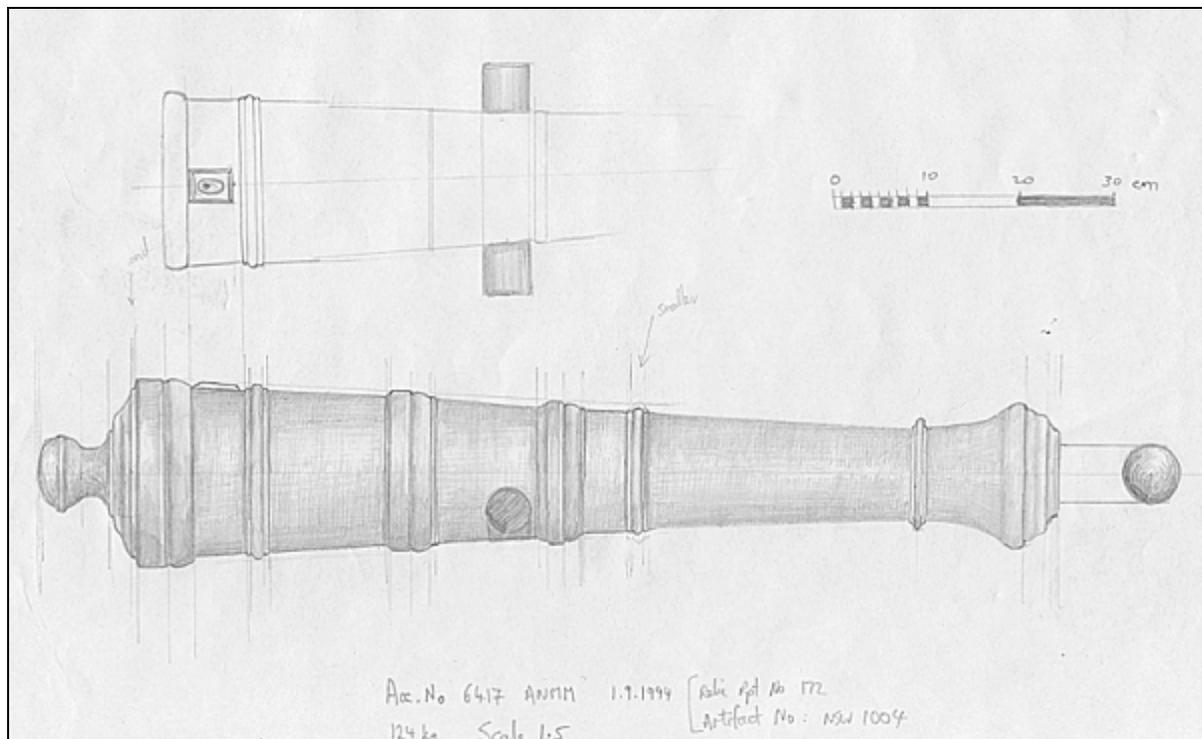


Figure 4: Drawing of a small cannon (probably a signal gun) recovered from Disaster Bay in the 1960's by Mr Carlo Filippetti. The isolated cannon was allegedly found sitting on the seafloor in its original wooden carriage and not associated with any of the well known Disaster Bay shipwrecks. (Drawn by Tim Smith)

4.3 Legislation

NSW's shipwrecks and submerged cultural heritage are protected by legislation which aims to limit interference, damage or destruction to individual sites, while encouraging responsible public access to these maritime heritage sites.

Shipwrecks located inland (within rivers, harbours, lakes and enclosed bays) which are more than 50 years of age from the date of build, are protected as relics under the Relics Provisions of the *Heritage Act*, 1977 (State). Those wrecks situated in open waters, below the low water mark adjacent to the coast and lost 75 years ago or more, are protected by the *Historic Shipwrecks Act*, 1976 (Commonwealth).

5.0 HISTORIC CONTEXT OF VESSELS AND LOSSES

5.1 OLIVE CAM (1920 - 1954)

The history of the *Olive Cam* has not been fully researched at the time of writing. Cook, Welton & Gemmell Ltd. built the steel fishing vessel at Beverley in the United Kingdom in 1920. The single screw steamer had a length of 128.5 feet and a tonnage of 289 tons. Owned by Cam & Sons Ltd. and registered in Sydney¹, the steamer formed part of the some twenty strong fishing fleet operated by the Cam Family in the Eden area².

The trawler was wrecked on the 2 November, 1955 near Mowarry Point³ with three lives⁴. Previous researchers have incorrectly identified the wreck as the *Oliver Cam*⁵ or the *Mary Cam*⁶. The site is not presently protected by the provisions of the Commonwealth's *Historic Shipwrecks Act*, 1976.

5.2 LANERCOST (1865 - 1872)

The wooden barque *Lanercost*, was built at Harrington in the United Kingdom in 1865. With a length of 123.7 feet and tonnage of 358 tons, the vessel was originally registered to trade between the United Kingdom and Holland¹.

Few details have been uncovered relative to the vessel which was wrecked near Mowarry Point, Twofold Bay at 5 am on the 24 November, 1872. The barque was on a voyage from Newcastle to Adelaide with 580 tons of coal. There was no loss of life as all hands managed to reach the safety of the shore.

The crew of the pilot boat attempted to get on board, but was thwarted by the heavy sea which was breaking over the vessel's lower yards. Hope of saving the vessel was halted when it went to pieces against the reef. The *Lanercost* was commanded by Captain Simpson and owned by Mr Simpson of Adelaide².

Sydney newspapers reported that the *Lanercost* was wrecked "half a mile south of Mowarry Point"³. Divers have not reported any visible wreckage in this area, apart from the wreck of the steel fishing trawler, *Olive Cam* (1954)⁴. The newspaper entry therefore appears to have been a typological error.

Local divers have located a large timber shipwreck half a mile north of Mowarry Point in the 1960's. This site has been associated with the *Lanercost*, although some believe it is the wreck of the *Oliver Frost*, also lost south of Twofold Bay (below).

5.3 OLIVER FROST (1831 - 1856)

The *Oliver Frost* (sometimes misquoted as *Oliver Post* due to a miss-reading of the *British Register* entry¹) was wrecked south of Twofold Bay on 6 October, 1856. A timber Brigantine built at St Mary's Bay, Nova Scotia (Canada) in 1831, the vessel was registered in Melbourne, then transferred to Sydney². Owned by E.M. Sayers and J.C & G. Dibbs, the vessel was totally wrecked "at Goodburz Point, Twofold Bay"³, and, as the Sydney Morning Herald stated, "about nine miles south-east of Twofold Bay"⁴. No lives were lost and part of the cargo (undisclosed) was saved.

The term 'Goodburz Point' is no longer in current use, making the attribution of the site unclear, although the distance from Twofold Bay would place the event between Bittangabee and Mowarry Point.

5.4 CITY OF SYDNEY (1853 - 1862)

The iron, single screw steamer, *City of Sydney*, was built in Glasgow, Scotland in 1853. With a length of 176.9 feet and a tonnage of 735 tons, the steamer was the first screw vessel ordered by the Australasian Steam Navigation Company Ltd. The vessel had three masts and was barque rigged¹.

In October 1862, the *City of Sydney* was on a voyage from Melbourne to Sydney under the command of Captain Robert T. Moodie. The voyage had been fairly uneventful. On the night of the disaster, the passengers had been enjoying a pleasant evening on deck watching the nearly full moon. Captain Moodie retired at midnight when the Gabo Light had been spotted and left steaming directions to be followed. At about 2 am, with no warning, the vessel quickly began running into fog. The First Officer called the Captain to the bridge and was questioned as to the position of the vessel. In a gross error of judgement, the First Officer believed the *City of Sydney* to still be some three miles off Green Cape.

Captain Moodie decided to swing the vessel slightly more out to sea just to make sure they would clear the Cape. It was too late, breakers were sighted immediately ahead. Before the Moodie could check the time, the *City of Sydney* crashed ashore as he shouted "Stop her, back her!"².

Passengers were thrown off their berths and the lamps in the saloon were smashed to pieces. Every effort was tried to back the steamer off the rocks to no avail. At one stage, all the passengers were herded to the stern in an attempt to raise the bow. Fearing that the swell was carrying the vessel broadside to the shore, an anchor was rowed out over the starboard quarter to keep the vessel facing the rocks. The strain was too much and the steamer swung around broadside, making water very fast.



Figure 5: The ss *City of Sydney* heeling over before sinking.

Courtesy: Mitchell Library, State Library of NSW.

The nearly one hundred passengers remained calm during the ordeal, except at one moment when the vessel made a sudden lunge. Boats were lowered and the women and children rowed along Green Cape and landed in a small indent on the shore. As the steamer heeled over, waves washed completely over the semi-submerged deck.

Boatloads of survivors were removed from the vessel, the Captain, engineer, carpenter, steward, mate and two quartermasters being the last to leave. The Captain was so reluctant to abandon his stricken vessel that he had to be dragged into the lifeboat. Just as he was carried aboard, the *City of Sydney* "fell over onto the starboard side to seaward, filled and went down"³. The fine steamer settled beneath the waves with only part of the port bow and topmasts visible. It sank so quickly that the last boat away was struck by the falling yards and the two quartermasters washed overboard.

Fires were lit on the beach for the women and children to dry their clothes. At first light, all could see that the vessel had gone ashore some three kilometres west of Green Cape, well within Disaster Bay. The boats were rowed around to Twofold Bay, arriving separately after seven or eight hours at the oar. Some were met part of the way by the steamer *Hunter* which was dispatched to the wreck after the first boats arrived. The Customs boat, the Water Police and another whale boat proceeded to the scene of the wreck from Twofold Bay.

It was estimated that the *City of Sydney* and cargo was worth some £25 000⁴. Cargo included: sugar, wine, ale, brandy, opium, rope, kerosene, Panama hats, boots, harnesses, chocolate, furniture, hardware, machinery and axes⁵. The majority of passengers and crew lost everything with the wreck.

5.5 NEW GUINEA (1884 - 1911)

Thick fog was to claim another large interstate steamer at Green Cape in 1911 during a voyage from Melbourne to Sydney. The ss *New Guinea* was wrecked in Disaster Bay between the *City of Sydney* and the *Ly-ee-Moon* wreck sites.

The 300 feet long iron single screw steamer, was built in 1884 at Sunderland in the United Kingdom. Ordered by the respected W. Doxford & Sons firm, the *New Guinea* was owned by McIlwraith, McEacharn & Company and registered to Melbourne ¹.



Figure 6: ss *New Guinea*'s bow on Green Cape before it was broken down by waves action. (Photo: Courtesy, Mr John Mathieson, Eden.)

The steamer had a tonnage of 2674 tons and was powered by a compound surface condensing steam engine generating 260 horse power. With two decks and two masts, the vessel was schooner rigged ². At the time of the loss, the ss *New Guinea* was under charter to Huddart, Parker & Company Ltd. and was insured with the Queensland Insurance Company ³.

The steamer ran into a bank of thick fog as it approached Gabo Island on the trip north along the southern New South Wales coast. Under command of Captain Coleman with twenty-eight crew aboard, the *New Guinea* steamed into Disaster Bay and crashed high and dry onto the rocks at low water. The vessel sank some half mile inside of the Green Cape lighthouse. The accident happened at 11.50 am on the morning of 13 February, 1911 ⁴. The order was given to go "full steam astern", at the instant the rocks were first sighted.

Crew evacuated by the boats and proceeded to Eden. When nearing the open sea near the tip of Green Cape, one returned to the wreck. The other boat was caught by the wind and current and taken fifteen kilometres out to sea and had to struggle back ⁵.

Messrs. Fenwick & Company's tug, *Heroic* was dispatched to the wreck, while the Eden Pilot sent the ketch-rigged motor vessel, *S.E.A.* and the launch *Excelsior*. The survivors were collected and brought around to Eden after a trying trip, in which one boat had to be cut adrift and another put into Bittangabee ⁶.

Within two days of the tragedy, the *New Guinea* was reported to have slipped off the rocks and sunk, with only the bridge showing. The vessel had a large amount of cargo aboard, including machinery stored on deck ⁷.

5.6 LY-EE-MOON (1859 - 1886)

Prominent among the rolling green hills at Green Cape, south of Twofold Bay, are the tombstones erected to the seventy-one persons lost in the ss *Ly-ee-Moon* disaster of 1886.

One of the most atrocious disasters to befall a vessel on the New South Wales coast, details of the tragedy as related by the survivors, graphically illustrate the terrifying last moments of those onboard.

Built as an iron side paddle wheeler at Blackwall, London in 1859 the *Ly-ee-Moon*'s initial life was without incident. When the vessel was refitted in 1874 and converted to screw propulsion, the new compound direct acting surface condensing engine generated 160 horsepower. The graceful steamer retained its elegant clipper bow and now had a tonnage of 1202 tons and a length of 282 feet. Schooner rigged on its two masts, the *Ly-ee-Moon* had three decks ¹.

The steamer was specifically built for the rich opium trade which demanded very fast vessels. At the time of launching, the *Ly-ee-Moon* was “*considered a superior type of vessel*” and gained notoriety by gaining the unprecedented speed of 17 knots in its trial run, “*at the time the greatest speed attained by any vessel launched in English waters*”². The vessel had the same lines as the Royal steam yacht *Osborne* and was very expensively fitted out inside.

While employed in the opium trade as a paddle steamer, the *Ly-ee-Moon* was owned by Messrs. Jardine, Matheson & Company of Hong Kong and employed as a fast dispatch boat. With the advent of the telegraph, the vessel began a varied career in Chinese waters.

In 1874, the steamer was sunk in Hong Kong Harbour, raised, and refitted with new engines and boilers (Figure 7). Purchased by the Australasian Steam Navigation Company in 1877, it was brought out under Captain W. R. Stevens to run on the Fiji and Pacific Island trades.

The steamer attracted disaster within the year during an overhaul by the Company at their Sydney Pyrmont wharves. A catastrophic fire broke out completely gutting the vessel. Cost of reconstruction was estimated at £4000 but the company spared no expense and completely refitted the wreck³.

A fine reputation for fast services was soon restored and contemporary commentators marveled at the vessel’s qualities, where “*by her build, she was easily distinguishable from all other boats in the intercolonial service*”. With a clipper bow, the steamer did not pitch like other vessels and was able to maintain high speed in most conditions, “*Her deck was as nearly as possible level and special provision had to be made for throwing off a heavy sea, the tendency of the steamer being to cut clean through a heavy billow (wave) in torpedo fashion, rather than ride over it*”⁴.

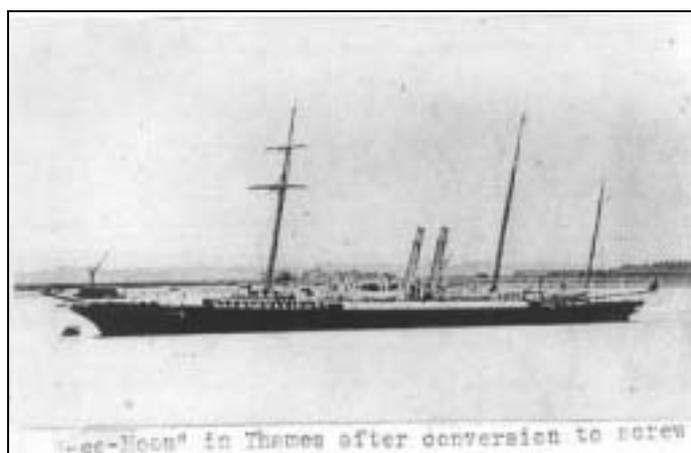


Figure 7: ss *Ly-ee-Moon* after conversion from paddle steamer to screw steamer. Courtesy: Mitchell Library, State Library of NSW.

The steamer was ultimately wrecked while travelling at a speed of 11.5 knots rounding Green Cape on the night of 30 May, 1886. Like the *City of Sydney* before it and the *New Guinea* later, Captain Webber had sighted the light of Gabo Island around 7.45 pm and left directions for the night’s course. Retiring to his cabin, command of the vessel with left to the Third Officer, Mr Fotheringham, with instructions that

he be contacted when the Green Cape light was sighted. Captain Webber appeared on deck unannounced at about 9 pm and was horrified to see the *Ly-ee-Moon* steaming directly for the rocks at the foot of the lighthouse.

The vessel crashed to a halt as he put the engines into reverse, but became stuck fast. Any hope failed when the hull broke completely in two after ten minutes. The stern remained on the outer reef, but the bow section containing the saloon broke away and drifted towards the shore⁵.

Captain Webber later explained the situation on deck soon after the steamer struck the rocks. “*I was rushing up the bridge ladder on the port side when the ship struck the rocks. I said to the Third Officer, why didn’t you call me up before she got up so close? He replied, “I thought we could pass close to the point”. He then remarked to me, “she has parted amidships”, I looked in that direction and I saw the forward funnel toppling over. I rushed with the intention of telling the passengers to come on deck, as it was their only chance for escape, the ship was in halves about fourteen or fifteen feet, the saloon staircase was all carried away, the saloon lights were all burning bright and the water was all rushing in with terrific force. I saw the body of a woman floating in the water*”⁶.



Figure 8: ss Ly-ee-Moon : passengers and crew at the mercy of the sea. *Town and Country Journal*, 12 June, 1886, p.1223.

The bow section drifted closer to shore against the outlying bommies and settled broadside, after turning completely around. Facing south, the wreck cantered over so much that the deck was nearly vertical. Those passengers and crew caught in this section were forced to cling to the rigging or stand outside along the edge of the hull, resting on portholes. *“The physical suffering of the passengers may perhaps be imagined if you will think of what it is like to receive a shower bath every two or three*

*minutes for a space of six hours. The seas which rolled over us came in tremendous volume and with terrific force, and my wonder is that more who clung to the wreck with the tenacity of dying men were not washed away”*⁷. At this time, the foremast washed overboard and just reached the shore. The boatswain and three seamen made their way along it to shore, but shortly afterwards, the end of the mast broke and the means of escape was ended⁸.

The pantryman clung tenaciously to the deck but, when falling asleep with exhaustion, was washed out of the rigging and drowned.

A line was fixed to the wreck from the few on shore, including the lighthouse keeper. By this means, approximately fifteen people were removed. While those above clung to the vessel’s railing, some twenty passengers remained trapped in the saloon because the companionway ladder was torn out. The sea *“swept through the saloon through and through and broke up all the cabins and all but one were to drown as that section filled with water”*.

The sole survivor from below decks was “little Adams”, a boy of twelve. In the frantic situation when the hull first separated, Adam’s mother refused to go up to the boat deck, so he followed her up forward. Adams later recounted how *“they were all praying, saying ‘God help us; God save us, ‘God save me”, then his mother cried out to him “Oh Harry, I’ve lost the baby - she must have let it slip out of her arms. By this time the lights had gone out, mother said to me ‘kiss me Harry and say good-bye’. I could not see her (in the dark) but I knew she had on one of those cloaks that they wear when going to the Opera”*. The last words she said were *“Oh I’m fine now”*, and he never saw her again⁹.



Figure 9: View of Ly-ee-Moon memorial in cemetery at Green Cape. (Photograph by David Nutley)

The boy managed to scramble up higher and found a porthole which he opened. Two passengers clinging to the outer hull managed to pull him through and he was later taken ashore by the rope *“in a semi-dying and unconscious condition”*. Adams was cared for by the lighthouse keeper’s wife and recovered, although it was difficult for them to remove his arms from around the neck of Mr Berglam, who had carried him there. The Captain was the last taken off the forward section, as the ship’s bell on the shattered foremast *“continued to toll a mournful dirge for those lost”*¹⁰.

The after part of the wreck, containing the engines and steerage accommodation remained fixed on the reef some 100 yards from the shore. It was totally impossible from anybody on shore to reach this section. All the engineers and the greater part of the crew and steerage passengers were lost. In a feat of sheer heroism, the Third Officer dived into the water with the only surviving female and attempted to get ashore. Unfortunately the woman was struck in the head by floating wreckage and died. Fotheringham was forced to return to the wreck.

Passengers clinging to the forward part of the hull nearest the shore recounted that “one of the most painful episodes of the night was the fact that the survivors had to stand and hear the cries of those onboard the aft part of the vessel, which remained somewhat stationary in the position where it struck, and to gaze upon the lighted wreck while feeling they were powerless to help. When the mast broke away many were carried away in the rigging, but at 4 o'clock on Monday morning there were still some alive in that portion of the vessel; but at daylight all were gone. The after part had disappeared, having broken up by the violence of the waves”¹¹.

In total, seventy-one passengers and crew lost their life. Those bodies that could be recovered were buried in a small cemetery away from the lighthouse, as they could not wait transportation to Sydney. At the later Marine Enquiry, Captain Webber was charged with gross negligence, but Third Officer Fotheringham who was in charge when the steamer struck, was not penalised¹².

5.7 LAWRENCE FROST (1854 - 1856)

The timber ship, *Lawrence Frost* was built at St. Johns, New Brunswick (Canada) in 1854 and was registered to the port of Liverpool in the United Kingdom. Owned by T. Frost, the vessel was intended to ply the routes between Liverpool and South America. Of 1523 tons, the ship was severely damaged just two years later and had to be broken up¹.

While on a voyage from Liverpool, the *Lawrence Frost* arrived off Port Phillip Heads in Victoria with a general cargo on the 17 August, 1856. The Pilot, Captain Singleton, boarded the vessel and navigated it towards the heads, planning to anchor just inside as the wind was unfavorable. While sail was being taken in, the stopper on the starboard anchor failed and the anchor, plus forty five fathoms of chain, ran out. The second anchor was immediately let go which brought the vessel into the wind, but it dragged and ran ashore near the Quarantine Station, taking six feet of water in the hold. While the lifeboat crew and the Government schooner, *Empire* raced to give assistance, the wind increased and a gale sprung up. Seas were now washing completely over the deck of the ship.

By morning, masts and yards were taken down to stop the continued rocking. The hull appeared to be severely damaged, due in part to the two thousand tons of cargo aboard including iron pipes. The *Lawrence Frost* sank with four feet of water above the main deck².

The vessel was lightened, floated off and repaired at Hobson's Bay. After several weeks, the ship departed for Sydney on the 22 October, in ballast, to await additional repairs. The steamer *City of Sydney* passed the *Lawrence Frost* thirty miles to the north of Twofold Bay. It was noted that the ship was heading back south. Once again in a sinking state, the *Lawrence Frost* was heading for a safe port³.

The *Lawrence Frost* ran into Twofold Bay on Sunday 26 October, grounding ashore near the Davidson Whaling Station site. Although the ship had only sand ballast aboard, it did not have sufficient pumps to remove incoming water⁴. A gale arose on the following day driving the vessel over the adjacent sand spit into deep water and was condemned. The hull split in two. All crew and miscellaneous items were removed from the wreck by the brig *Workington* and ketch *Numba*⁵.

Several buildings in the district were allegedly built from the stripped down hull⁶. One house adjacent to the wreck, was unfortunately burnt down in the 1930's. Another included the “Settlers Cottage”, later moved from Kiah and repositioned to the south of Pambula. The present owners have no proof of the fact however, as the original elderly owners have since died.

5.8 EMPIRE GLADSTONE (1944 - 1950)

The *Empire Gladstone* was a steel freighter built and registered at Sunderland in the United Kingdom in 1944. With a length of 429.8 feet and a tonnage of 7090 tons, the vessel was built by the Shipbuilding Corporation Ltd. and owned by the Ministry of Transport ¹ (Blane Steamships Ltd).

On a voyage to Sydney with a cargo of car bodies and iron ore, the freighter ran onto the Haystack Rock, near Merimbula on the New South Wales south coast on the night of 5 December, 1950. Stuck fast on the rocks and badly holed, heavy seas soon began to take their toll on the vessel. After several days the crew abandoned ship, taking their boats into Merimbula. The value of the vessel and cargo was estimated at £ 750,000. Car bodies and other items were removed and the vessel, however, the cargo of ore was lost ².

5.9 UNIDENTIFIED WRECK (? - c. 1850's)

The history of the vessel located some 35 nautical miles south-east of Green Cape (off Cape Howe) is unknown. Timber wreckage and associated artefacts began being raised to the surface in fishing nets during 1993-4. It appears that the vessel is Australian built and wrecked some time in the 1850's or 1860's (see: "*Wreck Site Description and Identification Analysis*" p.43).

The identity of the ship cannot be confirmed although it may have been a schooner or brig based on the timber scantlings identified to-date.

Many score of timber sailing schooners and brigs were lost off the New South Wales and Victorian coast during the nineteenth century. The vessel could have been one of those reported lost "*on a voyage between Sydney and*", etc. It is tempting to attribute the remains to one of the vessels of approximate size which are known to have been wrecked in the Disaster Bay area. The brig *Ann and Maria* (lost 1869) or the brig *Mina* (lost 1867), are both contenders and meet the date range of the wreck structure. Of particular interest is the wooden brigantine, *Prince of Wales*, built at the Richmond River, NSW in 1850 by William Wright. Of 112 tons gross and 73 feet in length, this copper sheathed vessel was found floating upside down some twenty-five miles south-east of Cape Howe in 1853, and presumed to have foundered¹.

Positive identification of the shipwreck structure remains unlikely, due to the depth of the site, the fragmentary nature of material accidentally raised to the surface, and the number of other wrecks potentially lost between New South Wales and Victoria.



Figure 10: Ship's timbers raised in fishing nets from unidentified shipwreck south-east of Disaster Bay. (Photograph by David Nutley)

6.0 CONSTRUCTION DETAILS

Sources: *Lloyds Register of Shipping*, London
British Register of Ships

Parsons, R., 1982, A Centenary: *Wrecks of Steamships in NSW 1836-1936*.
Magill, SA.

6.1 OLIVE CAM

Official No. 143528
British Register No. 6/1948 Sydney
Built: 1920.
Lost: 2 November, 1954. Near Mowarry Point, Twofold Bay.
Where Built: Beverley, United Kingdom.
Builders: Cook, Welton & Gemmell Ltd.
Owners: Cam & Sons Pty Ltd.
Construction: Steel fishing vessel, single screw steamer.
Dimensions: Length: 128.5'; Depth: 23.5'; Depth: 12.6'.
Tonnage: 289.45 tons gross.
Engine: Triple expansion direct acting inverted cylinder surface condensing.

6.2 LANERCOST

Official No. Unknown
British Register No. Unknown
Built: October, 1865.
Lost: 24 November, 1872 - near Mowarry Point, Twofold Bay.
Where Built: Harrington, United Kingdom.
Builders: ?
Owners: Mr Simpson, Adelaide.
Construction: Barque, timber.
Dimensions: Length: 123.7'; Breadth: 25.9'; Depth: 17.3'.
Tonnage: 358 tons gross.

6.3 OLIVER FROST

Official No. 40943
British Register No. 71/1856 Sydney
Built: 1831
Lost: 6 October 1856, 9 miles sth of Twofold Bay, near "Goodburz Point".
Where Built: St Marys Bay, Nova Scotia, Canada
Builders: ?
Owners: ?
Construction: Wooden Brigantine.
Dimensions: Length: 89.3'; Breadth: 22.1'; Depth: 9.2'.
Tonnage: 150 tons gross

6.4 CITY OF SYDNEY

Official No. 32448
British Register No. 40/1854 Sydney
Built: 1853.
Lost: 6 November, 1862 - Green Cape.
Where Built: Glasgow, United Kingdom.
Builders: Smith & Roger, Glasgow.
Owners: Australasian Steam Navigation Company Ltd.
Construction: Iron, single screw steamship. 3 masts, barque rigged. 3 decks.
Dimensions: Length: 207.8'; Breadth: 27.0'; Depth: 17.3'.
Tonnage: 735 tons gross.
Engine: Steam, 180 hp.

6.5 NEW GUINEA

Official No. 89634
British Register No. 6/1893 Melbourne

Built: 1884.
Lost: 13 February, 1911 - Green Official No.
Builders: W. Doxford & Sons, Sunderland.
Owners: McIlwraith, McEacharn & Co, Melbourne.
Construction: Iron, single Screw steamship. 2 decks, 2 masts, Schooner rigged.
Dimensions: Length: 300.0'; Breadth: 40.1'; Depth: 24.5'.
Tonnage: 2674 tons gross.
Engine: Compound, surface condensing - 260 hp.

6.6 LY-EE-MOON

Official No. 28737
British Register No. 19/1878. Sydney
Built: 1859.
Lost: 30 May, 1886 - tip of Green Cape.
Where Built: Blackwall, London.
Builders: Thames Iron Works.
Owners: Australasian Steam Navigation Company.
Construction: Iron, single screw steamer. 3 decks, 2 masts, schooner rigged.
Dimensions: Length: 282.7'; Breadth: 27.3'; Depth: 16.6'.
Tonnage: 1202 tons gross.
Engine: Compound, direct acting surface condensing, 160 hp by Ouseburn Engine Works, Newcastle upon Tyne.

6.7 LAWRENCE FROST

Official No. Unknown
Built: 1854.
Lost: 26 October, 1856. Beached at Twofold Bay.
Where Built: St. Johns, New Brunswick (Canada).
Builders: ?
Owners: Lawrence Frost & Co., Liverpool.
Construction: Ship, timber.
Dimensions: ?
Tonnage: 1523 tons gross.

6.8 EMPIRE GLADSTONE

Official No. 180134
Built: 1944.
Lost: 5 September, 1950 - Haystack Rock, Merimbula.
Where Built: Sunderland, United Kingdom.
Builders: Shipbuilding Corporation Ltd. Sunderland.
Owners: ?
Construction: Steel freighter, 2 decks.
Dimensions: Length: 429.8'; Breadth: 56.3'; Depth: 35.2'.
Tonnage: 7090 tons gross.
Engine: Triple expansion, Marham & Co Ltd., Chesterfield, UK.

6.9 UNIDENTIFIED

British Register No. Unknown.
Built: Unknown.
Lost: c.1850's based on artefacts recovered with vessel timbers.
Wrecked 35 nm SE of Green Cape. Located by fishermen in 700 ft water.
Where Built: Australia.
Builders: Unknown.
Owners: Unknown.

Construction: Timber - includes cedar, spotted gum and boxwood timbers.
Dimensions: unknown - potentially a schooner or brig (based on timber dimensions).
Tonnage: Unknown.

7.0 WRECK SITE DESCRIPTIONS AND IDENTIFICATION ANALYSIS

7.1 OLIVE CAM (1920-1954)

The staff of the *Merimbula Divers Lodge*, Merimbula pinpointed the position of wreckage attributed to the *Olive Cam* site. Exposed to heavy seas from the south, the wreck site is largely broken up with isolated items spread along several underwater gullies. The boiler, winch and a Lt. Rodges small palm anchor were located very close to a reef which extended from the shore. The maximum depth of the site was found to be thirteen metres. Attribution of the wreck site to the *Olive Cam* was confirmed based on the surviving components of the vessel. The site was not photographed or recorded in detail as it has been adequately identified and is not presently protected under the *Historic Shipwrecks Act, 1976*. A GPS position was obtained for the remains.



Figure 11: General photograph showing the location of the *Olive Cam* wreckage which is spread within a large gully (marked by arrow), close up to the fringing reef. (Photograph by David Nutley)

7.2 LANERCOST (1865-1872)

A shipwreck located approximately half a mile north of Mowarry Point has previously been identified locally as one of two wrecks, the timber barque, *Lanercost* or the timber brigantine, *Oliver Frost*. These identifications have been made on the basis of contemporary reports which placed both wreck events in the general vicinity of Mowarry Point, Twofold Bay.

As discussed in Section 5.2 “Historical Context”, newspaper reports placed the *Lanercost* wreck half a mile south of Mowarry Point. It is likely that this is a misprint in the contemporary newspapers, and should read “half a mile north of”, a position where the known timber shipwreck remains are located.

The remains are unlikely to correspond to the *Oliver Frost*, which was stated to have been wrecked nine miles south of Twofold Bay, near a place called Goodburz Point. This term is no longer in usage and could not be found in the Geographical Names Board’s register. The stated distance from Twofold Bay however, would place the event much further to the south of the observed wreckage, midway between Bittangabee and Mowarry Point. Local charts show a prominent headland at this position. Underwater surveys have not been conducted in this area, which warrants a closer examination to access the possibility of *Oliver Frost* wreckage being located. Clarification of the local coastal names and their derivation is being sought from local historical societies. The possibility that the *Oliver Frost* wreck drifted north of this point and sank, cannot be ruled out.

During the survey of the known wreck site, material was located in the western-most of two gullies which run roughly North-South from the shore. Large swells occasionally pass into

these gullies, concentrating shipwreck material at the landward end. The extremely scattered wreckage included miscellaneous iron beams, some of which gave the impression of being badly weathered “knees” - internal frames commonly found on large timber vessels. An iron hawse pipe was located near to a pile of very concreted anchor chain which wrapped around several boulders. The chain comprised stud and chain links.

A weathered piece of timber was located in the gully attached to copper alloy sheeting (probably Muntz Metal - c.1840's →), confirming that a timber hulled, copper sheathed vessel was wrecked in the general vicinity. A small sample of timber was extracted for species identification and forwarded to the Queensland Department of Primary Industries, Forestry Section. The sample was found to be a hardwood, although its exact identification could not be confirmed. Further scraps of copper sheathing and sheathing tacks were found distributed throughout the pebbles and boulders of the gully floor. Visibility was excellent throughout the duration of the dive.

Mr John Riley, Mr John Mathieson and the staff of Merimbula Divers Lodge had reported that ship's timbers had previously been located some 200 metres east of the gully, out in deeper water. A local resident allegedly undertook extensive disturbance activities at the site during the 1960's, in the mistaken belief that a vessel had been wrecked there with a cargo of gold dust. Several sections of hull timbers were uncovered using a dredge, one comprising an area of timber “decking”, which might have been hull planking. All areas were disturbed and totally unrecorded. It is unknown whether any artefacts were located during these operations, which ended due to a lack of finances. From verbal communications, it appears that the area of ‘decking’ may have been located in deeper water than that recorded during the current inspection.

During the current survey, a large sand patch was found at a depth of twenty metres, directly out from the northern-most point. An inspection of this site led to the sighting of several iron ‘frames’ protruding from the flat sand, over a length of ten metres. A limited probe survey was conducted using a probe attached to an air cylinder. Substantial dressed timbers were located just five to ten centimetres beneath the current sand levels. A section of planking was recorded before being reburied by hand fanning (Figure 16). The probing indicated that the timbers covered an area approximately ten x two metres, although the potential for other sizable portions of wreckage could not be discounted.

Two timber samples were extracted from the uncovered hull section. One came from a timber identified as being part of the outer planking of the vessel, the other from a ceiling (or internal) timber. These samples were forwarded to the Queensland Department of Primary Industries, Forestry Section for analysis. The small outer planking timber again, could only be identified as a hardwood, the ceiling timber being Greenheart (*Ocotea rodiaei*). This is a commercial hardwood often used in shipbuilding and derives principally from Guyana in Africa and the Northern Hemisphere. The ceiling timbers measured 18 centimetres (7 inches) or 23 centimetres (9 inches) in width, a measurement for the outer planking could not be recorded. The timber scantlings are consistent with a vessel the size of a barque or ship. At present, the timber identifications do not assist in the identification of the shipwreck site, other than to exclude it being of Australian manufacture. The presence of Greenheart timbers in the vessel's construction might add support to the site being the *Lanercost*, built in the United Kingdom. The use of Greenheart in Canadian shipbuilding yards, where the *Oliver Frost* was built, cannot be discounted.

The original Lloyd's *Building Survey Report* for the *Lanercost* and the *Oliver Frost* vessels is being sought from the National Maritime Museum in Greenwich, United Kingdom. It is hoped that the dimensions of the timbers recorded during the survey can be compared to those in the Register, in order to positively identify the site as the *Lanercost*.

Fastenings included copper alloy clinch bolts and wooden treenails of 3.5 centimetres (~ 1.5 inches) diameter. The timbers were generally sound although some showed evidence of toredo worm damage suggesting that they become periodically exposed. A GPS position was obtained for the buried hull structure.

An American silver one cent coin was located on the site by Mr John Riley during the 1970's and declared under the Historic Shipwrecks Amnesty (Figure 16). This coin, located in the

gully, was minted in 1864, and is currently the strongest evidence for the wreckage being linked to the *Lanercost*. The brigantine *Oliver Frost*, was wrecked in 1856 and could not have had an 1864 coin aboard.

Local diver, John Mathieson also recovered several artefacts from the site which were subsequently declared under the Amnesty. These were loaned to the Heritage Office for detailed study during the current survey period. They consisted of a silver plated spoon, a key, a vane from a ship's log, a copper fastening spike and the lens of a telescope. These items were drawn and photographed (Figure 13 & 14).



Figure 12: General photograph showing the location of wreckage tentatively attributed to the *Lanercost* (1872). The arrow to the left indicates the location of the gully in which scattered wreckage was located. The arrow to the right denotes the approximate position of the buried hull section. (Photograph by David Nutley)

The vane from the ship's log (Figure 18) was marked with an anchor insignia and the letters "T.W." beneath. These letters refer to the maker's name, Thomas Walker, a prominent designer and manufacturer in the development of ship's logs during the nineteenth century. The markings indicate that the vane or fin came from a Walker's "Harpoon Log No.2" type which was patented in 1866. This model, according to Mr Kieran Hosty, Curator of Maritime Archaeology at the Australian National Maritime Museum, was superseded in 1879 by the Taffrail Log made by his sons, following Walker's death in 1873 (Source: Peabody Museum: Collection of Navigational Instruments, 1967). The *Oliver Frost*, wrecked in 1856, could not have carried an 1866 designed log aboard.

Based on this initial analysis, it seems probable that the wreck can be attributed to the *Lanercost*. The accumulated evidence includes: the dating of the coin, the vessel's Log and the general dimensions and origin of the timbers: all consistent with the *Lanercost* barque built in 1865 and wrecked in 1872. An additional search of the surrounding areas, particularly the headlands between Bittangabee and Mowarry Point, is required in an effort to locate remains which might be linked to the wreck of the *Oliver Frost*.

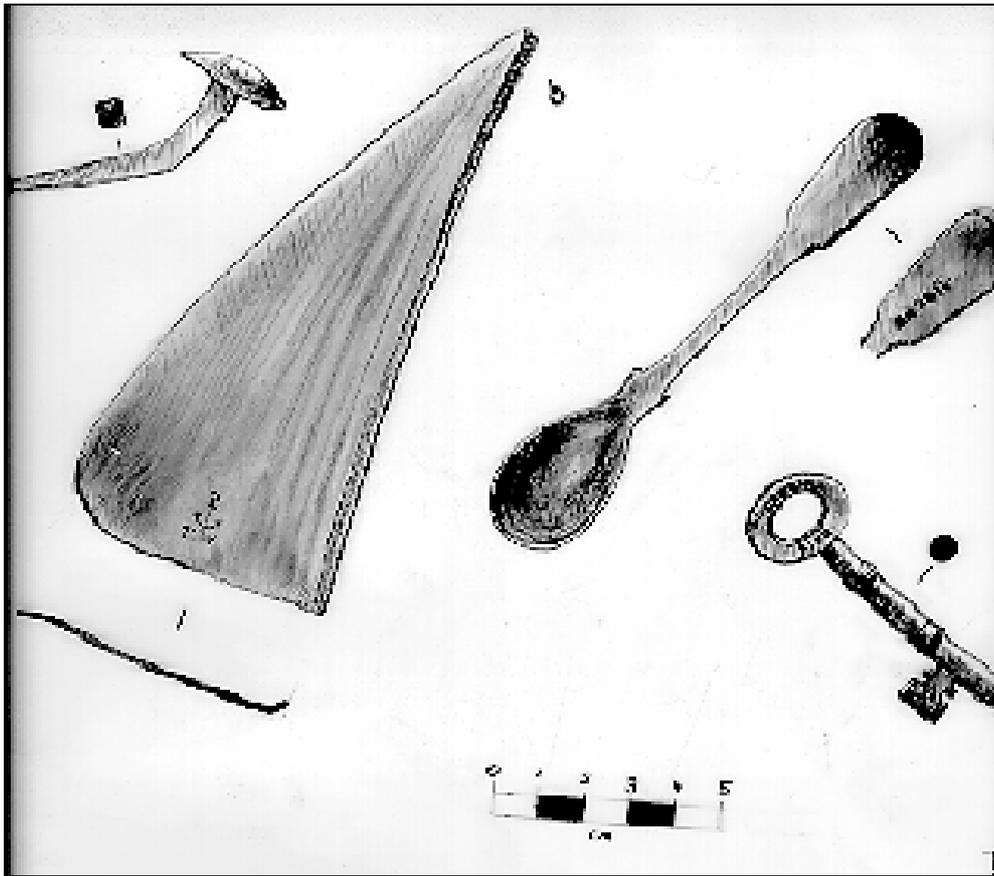


Figure 13: Measured drawings of artefacts recovered from the Lanercost (1872) wreck site and declared under the Commonwealth's Historic Shipwrecks Amnesty. Courtesy: Mr John Mathieson, Eden. (Drawn by : Tim Smith)



Figure 14: Photograph of the same objects recovered from the Lanercost wreck site.



Figure 15: Tim Smith recording section of hawse pipe from Lanercost .
(Photograph by David Nutley)



Figure 16: Ceiling timbers from buried portion of hull, tentatively attributed to Lanercost wreck.
(Photograph by David Nutley)



Figure 17: American one cent coin from Lanercost site.
Dated 1864, the coin is 19 millimetres in diameter.
Courtesy Mr John Riley.

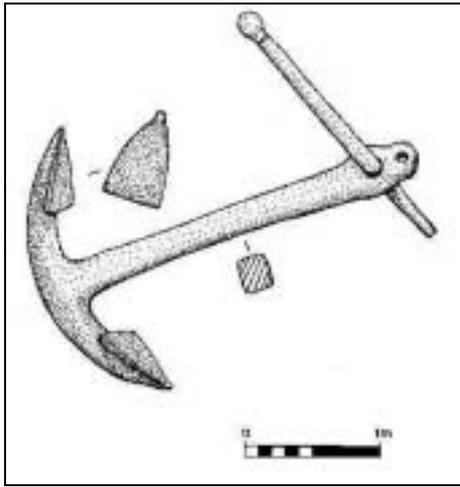


Figure 18: A vane from ship's log, Lanercost site.
Dated to c. 1866.

7.3 CITY OF SYDNEY (1854-1862)

The wreckage of the *City of Sydney* has been visited regularly since the advent of SCUBA diving in the 1950's and its identification has never been disputed. The vessel went ashore at "City Rocks", approximately half way along Green Cape, on the Disaster Bay side.

Extensive wreckage can be readily detected, spread down the gentle slope from the shore into deeper water. Prominent features include the two identical large iron Admiralty pattern anchors, 2.5 metres in length. One is located on sand in twenty two metres of water at the deepest part of the site, the other amidst the greater part of the wreckage in approximately 16 metres. The majority of the site comprises fragments of the hull's iron plating and framing, although the wreck is extensively broken up due to the exposed nature of the site and early salvage activity.



The two anchors were drawn (see example in 19), the rest of the site being recorded on video and still photography. A GPS position was obtained for the site.

The majority of shipwrecks located in the Disaster Bay region have been heavily disturbed by salvors and recreational divers during the 1960's, prior to the implementation of legislation protecting Historic Shipwrecks, i.e. the Commonwealth's *Historic Shipwrecks Act*, 1976.

Figure 19: One of the City of Sydney's two impressive Admiralty Pattern anchors as recorded on site. This example was located in twenty-one metres of water. (Drawn by Tim Smith)

All relics removed from these sites were done so without scientific recording or adequate conservation treatment. The existence of several collections of relics have now been notified to the Heritage Office during a Federal Historic Shipwrecks Amnesty, held in 1993-4. These collections largely comprise items of cargo or miscellaneous fittings removed from the sites, particularly from the larger *City of Sydney*, *New Guinea* and *Ly-ee-Moon* wrecks.

7.4 TIMBER "KNEE"

While moving from the *City of Sydney* wreck site to the *New Guinea*, Mr Cam McColl (Merimbula Divers Lodge) pinpointed a large timber located in a small bight on the southern side of Green Cape. Wading ashore and inspecting the beach, the timber was identified as being a 'knee' or 'framing piece', which might have derived from a large timber vessel. Located amongst extensive deposits of drift wood, which seem to collect largely at that spot, the origin of the timber could not be determined. Based on the dimensions (1.20 x 0.90 metres), the object appears to be a 'stern knee' (an angular timber that reinforces the joint between the keel or lower deadwood and the stern post, or perhaps a hanging knee (deck support) on a large timber vessel such as a barque or ship. The knee was drawn and photographed (Figure 20-21).

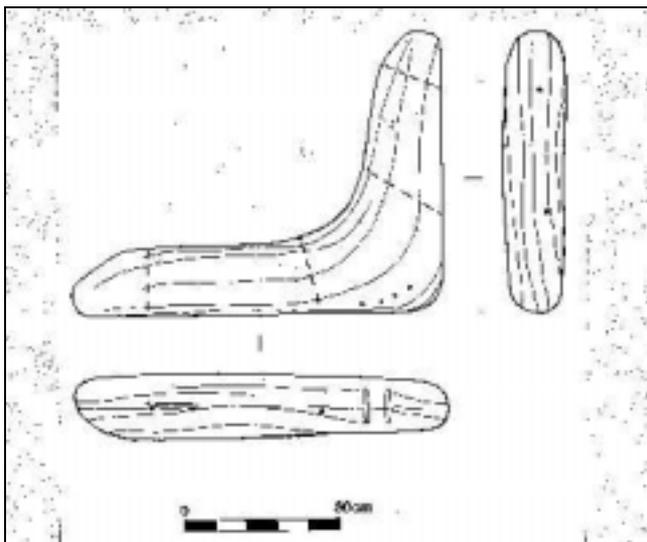


Figure 20: Drawing of timber "knee" located in small bay west of ss New Guinea site. (Drawn by Tim Smith)



Figure 21: Photograph of the timber "knee" in a small bay near New Guinea wreck site. (Photograph by David Nutley)

7.5 NEW GUINEA (1884-1911)

The wreck site of the ss *New Guinea* is marked by an exposed iron anchor concreted on the shore line. A general inspection of the underwater site was conducted and the bulk of the wreckage recorded on video.



Figure 22: Wreckage of the ss *New Guinea* - includes a portions of the vessel's drive shaft. (Photograph by David Nutley)



Figure 23: Section of lower hull, ss *New Guinea*, fragments of which can be found across the site. (Photograph by David Nutley)

Similar to the *City of Sydney* wreck, the area is prone to extreme sea activity from the south, resulting in the wreckage being fragmentary and scattered. Major features included a large section of hull flooring, the propeller shaft lying in two pieces, and portions of the four bladed propeller. The site extends from the shoreline (although this area could not be fully inspected due to swell on the day), out to approximately 10 metres in depth. A GPS position was gained for the principle wreckage. Like the *City of Sydney* and the *Ly-ee-Moon* sites, substantial salvage activity has effected the site's integrity and its archaeological potential.

7.6 LY-EE-MOON (1859-1886)

This is arguably the most exposed shipwreck site in New South Wales. An inspection was conducted during the current survey but was limited to a brief visual survey due to a rising swell and brewing storm.

Large seas repeatedly carry over the wreck, located amongst two exposed bommies under the point of the Green Cape lighthouse. The major identifiable piece of wreckage include a large propeller shaft previously noted by Mr David Warth (*Merimbula Divers Lodge*). It was evident that the wreckage is extremely broken up and scattered around the point. Few shipwreck relics could be identified at the seaward end of the main gully leading into the site. The remains have been largely dispersed by the extreme sea conditions, although extensive salvage activities undertaken during the 1960's, have contributed to its denuded nature.



Figure 24: View of the tip of Green Cape where *Ly-ee-Moon* came to rest in 1886 (Photograph by David Nutley)

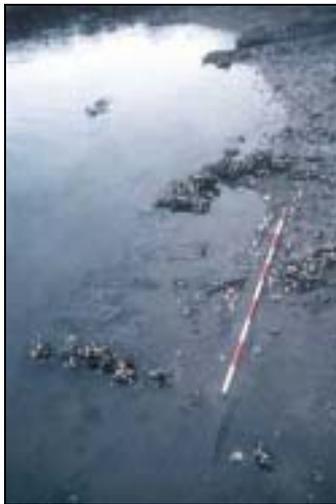
Several lead ingots were located in the smaller gullies. David Warth had also previously located a smaller propeller shaft on the site which seemed at odds with the scale of the *Ly-ee-Moon* wreckage. It was postulated that the *Lady Dorris*, a vessel used to salvage materials from many of the local wrecks, was also lost there (see Section 4.2). Later conversations with Mr Carlo Filippetti indicated that this vessel was actually wrecked at Bittangabee. Video footage was taken of the site and an accurate position determined.

F

7.7 LAWRENCE FROST (1854 - 1856)

Historic records had indicated that the timber ship *Lawrence Frost* had been condemned and broken up near the Davidson Whaling Station site. The timbers were allegedly used to construct local houses near the Kiah township. A visual inspection of the beach area around the Whaling Station site failed to find any strong evidence of shipwreck material. Local residents, Ben and Nellie Rixson were contacted and showed the team some partially submerged timbers on the beach near an oyster lease. These timbers were examined, drawn and photographed (Figure 25). It was evident that the timbers were reused and may have originally derived from a shipwreck. Several showed evidence of earlier fastening holes which had since been sawn in half. These fastenings were similar to recesses left by treenails or large 'clinch' bolts, commonly used in timber shipbuilding. In their current form, the timbers appear to have been reused to form a small jetty or boardwalk approximately 0.85 metres wide. A series of small jetties were once located in the area (Ben Rixson showed photographs of two small jetties built by a local resident in the approximate vicinity of the current remains). These earlier jetties have since been destroyed by floods.

Historical records indicated that much of the hull of the *Lawrence Frost* was reused for building purposes, possibly leaving the keel and a few frames. It is conceivable that further remains might be located out in the deeper water of the estuary, but buried under sand.



Frost
(Photograph by David Nutley)

During heavy storm activity, waves are known to break over the sand spit on the ocean side of Twofold Bay. This activity might also have led to dispersal of any timber remains.

Due to a mechanical malfunction, the Ferex Magnetometer, was unable to be operated in the Whaling Station Survey. It was hoped that remains of any buried shipwreck structure and associated iron fastenings, might have been located.

A timber sample extracted from the site was identified and found to be Larch (*Larix sp.*). Larch is a commercial softwood which originates mainly in North America. It is therefore highly probable that the recorded timbers derived from the *Lawrence Frost* wreck site, the vessel having been built in Canada.

Figure 25: Photograph of timber sections thought to originate from *Lawrence*

7.8 EMPIRE GLADSTONE (1944 - 1950)

The popularly dived site of the steel steamer *Empire Gladstone*, wrecked on Haystack Rock, Haycock Point, Merimbula, was inspected. Major features were photographed, while the extent of the wreckage was recorded on video.



Figure 27: Diver inspecting cabin sections of the *Empire Gladstone* wreck
(Photograph by David Nutley)

Figure 26: Heritage Office maritime archaeologists exploring the *Empire Gladstone* wreck site at Merimbula. The vessel's large boilers can be seen in the background.
(Photograph by David Nutley)



Remains of the wreck have survived well, despite large swells which periodically flow over the site, located in just ten metres of water. The vessel settled upright and portions of deck structure and associated machinery can be readily identified across the 135 meter extent of the site. Principal remains include the relatively intact 'cabin' areas amidships, the large boilers upended, the engine and both propeller shaft housings, which offer excellent swim throughs. The bow and stern of the site have suffered more deterioration and are less discernible. A GPS position was obtained for the remains.

7.9 UNIDENTIFIED

Several shipwrecks have been located in the Merimbula - Twofold Bay - Disaster Bay area by deep sea fishermen since at least the 1960's. A beautifully preserved copper sheathed timber rudder was donated to the Eden Killer Whale Museum during the 1970's when accidentally snagged from a shipwreck off Merimbula. Now on display at the Museum, the original location of the shipwreck has not been ascertained. Based on the dimensions of the rudder and its form, it appears likely to have come from the wreck of a timber schooner. The presence of copper sheeting or Muntz Metal, dates the rudder after the c.1840's. A timber sample was collected and identified as Oak (*Quercus sp.*). Originating in the northern hemisphere, this suggests that the vessel was foreign built.

Another unidentified timber shipwreck was located south of Eden by two local fishing trawlers, the *Terrace Star* and *James Kerlin*. They accidentally snagged the wreckage whilst deploying demersal trawl arrangements. The site is located some 35 miles south east of Green Cape (adjacent to Cape Howe) in 213 metres of water (700 feet). It is apparent that the site has been snagged on a number of occasions, in one instance bringing a section of timber mast to the surface together with human bones, all later let go (Neil Kelly: Pers. Com.).

The discovery was reported to the Heritage Office in 1994 (formerly the Department of Urban Affairs and Planning) as required under Section 17(1) of the Commonwealth's *Historic Shipwrecks Act, 1976*.

A common trawling practice, the demersal trawl technique involves a boat deploying a V-shaped net at depth, attached to the boat by two sweep wires which keep the entrance of the net open. Trawl boards attached to the cable warps assist this process. Using this

arrangement, a trawler can fish along a run for anything up to twenty kilometres in length, accurately keeping on course with the aid of DGPS navigation.

Unfortunately, the extensive nets and associated gear can easily entangle on shipwreck remains if trailing close to the sea floor. The operator may have no indication that the net has made contact with a shipwreck until they are retrieved by the vessel at the end of the run. Fixing an accurate position for the contact can then be difficult. The nets are deployed over an area of some 50-150 metres of the sea floor and therefore cover a wide area as they pass.

To-date, eleven timbers have been accidentally raised and deposited with the Eden Killer Whale Museum. Two of these are framing pieces with the remnants of outer hull planking attached. They contain evidence of having been copper sheathed and pit sawn. The planking is attached to the frames with a combination of timber treenails and square sectioned copper alloy spikes. A well preserved mast-step and two balusters, possibly from a deck railing or Fife rail are notable items. One large timber appears to be a *Floor Piece* as two limber holes (for drainage) are readily identified either side of the recess for the rider keelson. The timber might also be identified as a *Fashion Piece* (timbers that give the form or fashion of the after extremity, below the wing transom, when they terminate at the tuck in square sterned vessels), however this is unlikely due to the presence of the drainage grooves.

The timbers were photographed and key diagnostic pieces drawn to scale (Figures 28-32). Timber samples had previously been taken of several timbers by Eden Forestry and found to be Australian species, including Brushbox and Tea-tree, with perhaps some cedar. A recently collected timber frame was recorded by the survey team at Mr Kelly's home and transferred to the Museum for treatment with the existing finds. This frame appeared to have come from near the bow of the vessel based on its curvature and orientation.

Several artefacts have been brought to the surface with the timbers and are in the custody of Mr Neil Kelly. They comprise two square sectioned glass bottles, a small timber pulley sheath, a metal serving tray, a blue and white transfer printed plate, a leather shoe attached to an iron concretion, and two cylindrical ceramic jars.

The shoe was transferred to Heritage Victoria, in the Office of Planning and Heritage within the Department of Infrastructure, for conservation treatment. The item is currently undergoing desalination. The remaining artefacts were drawn and preliminary identifications undertaken, the most diagnostic pieces being the glass jars and the ceramic plate. Mr Wayne Johnson from the *Sydney Cove Authority*, Sydney has identified the glass vessels as "Tobacco Jars". These jars were used to transport snuff in quantities and, based on their form, can be dated from the late 1840's to the early 1860's. The ceramic plate has a double ring foot and willow pattern design, features which can be date the object between the 1830's to the 1850's.

As noted, all timber samples previously collected were identified as Australian. It is apparent therefore, that the vessel was Australian built. The dimensions of the timbers recovered to-date suggest that the vessel may have been as large as a coastal schooner or brig, and possibly in the order of 150 - 300 tons. It is to be noted that the vessel appears to have been relatively lightly built. Based on artefacts recovered from the site, the vessel was lost some time between the 1840's - 1860's. This date range is consistent with the hull fastening types observed and the existence of copper sheathing on the outer hull timbers. At present, it is unlikely that the site can be positively identified. It is tempting however, to tentatively attribute the remains to the wooden brig *Prince of Wales*, lost in the area in 1853. Built at the Richmond River in New South Wales, copper sheathed and of appropriate dimensions to the observed wreckage, the raised artefacts are consistent with this vessels date of loss (see Section 5.9).

Figure 28: A mast step recovered from the unidentified wreck site located off Cape Howe. (Drawn by Tim Smith)

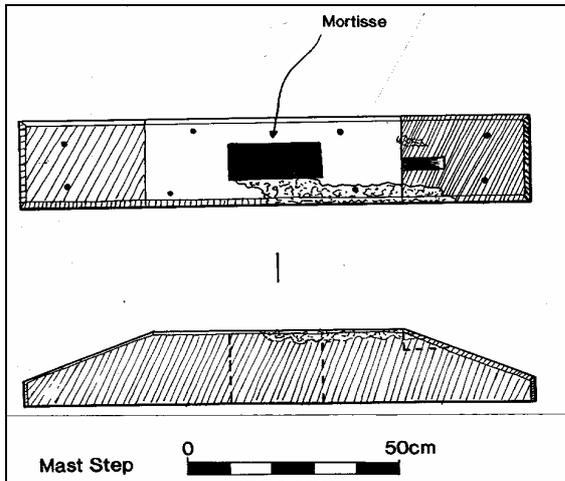


Figure 29: Timbers recovered from the unidentified wreck site located off Cape Howe (Drawings by Tim Smith)

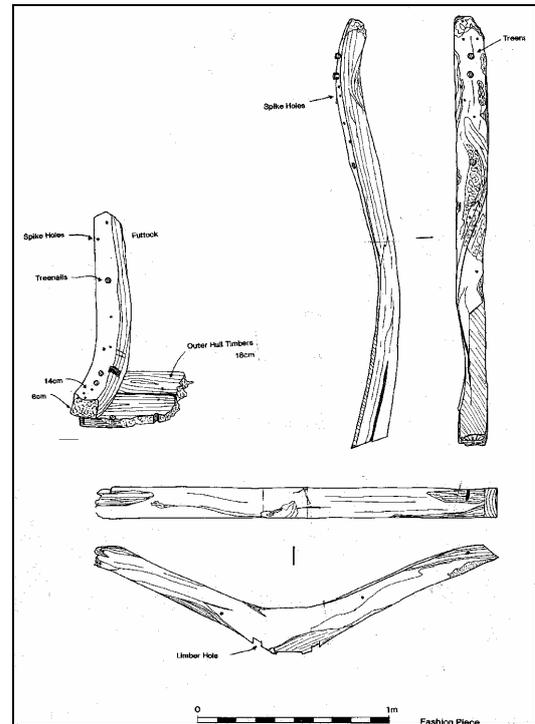
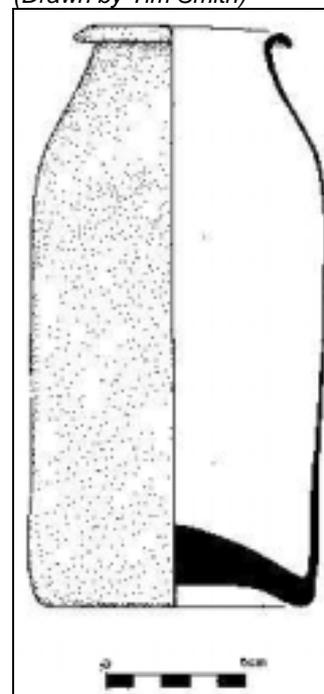


Figure 30: Timbers recovered from the unidentified wreck site located off Cape Howe (Photographs by David Nutley)



Figure 31: Measured drawing of one of two glass 'tobacco' jars that assisted the dating of the site. (Drawn by Tim Smith)



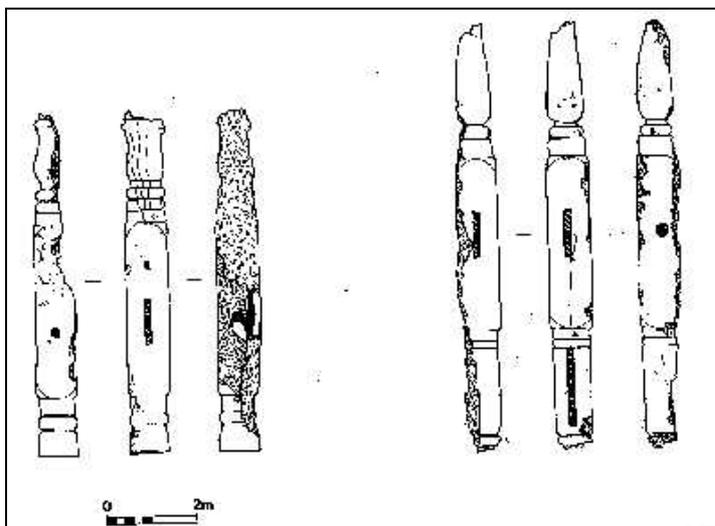


Figure 32: Measured drawings of two small turned posts, recovered from the unidentified wreck off Green Cape. They may belong to a fence or rail aboard the vessel. (Drawn by Tim Smith)

7.10 ANCHORS

Five anchors were observed in the study area which have ultimately derived from local shipwreck sites or some other source. These were inspected, photographed and drawn and added to the Office's inventory of ships' anchors displayed in public parks and other venues throughout the State. One large mooring anchor was located at Merimbula near the Bridge, one Trotman's type at Pambula outside of McKell's Eating House, and three located in Eden, at the Eden Fisherman's Club, the Eden Killer Whale Museum and the Eden Information Centre. The Information Center anchor was recovered by the trawler *Rikara Star*, one kilometer South-East of the Eden Pilot Station (Source: Eden Information Centre).

7.11 G.P.S. POSITIONS

The following shipwreck positions were obtained during the survey period using a Magellen Global Positioning System (G.P.S.) in static averaging mode.

OLIVE CAM	LAT -37° 09' 15S	LONG - 150° 00' 36E
LANERCOST	LAT -37° 08' 26S	LONG - 149° 59' 48E
EMPIRE GLADSTONE	LAT -36° 57' 14S	LONG - 149° 56' 79E
CITY OF SYDNEY	LAT -37° 15' 46S	LONG - 150° 00' 70E
NEW GUINEA	LAT -37° 15' 67S	LONG - 150° 02' 28E
LY-EE-MOON	LAT -37° 15' 90S	LONG - 150° 02' 93E

8.0 ASSESSMENT OF SIGNIFICANCE

Significance has been assessed in accordance with the nature and degree of significance of the sites' primary attributes. These include attributes related to historical, social, archaeological, scientific and interpretative significance.

8.1 OLIVE CAM

NATURE OF SIGNIFICANCE

Archaeological (Concerned with research potential through investigation of material remains)

The remains of the *Olive Cam* have minimal archaeological potential for documenting ship construction at the turn of the century. The site's archaeological potential has been severely reduced through salvage work by sports divers from the 1960's.

Social (Concerned with community regard or esteem)

The *Olive Cam* is significant for its associations with the local population of Twofold Bay following the wrecking. A wreck event which remains in the contemporary folklore.

Interpretative (Concerned with public education values)

The site has potential for interpretation through interpretative plaques/brochures as part of general interpretation of the maritime dangers of the Disaster Bay - Twofold Bay area until recent times.

DEGREE OF SIGNIFICANCE

Representative (concerned with the typical or characteristic)

The *Olive Cam* is representative of the dangers associated with fishing operations on the volatile seaboard of the NSW south coast, during the nineteenth and into the twentieth centuries.

STATEMENT OF SIGNIFICANCE

The site has limited archaeological potential due to the fragmentary nature of the remains, and the likely dispersal/removal of surviving portions of the wreck structure since that discovery.

The *Olive Cam* wreck site has the potential to be an important component of a Twofold Bay Interpretative Wreck Trail as an example of the loss of a mid twentieth century fishing vessel near the entrance to that port.

8.2 LANERCOST

NATURE OF SIGNIFICANCE

Historical (Concerned with range of context)

The *Lanercost* is significant as one of two large sailing vessel to have been wrecked in the Twofold Bay - Disaster Bay area last century.

Technical (Concerned with technical or creative achievement)

Remains of the *Lanercost's* structure would be of moderate significance as a record of shipbuilding technology during the mid nineteenth century.

Archaeological (Concerned with research potential through investigation of material remains)

The remains of the *Lanercost* have moderate archaeological potential for documenting ship construction during the mid nineteenth century. The site's archaeological potential has been reduced through later salvage

work by divers during the 1960's. The site retains potential for research leading to the confirmation of the site's identity.

Social (Concerned with community regard or esteem)

A site important for its popular links with the Twofold Bay population who retain significant memories of the loss.

Interpretative (Concerned with public education values)

The site has potential for interpretation through shore based interpretative plaques/brochures as part of general interpretation of the maritime dangers of the Twofold Bay area.

DEGREE OF SIGNIFICANCE

Representative (concerned with the typical or characteristic)

The *Lanercost* is representative of wooden barques constructed in the United Kingdom in the mid-late nineteenth century. The wreck site embodies the dangers associated with sea travel along the southern NSW coast during the nineteenth century.

STATEMENT OF SIGNIFICANCE

The *Lanercost* wreck site has the potential to be a significant component of a Twofold Bay Interpretative Wreck Trail as an example of the loss of a large interstate sailing vessel. The remaining structure retains archaeological potential regarding shipwreck disintegration patterns and modeling.

8.3 CITY OF SYDNEY

NATURE OF SIGNIFICANCE

Historical (Concerned with range of context)

The *City of Sydney* is significant as the first vessel reported wrecked in Disaster Bay since European contact.

The steamer is representative of large iron steamers constructed in the mid-nineteenth century during a period of rapid design development.

The site is significant in representing the plight of many large vessels lost in Disaster Bay due to the treacherous coastal conditions.

Archaeological (Concerned with research potential through investigation of material remains)

The wreck site has minimal archaeological potential due to the destruction of the remains through the exposed nature of the site, and by the activities of salvage divers.

Interpretative (Concerned with public education values)

The site has potential for interpretation, through shore based interpretative plaques/brochures, of the first loss of a large coastal steamer in the Disaster Bay region.

DEGREE OF SIGNIFICANCE

Representative (concerned with the typical or characteristic)

The *City of Sydney* is representative of large coastal passenger steamers built in the United Kingdom during the middle of the nineteenth century. The wreck site embodies the dangers associated with sea travel along the southern NSW coastline during this period.

STATEMENT OF SIGNIFICANCE

The *City of Sydney* is important in being the first of many vessels which were accidentally caught in the treacherous waters of Disaster Bay during the nineteenth and into the Twentieth century.

The *shipwreck site* has the potential to be a principle component of a Disaster Bay Interpretative Wreck Trail, being an accessible site for divers and land based visitors with established shore based access routes and signage.

8.4 NEW GUINEA

NATURE OF SIGNIFICANCE

Archaeological (Concerned with research potential through investigation of material remains)

The site has limited archaeological potential due to the fragmentary nature of the surviving structure.

Analysis of the surviving structure could assist general studies of the construction and powering of large iron steamers built during the latter nineteenth centuries.

Interpretative (Concerned with public education values)

The site has potential for interpretation through shore based interpretative plaques/brochures as part of general interpretation of the maritime dangers of the Disaster Bay area into the twentieth century.

DEGREE OF SIGNIFICANCE

Representative (concerned with the typical or characteristic)

The site is representative of coastal steamers wrecked while attempting to pass the navigational hazard of Disaster Bay from the nineteenth and into the twentieth centuries.

STATEMENT OF SIGNIFICANCE

The remains of the *New Guinea* are representative of iron coastal passenger steamers constructed in the United Kingdom at the end of the nineteenth century. A shipwreck ideally suited for a shore based Wreck Interpretation Trail, being located adjacent to an existing access road and lying close to other significant shipwreck sites.

8.5 LY-EE-MOON

NATURE OF SIGNIFICANCE

Historical (Concerned with range of context)

The wreck site of the *Ly-ee-Moon* is highly significant as a marker to NSW's second worst maritime disaster. The loss of seventy-one passengers and crew in terrible circumstances, was only overshadowed by the loss of the ship, *Dunbar* near Sydney in 1857.

The vessel is significant in being the fastest built in the United Kingdom at the time of launching in 1859. A reputation was attained for speed throughout it's working life.

Archaeological (Concerned with research potential through investigation of material remains)

Due to the destructive processes of salvage operations in the 1960's - 1970's, this site has minimal potential for archaeological investigation of surviving ship's structure and associated materials.

Social (Concerned with community regard or esteem)

A site with popular links to the Eden-Merimbula communities. The regional population retains strong links to the site which survives as the single greatest shipwreck calamity to occur on the Southern NSW coast. The site retains recreational significance as one of the premier shipwreck dives in the region due to its historic significance.

Interpretative (Concerned with public education values)

The site has potential for the development of existing shore based interpretation through interpretative plaques/brochures, as part of general interpretation of the maritime dangers of the Disaster Bay area.

DEGREE OF SIGNIFICANCE

Representative (concerned with the typical or characteristic)

The site is representative of large coastal cargo and passenger steamers wrecked on the dangerous coastline and changeable sea conditions of the Disaster Bay area.

The site is important for its association with the Green Cape lighthouse and their insufficient shipwreck rescue capabilities during the nineteenth century, as mentioned in the later Marine Enquiry into the loss.

Rare (Concerned with the uncommon or exceptional)

The site retains rarity due to the scale of the disaster in terms of loss of life and property. The site parallels that of the *Dunbar* (1857), *Cawarra* (1860), *Kielawarra* (1866) and *Catterthun* (1895) in terms of the impact the disaster had on the population of New South Wales.

STATEMENT OF SIGNIFICANCE

The *Ly-ee-Moon* site is significant with its tragic loss at the very foot of the Green Cape lighthouse, built to protect it. The disaster had a significant impact on the local and wider community and the memory of the event is strongly retained today.

A vessel which was regarded as one of the fastest and finest steamers operating along the NSW coast in the mid-late nineteenth century. The *Ly-ee-Moon* site has the potential to be the primary component of a Disaster Bay Interpretative Wreck Trail.

8.6 LAWRENCE FROST

NATURE OF SIGNIFICANCE

Historical (Concerned with range of context)

The *Lawrence Frost* retains historical significance due to the abandonment and subsequent re-use of the vessel as a timber source for the local Davidson Whaling community. Several early colonial cottages were reputedly constructed from the vessel during the late 1850's, but have subsequently been destroyed.

Archaeological (Concerned with research potential through investigation of material remains)

The site's archaeological potential has been reduced due to the extensive re-use of the vessel following its decommissioning.

It is apparent that the site has been largely reduced through this re-use, and through the effects of the natural environment.

Interpretative (Concerned with public education values)

The site has interpretative potential, being located adjacent to the Historic Davidson Whaling Station, currently incorporating signage and access relative to that site.

DEGREE OF SIGNIFICANCE

Representative (concerned with the typical or characteristic)

The site is representative of large timber coastal cargo and passenger ships damaged through use, ending their days as a reusable resource for a local community. Comparative sites would include the Brigantine, *Prince Patrick* (1867) in Jervis Bay, NSW.

STATEMENT OF SIGNIFICANCE

The vessel's history is representative of the fate of a number of vessels which, when no longer serviceable, became rich sources of timber and other building materials.

The *Lawrence Frost* site is ideally suited to be included in a shipwreck interpretative trail of Twofold Bay.

8.7 EMPIRE GLADSTONE

NATURE OF SIGNIFICANCE

Technical (Concerned with technical or creative achievement)

The *Empire Gladstone* is an example of World War Two period steel freighter construction. There is no presumption of outstanding or innovative hull construction, design or fitting out.

Archaeological (Concerned with research potential through investigation of material remains)

There is no presumption of archaeological significance for the vessel remains.

Scientific (Concerned with research potential through repeatable scientific tests)

There is no presumption of scientific significance of the site other than as a comparative site in which to study the deterioration of steel hull vessels in the inshore environment.

Social (Concerned with community regard or esteem)

A site with popular links to the Merimbula community. The local population retains strong links to the site which remains as the last major shipwreck event to occur in the region.

The site retains significant recreational significance as one of the premier shipwreck dives in New South Wales.

Interpretative (Concerned with public education values)

The site location can be readily observed from the coastal town of Merimbula and has significant potential for public interpretation of the shipwreck heritage of the area.

DEGREE OF SIGNIFICANCE

Representative (concerned with the typical or characteristic)

The site is representative of large steel coastal cargo and passenger ships built towards the end of WW 2. The vessel is representative of those vessel wrecked due to the treacherous navigational conditions of the NSW south coast.

STATEMENT OF SIGNIFICANCE

The *Empire Gladstone* site has the potential to be a focal point for a shipwreck interpretative trail of the Merimbula area. The vessel's loss is strongly retained in the community's memory and the site has become popular as one of the most intact, readily accessible shipwreck dive sites in the State.

9.8 UNIDENTIFIED

NATURE OF SIGNIFICANCE

Historical (Concerned with range of context)

An assessment of the historical significance of the site must await a positive identification of the site and a detailed examination of the vessels operations during its working life.

Technical (Concerned with technical or creative achievement)

The site retains significant potential to demonstrate local Australian shipbuilding techniques employed during the middle of the nineteenth century. Historical data on this important phase in the development of indigenous shipbuilding techniques is limited.

Archaeological (Concerned with research potential through investigation of material remains)

The site's archaeological potential has been reduced due to the actions of deep sea trawling activities which have had a disastrous impact on the integrity of the remains. It is apparent that the once largely intact hull has been spread over a considerable area of seafloor, and that components from the decks to the keel have been broken apart.

Scientific (Concerned with research potential through repeatable scientific tests)

The remains have the potential, through further investigation, to provide information on the effects of intrusive fishing operations on the integrity of Historic Shipwrecks located in deep water locations.

Interpretative (Concerned with public education values)

The fragmented site has potential for interpretation in a Museum context. Themes for interpretation might include early Australian shipbuilding, the coastal shipping trade, cargoes and the management of the countries shipwreck heritage.

DEGREE OF SIGNIFICANCE

Rare (Concerned with the uncommon or exceptional)

The site retains rarity due to the potentially early period of its Australian construction. The integrity of the site prior to human interference has helped to retain its archaeological potential, despite the disastrous impact of that recent contact. The site retains the potential to document significant details of local shipbuilding practices, method of construction and material resources used.

STATEMENT OF SIGNIFICANCE

The unidentified shipwreck site retains significant potential for the study of early Australian shipbuilding practices, which are lacking in the contemporary written histories. The site retains potential for museum displays of the artefacts recovered to-date, demonstrating the history of Australian shipbuilding, the nature and development of coastal shipping trades and the dangers of maritime travel.

9.0 RECOMMENDATIONS

As a result of the historical research, wreck site inspections and subsequent assessment of significance, it is recommended that:

1. the Bega Valley Shire Council , the Eden Killer Whale Museum and the National Parks and Wildlife Service, meet to discuss strategies for interpreting the local Historic Shipwreck Resource based on the outcomes of this report. Implementation of such strategies should involve the Heritage Office.
2. suitable interpretation be achieved through the establishment of interpretative plinths or information brochures, in the manner of Shipwreck Trails established at Port Macquarie and Newcastle, NSW. Suitable local sites for interpretation would include the *City of Sydney*, *New Guinea* and *Ly-ee-Moon*, with potential for interpretative plaques at other venues such as Boyds Tower and the Eden Killer Whale Museum, identifying other shipwreck events.
3. individuals, local groups and organisations should be encouraged, where possible, to further research the background histories of these and other vessels lost in the Twofold Bay/Disaster Bay area, with a view to establishing community wreck site interpretation. Involvement of local divers in the Office's 1997 Community *Wrecks Alive Project* should be promoted locally with a view to establishing further baseline information on these shipwrecks.
4. the Heritage Office examine the practicality of conducting additional survey work in the Twofold Bay/Disaster Bay area during the current Three Year Maritime Archaeology Strategy (1995-1998). This could include continuing examination of the site, tentatively attributed to the *Lanercost*; the gaining of an accurate position fix for the *Cumberland*, and following up a site tentatively attributed to the *William Bowness* but not examined during the current survey.

10.0 REFERENCES

OLIVE CAM (1920-1954)

- (1) *British Register of Ships*, Port of Sydney 6/1948.
- (2) *The Magnet*, Eden 21 January, 1988.
- (3) *British Register of Ships*, Port of Sydney 6/1948.
- (4) Loney, J., 1987, *Australian Shipwrecks, vol 4 1901-1986*. Geelong. p. 210. (NB: the number of deaths has not been confirmed).
- (5) Loney, J., 1987, *Australian Shipwrecks, vol 4 1901-1986*. Geelong. p. 210.
- (6) *The Magnet*, Eden 21 January, 1988.

LANERCOST (1865-1972)

- (1) *Lloyds Register of Ships*, Lanercost 1872. London.
- (2) *Sydney Morning Herald*, 2 December 1872.
- (3) *Sydney Morning Herald*, 26 November 1872. *Sydney Morning Herald*, 2 December 1872.
- (4) Personal communication: Mr Dave Warth, Merimbula Divers Lodge, Merimbula.

OLIVER FROST (1831-1856)

- (1) Loney, J., 1980, *Australian Shipwrecks vol. 2 1851-1871*. London.
- (2) *British Register of Ships*, 71/1856. Sydney.
- (3) *British Register of Ships*, 71/1856. Sydney.
- (4) *Sydney Morning Herald*, 13 October, 1856.

CITY OF SYDNEY (1854-1862)

- (1) Parsons, R., 1982, *A Centenary: Wrecks of Steamships in NSW: 1836-1936*. Magill. p.13.
British Register of Ships, Sydney 40/1854.
- (2) *Sydney Morning Herald*, 8 November, 1862.
- (3) *Sydney Morning Herald*, 8 November, 1862.
- (4) *Sydney Morning Herald*, 8 November, 1862; 10 November, 1862.
- (5) *Sydney Morning Herald*, 12 November, 1862.

NEW GUINEA (1884-1911)

- (1) *British Register of Ships*, Melbourne, 6/1893.
- (2) Parsons, R., 1982, *A Centenary: Wrecks of Steamships in NSW: 1836-1936*. Magill. p. 38.
British Register of Ships, Melbourne, 6/1893.
- (3) *Sydney Morning Herald*, 14 February, 1911.
- (4) *Sydney Morning Herald*, 14 February, 1911.
- (5) *Sydney Morning Herald*, 15 February, 1911.
- (6) *Sydney Morning Herald*, 14/15 February, 1911.
- (7) *Sydney Morning Herald*, 15 February, 1911.

LY-EE-MOON (1859-1886)

- (1) *British Register of Ships*, Sydney 19/1878.
Parsons, R., 1982, *A Centenary: Wrecks of Steamships in NSW: 1836-1936*. Magill. p.32.
- (2) *The Australasian Sketcher*, 29 June, 1886.
- (3) *The Illustrated Sydney News*, 10 November, 1877.
- (4) *The Australasian Sketcher*, 29 June, 1886.
- (5) *The Sydney Morning Herald*, 1 June, 1886.
- (6) *The Sydney Morning Herald*, 10 June, 1886.
- (7) *The Australasian Sketcher*, 29 June, 1886.
- (8) *The Sydney Morning Herald*, 1 June, 1886.

- (9) *The Australasian Sketcher*, 29 June, 1886.
- (10) *The Sydney Morning Herald*, 1 June, 1886.
The Australasian Sketcher, 29 June, 1886.
- (11) *The Australasian Sketcher*, 29 June, 1886.
The Sydney Morning Herald, 1/2 June, 1886.
- (12) *The Sydney Morning Herald*, 3/4/5/7/8/9/16/17 June, 1886.

LAWRENCE FROST (1854-1856)

- (1) *Lloyds Register of Ships*, 1856. London.
- (2) *The Sydney Morning Herald*, 25 August, 1856.
- (3) *The Sydney Morning Herald*, 6 November, 1856.
- (4) *The Sydney Morning Herald*, 7 November, 1856
- (5) *The Sydney Morning Herald*, 7 November, 1856
The Sydney Morning Herald, 10 November, 1856.
- (6) Loney, J., 1980, *Australian Shipwrecks Vol. 2*. Auckland. p. 75.

EMPIRE GLADSTONE (1944-1950)

- (1) *Lloyds Register of Ships*, 1949-50. London.
- (2) Loney, J., 1987, *Australian Shipwrecks, vol. 4*. Geelong. p.201.

UNIDENTIFIED SHIPWRECK (? - 1850's)

- (1) *British Register of Ships*, Prince of Wales. Port of Sydney. ___ of 1850.
Information supplied by Mr Malcolm Venturoni, Maritime Archaeology
Association of Victoria (MAAV). *The Argus* (Melbourne), 8 June, 1853.

APPENDIX 1

List of vessels wrecked in the Twofold Bay area.

(Based on the Heritage Office's *Historic Shipwrecks Database*, 1996)

Name	Type	Built	Lost	Details
Amelia	Cutter	?	?/4/1828	Twofold Bay
Jane Spiers Spiers Beach ?	Barque	1851	14/1/1878	Twofold Bay, Jane
Tea Tephi	Schooner	1884	27/8/1894	Twofold Bay
Ellen	Schooner	1859	20/2/1872	Twofold Bay, ashore
Dunkfield	Barque	1852	27/6/1870	Twofold Bay, off
Oliver Frost	Brig	1831	6/10/1856	Twofold Bay, 9 miles SE
Eden Star Mowarry Pt	Motor Vessel	1946	?/12/1969	Twofold Bay, SE, at
George	Sloop	?	1-2/1806	Twofold Bay
Lanercost 1/2 mile S of	Barque	1865	24/11/1872	Twofold Bay, Mowarry Pt,
Lawrence Frost bank	?	?	26/10/1856	Twofold Bay, near sand
Mary	Schooner	?	26/5/1821	Twofold Bay
Mimmie Dyke	Schooner	1854	16/7/1866	Twofold Bay, S of
Olive Cam	Steamer	1920	2/11/1954	Twofold Bay, Mowarry Pt
Olivia	Schooner	1826	19/11/1827	Twofold Bay, S of
Teazer	Brig	1844	11/10/1854	Twofold Bay, off
Vision at Broad Water	Ketch	1851	4/10/1858	Twofold Bay, 15 miles N
William Bowness	Barque	1818	22/10/1856	Twofold Bay, ashore
Tasman Hauler	Tug	1959	1988	Twofold Bay
Henry Bolte	Tug	1966	1988	Twofold Bay

List of vessels wrecked in the Disaster Bay area.

(Based on the Heritage Office's *Historic Shipwrecks Database*, 1996)

Name	Type	Built	Lost	Details
Ann and Maria Cape	Brig	1849	5/7/1869	10 miles s of Green
Cumberland	Steamer	1915	11/8/1917	5 miles SE Green Cape
City of Sydney	Steamer	1854	6/10/1862	Green Cape on S side
Ellen Simpson	Barque	1847	17/5/1866	8 miles N Cape Howe
Ly-ee-Moon lighthouse	Steamer	1859	30/5/1866	Tip of Green Cape near
Mina	Brig	1867	23/6/1888	east of Green Cape
New Guinea	Steamer	1884	13/2/1911	Green Cape, S side
Storm Bird inside	Schooner	?	30/3/1870	Green Cape, 3 Miles
Unidentified Cape	Schooner?	?	?	35 miles SE Green