Investigation of a Survivors Camp from the *Sydney Cove* Shipwreck

By

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Department of Archaeology
Flinders University
South Australia
2004
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<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>List of Figures</td>
<td>3</td>
</tr>
<tr>
<td>Introduction</td>
<td>4</td>
</tr>
<tr>
<td>ONE Literature Review - Shipwreck Survivor Camps</td>
<td>7</td>
</tr>
<tr>
<td>TWO Methods - The <em>Sydney Cove</em> Case Study</td>
<td>16</td>
</tr>
<tr>
<td>THREE Results - Material Culture of the Survivor Camp</td>
<td>31</td>
</tr>
<tr>
<td>FOUR Discussion - Application of the Model</td>
<td>42</td>
</tr>
<tr>
<td>FIVE Conclusions – Formation of Survivor Camps</td>
<td>55</td>
</tr>
<tr>
<td>Bibliography</td>
<td>64</td>
</tr>
</tbody>
</table>
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>Figure</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1</td>
<td>Location of the <em>Sydney Cove</em> historic site</td>
<td>19</td>
</tr>
<tr>
<td>Figure 2</td>
<td>Preservation Island historic features</td>
<td>20</td>
</tr>
<tr>
<td>Figure 3</td>
<td>Chart of Preservation Island showing shipwreck and campsite</td>
<td>21</td>
</tr>
<tr>
<td>Figure 4</td>
<td>Excavation and recording of the <em>Sydney Cove</em> hull structure</td>
<td>24</td>
</tr>
<tr>
<td>Figure 5</td>
<td>Overall view of the survivor camp excavation</td>
<td>27</td>
</tr>
<tr>
<td>Figure 6</td>
<td>Close up view of the excavation in progress</td>
<td>27</td>
</tr>
<tr>
<td>Figure 7</td>
<td>Plan of the survivor camp test excavations</td>
<td>28</td>
</tr>
<tr>
<td>Figure 8</td>
<td>Intact Chinese export porcelain from the <em>Sydney Cove</em></td>
<td>32</td>
</tr>
<tr>
<td>Figure 9</td>
<td>Broken alcohol bottles lying <em>in situ</em></td>
<td>36</td>
</tr>
<tr>
<td>Figure 10</td>
<td>Intact alcohol bottles recovered from the <em>Sydney Cove</em></td>
<td>37</td>
</tr>
<tr>
<td>Figure 11</td>
<td>The short tailed shearwater or ‘mutton bird’</td>
<td>38</td>
</tr>
<tr>
<td>Figure 12</td>
<td>View of the southern end of Preservation Island</td>
<td>44</td>
</tr>
<tr>
<td>Figure 13</td>
<td>Stone structure on Preservation Island</td>
<td>50</td>
</tr>
</tbody>
</table>
INTRODUCTION

One of the great themes in the history of sea transportation is the survival of the victims of shipwrecks. Disaster at sea and the sufferings of the survivors has exerted a continuing fascination because of the catastrophic nature of the occurrence. In the great age of sail and steam the volume of seaborne traffic and the extent of settlement meant that shipwreck survivors had a reasonable chance of rescue, but those who were isolated by geography or communications could be forced to fend for themselves for long periods of time. If these groups reached land they would have to cope with the problems of subsistence, isolation, difficult group dynamics, and a possibly hostile terrain. Commonly they carried out actions such as salvaging cargo and equipment, establishing a social or command structure, adapting to the local environment, and developing rescue strategies. The setting up of a camp or base of operations is also a central theme in shipwreck survivor accounts.

An account of the loss of the barque *Rebecca* on the west coast of Tasmanian in 1853 gives some idea of the problems facing shipwreck survivors when they reached shore. ‘The following day, after the bodies which were washed ashore were interred, we searched the beach for provisions, but could only obtain a bucket-full and a half of bread (which was carefully picked up from among the wreck, and washed in fresh water), and several small tins of herrings. We then rolled some empty water casks up the embankment, stove one head in each, and turned them over for an encampment … we only had one herring a-day per man, with a cup full of biscuit, but plenty of bottled ale and porter, and were without the means of obtaining fire. I then determined to that two parties should start, one to the south and the other north’ (Broxam, 1993:12-13).

Given that there is a large body of information on shipwreck survivors there has been remarkably little consideration of the subject as a field of documentary or archaeological study. In part this may be explained by the concentration of maritime archaeological research on the more technical aspects of ship construction and their cargoes, rather than what may be regarded as ‘peripheral’ historical events. The subject of survivor camps also poses many questions regarding human behaviour, a subject area that maritime archaeology has not generally explored in great detail.
Another explanation is proposed by Gibbs (2003:128): ‘Because of the historical peculiarities of individual situations, existing studies have treated survivor camps as separate and unique, rather than as a class of site to be subjected to comparative study’. In the same paper Gibbs puts forward a comparative framework for the study of shipwreck survivor camps as a class of archaeological site. This model highlights a number of elements or themes that are common to the development of shipwreck survivor camps and how these might be reflected in the archaeological record. In 2002 an opportunity to investigate the subject of shipwreck survivor camps came about with the location and test excavation of a land site associated with the loss of the ship *Sydney Cove* at Preservation Island, Tasmania.

Wrecked in 1797 during a journey from Calcutta to Port Jackson, the *Sydney Cove* is the eighth oldest shipwreck in Australian waters, and the first merchant vessel lost after the establishment of the colony of New South Wales. Since the rediscovery of the shipwreck in 1977 an extended program of survey, excavation and analysis has been carried out under the direction of the Tasmanian Parks and Wildlife Service. While this work was concentrated on the underwater site it was known that the survivors of the wreck had occupied nearby Preservation Island for almost 12 months, and had left documentary and archaeological evidence of their activities. Surveys of these features and the collection of surface material were carried out on a number of occasions (Strachan, 1986a:86-92) but the location of the survivor’s camp was never positively identified. During 2002 the author, in association with staff and students from Flinders University, carried out test excavations at a site that has been confirmed as a dwelling constructed by the *Sydney Cove*’s crew. A collection of artefact material was subsequently recovered including items of the ship’s cargo, fittings and equipment, personal articles and foodstuffs.

This thesis will utilise the archaeological collections from both the underwater and terrestrial sites associated with the *Sydney Cove*, to examine the subject of shipwreck survivor camps in detail. The archaeological evidence will be supplemented by the extensive documentary research that has been carried out on the site over the last 25 years. The evidence from the *Sydney Cove* project will be examined to see if the comparative model proposed by Gibbs (2003) can usefully be applied to a single site, and whether modifications to the model are necessary. Chapter
One will provide an overview of shipwreck survivor camp studies and a more detailed exposition of a theoretical model proposed by Gibbs. Chapter Two will look at the *Sydney Cove* project including the historical background, the excavation of the shipwreck and the resulting research studies. The methods used in the survey and test-excavation of the associated terrestrial sites will also be examined. Chapter Three will describe the material culture of the campsite excavation and its broader context, particularly as part of the overall history and archaeology of the shipwreck. Chapter Four will look at the detailed application of the *Sydney Cove* study into the proposed model for shipwreck survivor camps. Chapter Five will conclude with observations on site formation processes, the material culture of shipwreck survivor camps, and a summary of the suitability of the archaeological model for survivor camp formation.
ONE
LITERATURE REVIEW - SHIPWRECK SURVIVOR CAMPS

Over the last decade the practice of archaeology in Australia has begun to increasingly blur the boundaries that once defined work in the ‘underwater’ or ‘terrestrial’ spheres. Although this has occurred to a limited degree in the research area of prehistory (see Dortch, 1991, 1997, 2002) it is most readily apparent in the discipline of historical archaeology - covering the period of European exploration and settlement of the continent. Terrestrial and underwater sites from this period have more similarities than differences including a common temporal setting, corresponding cultures and artefacts, and the use of documentary evidence as a research tool. They are only really separated by some of the technical aspects of working underwater, the research emphasis on ship technology, and the relatively short time periods of site deposition (the ‘time capsule’ analogy).

The coalescence of historical and maritime archaeology has become apparent in a number of ways. Since 1995 practitioners of both sub-disciplines have periodically attended joint conferences, and there is also an increasing trend to publish in journals outside the specific sub-discipline, making research available to a wider audience of professionals. Projects such as the *Archaeology of Whaling in Southern Australia and New Zealand* (Lawrence and Staniforth, 1998) have redefined the nature of cooperative research between the disciplines, as evidenced in the appearance of some significant archaeological studies on the subject of shore-based whaling (Gibbs, 1996; Lawrence, 1998, 2001; Nash, 2003).

Although largely concentrated on underwater shipwreck sites (as part of legislative responsibilities), the study of maritime archaeology in Australia has also been concerned with some of the broader research aspects of its subject matter. The earliest work on the Dutch East India Company shipwrecks in Western Australia included the investigation of associated shipwreck survivor camps (Bevacqua, 1974a, 1974b), and across Australia a range of studies over three decades have considered such diverse maritime subjects as jetties (McCarthy, 2002, Rodrigues, 2002), dry docks (Jeffery, 1995), port facilities (Nutley, 2003), fish traps (Welz, 2002) and
pearling industries (Stanbury, 1994). This ‘holistic’ approach to maritime archaeology has been considered in greater detail by McCarthy (2003), and its implications for the study of terrestrial archaeological sites have been discussed by Stanbury (1983), Effenburger (1987) and Nayton (1992).

As part of this increasingly wide application there has also been a noted increase in the development of thematic studies of maritime sites, rather than the historical particularist approach that focuses on a single site or event. This has included the study of types of shipwreck sites such as steamships (McCarthy 1998a, Veth & McCarthy, 1999), abandoned watercraft (Richards, 2002), and shipwreck cargoes (Staniforth, 2003). The consideration of shipwreck survivor camps and their characteristics as defined by Gibbs (2003) clearly falls within this type of thematic study, and is of particular interest for its ‘overlap’ between underwater and terrestrial sites.

The study of shipwreck survivor camps is an area of research that crosses a number of definitional boundaries. As substantially terrestrial sites, survivor camps do not strictly fall under the topics of ‘shipwreck’, ‘nautical’ or ‘underwater’ archaeology but may have elements that relate to all these areas of study (Delgado, 1997:259-260). The broader study of ‘the material remains of man and his activities on the sea’ (Muckelroy, 1978:3) is usually defined as ‘maritime archaeology’, and the topic of shipwreck survivor camps may more easily fall into this category. Delgado (1997:259) presented a more comprehensive definition of maritime archaeology as ‘the archaeological study of manifestations of maritime culture, including vessels, shore-side facilities, cargoes and even human remains’, and this is particularly useful for categorising the investigation of shipwreck survivor camps.

The excavation of a shipwreck site and its associated survivor camp as part of an extended archaeological project is almost unique in both an Australian and international context. While there were thousands of shipwrecks in Australian waters relatively few of these disasters actually resulted in the establishment of survivor camps. In the case of the Australian state of Tasmania there is very good historical information on the wrecks that have occurred in local waters since the loss of the Sydney Cove in 1797 (Broxam and Nash, 1998, 2000). Of the 1,100 plus shipwrecks
in Tasmanian waters only 15 incidents actually resulted in the survivors staying in one location for more than a week and possibly establishing a campsite. All these wrecks occurred in geographically isolated areas such as the West Coast, the Bass Strait Islands, or sub-Antarctic Macquarie Island, and most date from the ‘colonial’ period (pre 1850) when settlement and shipping traffic was not as widespread.

Besides the Sydney Cove campsite, only two other terrestrial sites have been relocated in Tasmania. Survivor camps associated with the wrecks of the Brahmin at King Island (1854) and the George Marshall at Flinders Island (1862) are located in sand dunes backing the coast and directly adjacent to the respective wreck sites (Nash, 1988:23-24, 1989). Hut sites constructed from ship timbers have also been found at Macquarie Island but these activities may be associated with the sealing industry, rather than shipwreck survivors (Townrow, 1989:29-33,46-48). Both the sites at King Island and Flinders Island have been extensively ‘mined’ by local residents, largely destroying any archaeological context. The possible sites at Macquarie Island have also been subject to intensive historical use by sealing gangs, and extreme environmental conditions.

Nationally, the Australian Historic Shipwrecks Database lists over 7,400 wrecks in Australian waters and the extrapolation of the Tasmanian statistics means that at least 100, and possibly many more shipwreck survivor camps should exist. However, work on this type of site has so far been limited and largely confined to the early Dutch wrecks in Western Australia. The 1629 wreck of the Batavia at the Abrolhos Islands has received the most attention with extensive archaeological material, including human remains, associated with survivor massacres (Orme and Randall, 1987; Gibbs, 1992, 1994, 2002; Pasveer 1998; Pasveer at al., 1998; Stanbury, 1998, 2000). Material associated with the activities of Dutch shipwreck survivors has also been recorded for the sites of the Zeewijk (Ingelman-Sundberg, 1976, 1977; Green, 1997) and the Zuytdorp (Morse, 1988; Weaver, 1994; Playford, 1996; McCarthy, 1998b).

From the colonial period (post 1788) very few survivor camps or associated terrestrial features have been located or recorded. A substantial campsite associated with the wreck of the French whaler Perseverant at Dirk Hartog Island, Western
Australia, in 1841 has been surveyed (Robinson, 1988). Material from the six-week occupation of Porpoise Cay, Queensland, during 1803 by survivors from the Porpoise and Cato shipwrecks was located during survey work, but is very limited (Coleman and Delaney, 1988). Evidence of a survivor’s camp associated with the 1835 wreck of the convict ship Hive has also been located at Wreck Bay, New South Wales (Nutley, 1995).

On an international level the research that has been carried out on the subject of survivor camps is very sparse. The campsite associated with the 1855 wreck of the Julia Ann in the South Pacific has been investigated (Hundley, 1996, 2001). In South Africa a land site from the 1630 Portuguese wreck Sao Goncalo (Smith, 1986) was partially excavated, and a recent Masters thesis looks at Portuguese survivor camps from the same period (1550-1650) (Burger, 2003). In the standard journals on maritime or historical archaeology such as the International Journal of Nautical Archaeology and Historical Archaeology, and their Australian equivalents, there is virtually no mention of shipwreck survivor camps. Similarly, none of the standard texts on maritime or underwater archaeology, such as Muckelroy (1978), Gould (1983, 2000) or Delgado (1997) consider the subject.

Martin Gibbs has provided the only substantive overview of the subject of shipwreck survivor camps in a recently published paper (2003), and this work will be considered in detail when assessing the Sydney Cove site. In light of the paucity of research on the subject Gibbs (2003:128) quite rightly considers that ‘shipwreck survivor camps are a neglected terrestrial component of maritime archaeology, usually being investigated purely as an adjunct to work on the associated wreck site’. The paper goes on to provide a broader synthesis on the subject of shipwreck survivor camps in Australia, and how these sites may be reflected in the documentary and archaeological record. As a comparative framework Gibbs proposes a number of common elements or themes that appear to occur in shipwreck survivor situations. These include camp organisation and authority structures, location of campsites, subsistence, shelters and structures, health and mortality, rescue strategies, indigenous contact, and salvage operations. These themes will be considered in more detail below.
Authority, Social Structure, and Camp Organisation

Shipboard life on a sailing vessel was necessarily organised around a rigid command structure, and this may be reflected in the actions or organisation of shipwreck survivors on land. The transference of control in the terrestrial setting mostly occurred without incident, particularly when Naval vessels were involved (see Austin, 1964:188; Hamilton, 1793:108-111). Alternatively, the loss of officers or the circumstances of the wreck could result in the breakdown of command and control as evidenced in the events following the Batavia shipwreck, including the massacre of survivors (Dash, 2002; Gibbs, 2002). In the archaeological record the maintenance of a command structure may be reflected in the segregation of the living areas for officers, crew or passengers. The examination of Portuguese shipwreck survivor camps in South Africa by Burger (2003:91) certainly suggests that this was the case, with the physical separation of officers, crew, soldiers, passengers and slaves. Equally, the catastrophic nature of a shipwreck event may force the divisions between social groups to blur or become realigned by necessity, as eventually occurred with the communal housing of the Sydney Cove survivors. The presence of a command structure and organisation may also be reflected in the archaeological record as more focussed and effective salvage, subsistence and rescue strategies are carried out.

Relationship Between Wreck and Camp Location

Gibbs (2003:132) has proposed that people abandoning a ship will not inevitably select the nearest point of land as a refuge. Factors such as the prevailing currents, environmental conditions, geographical features, and the availability of boats may all have bearing on a landing point and the subsequent establishment of a campsite. The confused psychological condition of many of the survivors immediately after a disaster, in what is termed the recoil stage, (Leach, 1994:25-28) may also effect the decision making process. It is also possible that the initial landing point for a shipwrecked crew will not become the long-term campsite as increasing familiarity with the landscape and the requirements for survival and rescue may force a shift in location. In a number of Australasian incidents the closest point of land was merely the staging point for a shift to a more suitable location or journeys by boat or foot to the nearest point of rescue. In 1848, for example, Preservation Island was a point of refuge for survivors from the brig Governor Phillip, who had progressively shifted themselves over 30 kilometres from the wreck site at Gull Island (Nash, 1996:38-41).
**Salvage**

Common to many shipwreck survivor experiences was the opportunity to salvage or remove material from a wrecked vessel. This activity has major implications for the material culture of shipwreck survivor camps and was an integral factor in many of the activities discussed in this Chapter. The extent of salvage activities was predicated on factors such as the location and accessibility of the shipwreck, the abilities of the survivors, their motivation for salvage (ranging from subsistence to financial gain), and the access to tools and equipment such as boats. Gibbs (2003:138-141) has considered the question of salvage activities in some detail and divides them into five stages – jettisoning, crisis salvage, survivor salvage, opportunistic salvage, and organised salvage. Salvage is one of a number of processes that are crucial for explaining site formation processes on shipwreck sites (and survivor camps) and the topic will be considered in greater depth in Chapter Five.

The archaeological signature of survivor salvage and usage could also be complicated if rescue vessels were eventually involved. While survivors could take with them a very limited quantity of material if they embarked on a rescue voyage or trek, salvage vessels could remove a much greater variety of items including cargo, stores, equipment, and personal possessions. In the case of the *Sydney Cove* there were three voyages made to Preservation Island by the schooner *Francis* resulting in the removal of a great deal of the salvaged cargo and equipment. Salvage of shipwrecks and survivor camps by contemporary unrelated groups must also be considered, as the loss of a vessel could present an economic bonanza to local communities that had access to the location. Even the current day activities of souvenir hunters at shipwrecks or survivor camps can be seen as part of this continuum of behaviour.

**Subsistence**

In most cases the initial subsistence and material culture of survivors was derived from the ship through removal at the time of striking, direct salvage, or the collection of flotsam and jetsam. This was particularly evident if the wreck itself was accessible and relatively intact. At a later stage a subsistence strategy could be broadened to include foraging and exploitation of the local environment. This
depended on the availability of natural resources such as water or edible wildlife, as well as the opportunities and skills available to the survivors. Archaeological evidence of such activities may be in the form of wells or water catchment systems, food preparation and storage areas, livestock holding areas, and dietary evidence in the form of faunal bones. Dietary evidence is a particularly significant consideration as it can potentially show the nature and success of any adaptive strategies. Consideration must also be given to ‘dietary conservatism’, whether from cultural or religious grounds, and the effects that this may have on food choices if they were available (Karskens, 1999:72-73).

Shelters and Structures

Along with subsistence the most important element for survival, particularly in colder climates, was the construction of some form of shelter. Historical accounts and images of shipwrecks mostly depict these shelters as ‘tents’ constructed from the large quantities of canvas, rope and timber carried by sailing vessels. However, in some cases more substantial dwellings or structures were constructed with the addition of local materials and these may include accommodation huts, lookouts, signal fires, cairns and even defensive works (Orme & Randall, 1987; Hundley, 1996). These activities were related to the availability of materials, the length of stay, and the reaction to difficult environmental conditions, such as those encountered by the Sydney Cove survivors. The archaeological visibility of shelters and structures will vary considerable and in many cases will be undetectable beyond a general location. Potentially such structures may provide evidence of the survivor’s salvaging and foraging activities, skills and organisation (Gibbs, 2003:134).

Health and Mortality

By their very nature, shipwrecks and their aftermath can have disastrous effects on the health and mortality of those on board. In the short term the health of shipwreck survivors could be effected by their prior condition, possible injuries sustained in the wreck, and their psychological reaction to stress. Dietary deficiencies, particularly scurvy, were always a factor in extended sea voyages and their consequences could extend after shipwreck survivors reached shore. The psychological effects of disaster on victim’s health are also well known, and there are many instances of individuals simply ‘giving up’ and dying in circumstances where
other members of the group survived (Leach, 1994:126-142). In Survival Psychology Leach (1994:59-121) considered some of the other factors that may directly effect the health of disaster survivors including fatigue, sleep disturbance, hypothermia, hunger and thirst. A number of these factors are directly related to the local environment and the adaptation of successful strategies for coping with the problems of subsistence and shelter. In the case of deaths connected with survivor camps the most obvious archaeological signature would be the burials of the victims. This would not only come from the actual physical remains but also the form of burial, particularly as noted on the ‘discarded’ victims of the Batavia massacres (Gibbs, 1992, 1994).

**Development of a Rescue Strategy**

Once survivors of a shipwreck had reached shore, established a camp and had at least basic subsistence their next step might be to consider a rescue strategy. A rescue strategy was predicated by a number of factors including access to resources, opportunity, geographical location, and motivation through a command structure or collective will. In some cases the survivor’s action could simply be to wait where they were, if it was perceived that rescuers would be sent for them or the chances of being seen by a passing vessel were good. The construction of signal cairns or lookouts to facilitate rescue may be one archaeological signature of this behaviour. A second possibility, if geography and knowledge were favourable, was to walk to safety. Some of the Sydney Cove’s crew eventually travelled for hundreds of kilometres along the coast of southeastern Australia (Nash, 2001:43-47) and there are numerous similar instances from relatively isolated areas such as the Tasmanian west coast (Broxam and Nash, 1998:95,97,153-155,188).

A similar strategy, if boats were available or a vessel could be constructed, was to travel by sea to the nearest settlement. Some of the most epic sea voyages were undertaken by shipwreck survivors over thousands of kilometres in small boats. In Australasian waters the survivors of the Batavia (1629) and the Zeewijk (1727) travelled over two thousand kilometres to Batavia and a similar voyage was undertaken by the crew of HMS Pandora (1791) from the Great Barrier Reef to Coupang (Delgado 1997:55,473; Gesner, 2000:16-17). Even during the colonial period a rescue voyage from the 1841 wreck of the steamer Clonmel could take a boat journey of over 250 kilometres along the Victorian coast (Harvey, 1999:16-18).
Alternative and rarer long-term strategies could also include the establishment of a new settlement such as the *Bounty* mutineers at Pitcairn Island (Erskine, 1999), or the integration of survivors with indigenous communities (see below).

**Survivors Camp as Contact Site**

The Gibbs model (2003:136-137) considers the numerous incidents where shipwreck survivors during the colonial period encountered indigenous people, often as first contact between the races. The *Sydney Cove’s* crew in particular had one of the most protracted and well recorded encounters with Aboriginal peoples during their 600 kilometre trek along the coast of New South Wales. Research in Western Australia (Silvester, 1998), Victoria (Anderson, 2000) and South Australia (Jeffery, 2001) has highlighted how extensive these incidents were, even up to comparatively recent times. Accounts of these encounters are usually of a positive nature with some instances of survivors being assisted over a period of months. However, the perceived or real threat of hostile ‘natives’ in an unknown land may also lead to defensive behaviour in the group that may constrain their actions. The presence of shipwreck survivors may also leave their own mark on indigenous populations – in stories, art, and technology if material from a wreck or survivors camp is later utilised by the local population (Morse, 1988; Nutley, 1995; Layton, 1997:7-22). There has also been speculation on the passing of diseases and genetic disorders to Aboriginal populations through close physical or sexual contact (Playford, 1996:210-232).
TWO
METHODS - THE SYDNEY COVE CASE STUDY

Historical Background

In January 1788, the British government established a colony at Port Jackson, New South Wales from the country’s crowded prisons. However, deficiencies in the organisation of the First Fleet and the problems of applying European agricultural techniques threatened the survival of the settlement for a number of years. The difficulties of obtaining reliable stocks of food and equipment from Britain and the Cape of Good Hope soon forced the British Government to consider India as an alternative source of supplies for New South Wales. Despite earlier injunctions against infringing the trading monopoly of the English East India Company, the colonial governor was given permission to obtain supplies from India in 1790. The store-ship, *Atlantic* was despatched to Calcutta in October 1791, returning with a cargo of food and livestock in June 1792 (*Historical Records of Australia*, 1(1):768).

Private traders resident in India and operating under licence from the East India Company rapidly followed the government initiative. Many of these merchants formed loose associations known as agency houses, and the results of their activities were collectively known as the country trade (Furber, 1970:264-297). The ascendancy of the English East India Company in the latter half of the 18th century was reflected in the increasing dominance of the country trade by vessels registered in India. During this period, there was also a shift in emphasis in the direction of the trade from the western Indian Ocean towards the eastern markets of China, the Malay Peninsula, Indonesia, and as far as the north-west coast of America (Marshall, 1976:76-105).

In their constant search for profits, the country traders needed little encouragement to speculate in new markets, and proposals to trade directly with New South Wales were being received by 1790 (*Historical Records of Australia*, 1(1):222). The first private merchant vessel to arrive at Port Jackson from India was the *Shah Hormuzier* in February 1793, and another four ships followed before the end of 1795. In the three decades after the appearance of the first country ship 129 vessels carrying cargoes from India, totalling over 30,000 tons of shipping, arrived at New South
Wales and Van Diemen’s Land (Tasmania). This represents close to 35% of the total number of overseas shipping arrivals at Australian ports before 1820 and is exceeded only by government vessels sailing directly from Britain (Nash 2001:70-72; Broadbent et al., 2003:199).

The *Sydney Cove*’s voyage was organised by the merchant house of Campbell and Clark, who had been established at Calcutta since 1790 (Steven, 1965:1-25). Although few records of their business dealings exist, regular advertisements in the *Calcutta Gazette*, indicate that the firm dealt mainly in alcohol, textiles, and China goods. The circumstances of their decision to undertake a speculative voyage are unknown but may have been prompted by their dealings with Captain James Storey of the *Sovereign*, which had arrived from Port Jackson in May 1796. The vessel they acquired for their enterprise was renamed *Sydney Cove*, in honour of its intended destination, and research has possibly identified the ship as the country trader *Begum Shaw* (Strachan, 1986a:97-98). In a 1794 sales notice the former *Begum Shaw* was described as 5,000 bags of rice burthen, a remarkably fast sailor, new sheathed and coppered up to the bends (*Calcutta Gazette*, 27 February 1794).

This description of the *Begum Shaw* is matched by archaeological evidence, which demonstrates that the *Sydney Cove* was also copper-sheathed and exhibited the features of a fast sailing vessel designed primarily for short coastal voyages. Excavation evidence also suggests that the *Begum Shaw/ Sydney Cove* was originally built in the Bay of Bengal region, possibly at Calcutta itself, as a two-decked, three-masted ship with an overall hull length of around 100 feet (30 m) and a maximum breadth of approximately 24 feet (7.5 m). Comparison of the estimated hull dimensions of the *Sydney Cove* with other contemporary examples indicates a vessel with a burden of 250-300 tons (Old Measurement).

The previous master and part owner of the *Begum Shaw*, Gavin Hamilton, retained his command of the *Sydney Cove* and assembled a crew of eight Europeans and 44 Indian seamen commonly known as lascars. Although a complete manifest of the *Sydney Cove*’s cargo has not survived, there is some evidence of its composition from the existing documentary and archaeological sources (Nash, 2001:28). The prior involvement of Campbell and Clark in the spirit trade ensured that approximately
7,000 gallons (31,500 litres) of alcohol took up a large proportion of the cargo space. The cargo also included rice and sugar, tobacco, salted meat, Chinese tea and porcelain, tar, vinegar, soap, candles, leatherwear, Indian textiles, livestock and luxury goods.

On 10 November 1796, the Sydney Cove departed from Calcutta and made steady progress southwards until 13 December, when gale-force winds opened up a leak on the starboard bow. Attempts to repair the damage were partially successful, although water continued to enter the hull. On 25 January rough weather further opened the bow timbers, forcing the crew to continuously man the pumps as well as bailing directly from the pump well. During the two-day period before a fothered sail could be deployed to reduce the leak, five of the Lascar seamen died at sea. In early February, after rounding the southern tip of Tasmania, the ship again encountered strong winds, culminating in a gale on 8 February that caused fresh ruptures to the hull. Captain Hamilton turned the stricken ship westwards to pass through Banks Strait, which separates Tasmania from the islands of the Furneaux Group.

On 9 February, the vessel was run aground in an estimated 19 feet (6 m) of water between two small, low-lying islands (Fig.1). In this location, the vessel was reasonably protected, allowing the crew and essential stores and equipment to be landed on the southernmost point of what was subsequently named Preservation Island (40°29'S, 148°04'E). Dominated by large granitic boulders, the island is approximately 3 kilometres long (north to south) and 1 kilometre at its widest point, and around 207.4 hectares in size. A camp was set up, and although the wreck was almost completely submerged at high tide the crew salvaged over half the cargo. When the men were found broaching the casks of spirits, that part of the cargo was transferred to the smaller Rum Island (Hamilton, 1797:68-69). After the hull of the ship had collapsed by early May 1797 the crew were put to work building a large dwelling so they could survive the approaching winter.

On 27 February, the Sydney Cove’s longboat, with a crew of 17, had been despatched northwards to seek assistance from Port Jackson. The small vessel was subsequently wrecked on 2 March near Cape Everard, some 600 kilometres short of
Fig. 1 – Location of the Sydney Cove historic site (Tasmanian Parks and Wildlife Service)
its destination. The crew were forced to make an arduous overland trek, the details of which were recorded by supercargo William Clark (Historical Records of New South Wales, 3:760-768). After a two-month journey through unmapped rugged country, during which they encountered numerous Aboriginal bands, all but three of the men were left behind. On 15 May, the crew of a fishing boat sighted the survivors south of Port Jackson. The men reached the colony the following day to report to Governor John Hunter.

The 42-ton schooner, Francis, and the 10-ton sloop, Eliza, were despatched to Preservation Island and arrived there on 10 June. All but six of the crew and a quantity of cargo were embarked on the two vessels. The Francis reached Port Jackson on 6 July, but the smaller Eliza was lost en route with six of the Sydney Cove’s men on board. Reaching Port Jackson, Captain Hamilton lodged a ‘Ships Protest’ detailing the circumstances of the voyage (Hamilton, 1797). The Francis made two subsequent salvage voyages to the wreck and returned to Port Jackson in March 1798 with the last of the undamaged cargo and the remainder of the Sydney Cove’s crew.
Cove’s crew. The cargo, minus the spirits that the government had reluctantly agreed to purchase, was put up for sale and fetched highly inflated prices (Collins, 1802:98).

Off the southern tip of Preservation Island, the destruction of the Sydney Cove took a number of years. In February 1798 Lieutenant Matthew Flinders accompanied the third salvage voyage of the Francis, and recorded that the wreck had broken up during westerly gales and scattered its timbers and parts of the cargo throughout the islands (Flinders, 1814:xxviii). In October 1798 it was reported that some convicts had stolen a boat near Sydney with the unsuccessful intention of sailing southwards to the Sydney Cove wreck (Collins, 1802:78). In March 1802, a French scientific expedition under Captain Nicholas Baudin noted some of the Sydney Cove’s timberwork lying at nearby Clarke Island (Plomley, 1983:98). In 1804, it was reported to colonial Governor King that the crew of an American sealing vessel were building a craft from the timbers of the Sydney Cove (Historical Records of New South Wales, 5:384).

Fig.3 - Matthew Flinders 1798 chart of the Preservation Island showing location of the shipwreck and campsites (Mitchell Library)
The Shipwreck Excavation

In January 1977, divers relocated the wreck of the *Sydney Cove* with the assistance of an original chart of the area produced by Lieutenant Matthew Flinders in 1798. The remains were found approximately 350 m from the southernmost point of Preservation Island and less than 200 m from the eastern side of Rum Island. Water depths over the wreck range from 4 to 6 m, according to tidal variations, and the seabed consists of a fine sand and shell sediment largely covered by sea grass (*Posidonia australis*). This growth protected the remains from further physical damage and sealed the artefact deposits in a stable, oxygen-free environment that aided their long-term preservation. The bottom topography is generally level, but scour areas up to 1 m deep are found in the areas devoid of sea grass. The seabed slopes slightly away to the south towards the deeper waters of Banks Strait. Underwater visibility is usually over 10 m and currents are generally absent on the site, except at the release of the ebb tide through the narrow channel between Rum and Preservation islands.

Following the reporting of the site to the State government the significance of the wreck and the need to legally protect the remains were quickly realised. Previously, many other shipwreck sites in Australian waters had been located and disturbed by divers before any formal study had taken place. In this case, future archaeological work on a virtually untouched site was greatly enhanced by the responsible attitude of the divers involved and their efforts to have the wreck fully protected. On 29 March 1977, the wreck and the surrounding area, which included parts of Rum and Preservation islands, was declared an historic site under the Tasmanian *National Parks and Wildlife Act 1970*.

When the wreck of the *Sydney Cove* was rediscovered, the expertise to work on underwater sites in Australia was still largely confined to Western Australia. Consequently, the initial investigation of the site was undertaken by amateur groups, which only gradually included professional staff backed by government funding. The work on the wreck proved to be a major stimulus to the development of a maritime archaeological program in Tasmania (Nash, 2003). One of the most important outcomes of this increased interest was the acknowledgment of the heritage values of shipwreck sites, which prompted the State government to become a signatory to the
Commonwealth *Historic Shipwrecks Act 1976* in 1982 (Dromgoole, 1999:1-16). In 1984 the *Sydney Cove* site was formally declared a protected site under the provisions of this Act.

Initial survey work and test excavations carried out during 1977, 1978 and 1980 established that the surviving wreck structure and artefact clusters were concentrated in an area measuring approximately 40 m by 10 m. An assemblage of artefacts was raised during this work including the vessel’s rudder (Atherton and Lester, 1982; Lester 1982). Test excavations also confirmed historical reports of the wreck ‘lying much on one side’ (Hamilton, 1797:69). The 10° list to starboard had resulted in a larger proportion (70%) of hull timbers surviving on that side of the wreck. The tilt of the keel at 5° towards the stern had also preserved a greater quantity of artefact material in the deeper sediment deposits at the southern end of the site. Further work in the 1980s installed basic survey controls on the wreck and recorded a number of features connected with the historical occupation of Preservation Island (Clarke and Smith, 1986).

Building on a growing body of research on the *Sydney Cove* and other comparative Australian sites, a seminar on Asiatic shipbuilding techniques was held in Tasmania during 1985 (Green and Strachan, 1986). Summaries of the results of the initial site work were subsequently produced (Strachan, 1986a; Clarke and Nash, 1988) and these reports set a number of further research goals. Between 1991 and 1994, a regular program of excavation on the site was directed by the author through the Tasmanian Parks and Wildlife Service. The Queen Victoria Museum and Art Gallery, Launceston, provided conservation assistance. Funding, personnel, and equipment were obtained from Federal and State government organisations backed up by the services of numerous volunteers.

By the end of 1993, five expeditions had uncovered a total of 216 sq/m of the site, or approximately 55% of the area originally grided out on the seabed (Nash, 2001:87-94). While the excavated area included all remaining hull timbers and the major concentrations of artefacts it was obvious from field observations and historical documentation that material would continue to be found outside this area. However, the expectation of diminishing returns and the need to consolidate the work
that had already been undertaken precluded further excavation. A final expedition to the wreck in March 1994 carried out stabilisation works on the remains, and periodic monitoring of the site continues to be undertaken.

A major exhibition based on the artefacts and information gathered from the site was officially opened at the Queen Victoria Museum in February 1997, on the bicentennial of the loss of the *Sydney Cove*. The material subsequently travelled to Tasmania and interstate venues for more than two years before returning to Launceston. As conservation work on the various artefact groups was completed more detailed studies were undertaken (Steele, 1995; Staniforth, 1996; Halley, 1997; Staniforth & Nash, 1998), culminating in publications summarising the history and archaeology of the site (Nash, 2001, 2002; Staniforth, 2003).

![Fig.4 - Excavation and recording of the Sydney Cove hull structure (Tasmanian Parks and Wildlife Service)](image)

**The Terrestrial Site**

During the course of the underwater excavation work some recording of artefacts and features associated with the on-shore activities of the *Sydney Cove*’s crew had occurred. In 1974, three years prior to the discovery of the shipwreck, Mr
David Carroll had collected a number of artefacts from the south-western end of Preservation Island including bottle fragments, porcelain and earthenware identical to types later excavated from the wreck (Strachan, 1986a:86-87). This material came from the area that has been identified as the cargo landing and storage site. The high point of ground behind this location was also identified as a possible historic site because of evidence of artefact material, and was named ‘Lookout Rock’ in subsequent reports.

During an expedition in April 1978 a close plot magnetometer survey was carried out at Lookout Rock, covering an area of approximately 10 m by 10 m (Henderson, 1978:27-32). The survey recorded a number of small anomalies, probably from iron fastenings or barrel hoops, but these were not further investigated. Fragments of ceramics and glass were also recorded from a seabird rookery lying behind the cargo landing beach, where burrowing birds periodically uncovered a range of artefact material. In 1978 and 1984 a number of historic structures on Preservation Island were noted and recorded, and a 1985 expedition accurately surveyed in these features (Clarke and Smith, 1986). They include stone cairns, stone walls, a house foundation and artefact material associated with the historical occupation of the island (Jetson, 1996). Further recording of these features, including GPS position fixing, was carried out during 1999 in conjunction with geological and vegetation surveys of the island (Harris and McKenney, 1999; Nash, 1999).

The major excavation of the shipwreck carried out during 1991-1994 did not include a component for investigating the associated land site due to restrictions of timing and funding. The subsequent concentration on the conservation, registration, interpretation and reporting on the underwater work also precluded any terrestrial excavations. Additionally, a number of other major maritime projects being carried out in Tasmania meant that further fieldwork at Preservation Island was restricted for a number of years to basic site inspection. Interest in undertaking additional work at the land site was prompted by a 2001 project of the Mitchell Library, Sydney, to electronically publish a number of maps and documents associated with Matthew Flinders. The chart produced by Flinders in 1798 during the *Francis* voyage clearly shows the position of the wreck, the campsite and house established by the crew.
Funding through the Federal government’s Historic Shipwrecks Program became available and assistance with fieldwork was sought through the Archaeology Department of Flinders University, Adelaide. The investigating team from Flinders University comprised Dr Mark Staniforth and three post-graduate students - Aidan Ash, Susan Briggs and Aara Welz. Staff from the Tasmanian Heritage Office were the author and maritime project officer Nathan Richards. The fieldwork at Preservation Island was undertaken over a 9-day period from 6-14 November 2002. Access to the island was by charter boat from the port of Lady Barron on Flinders Island. The expedition was based at Horseshoe Bay, where the present lessees of Preservation Island maintained a number of buildings that had previously been used as the base for the excavation of the Sydney Cove shipwreck site.

Using aerial photographs overlayed with the Flinders map, a scatter of glass and ceramic fragments were located on the first day of field work in an area of ground approximately 100 m north of the Lookout Rock (see Fig.2). The following day a metal detector survey covering a 50 m (north to south) by 8 m grid confirmed that a substantial number of metal objects lay within the same area. While the use of metal detectors on archaeological sites has been questioned because of associations with treasure hunters, magnetic survey methods are an extremely useful means of surveying a site where the deposition of metal artefacts is likely to have occurred (Scollar et al., 1990:570-575; Scott et al., 1990). In this case the metal detector (supplied by Minelab, Adelaide) was used over 2 m wide lanes and located approximately 45 ‘hits’ of varying strengths, that were physically marked on the site and drawn on the overall site plan.

The site is confined to a relatively elevated but flat piece of ground close to the southwestern side of the island. It slopes very gradually downwards towards the southern end, and is delineated by exposed granite rocks to the east and west. There is a ‘mutton-bird’ (Puffinus tenuirostris) rookery on the northern edge leading to a small hill of massive granite boulders. The ground is shallow and of a coarse sand/granite composition, and covered in places with large clumps of tussock grass (Poa poiformis) standing up to one metre high. At the northern end of the site, where the rookery is located, the soil abruptly changes to a deeper humus type covered with low-lying vegetation, primarily native ‘pig face’ (Carporotus rossii). The vegetation
Fig. 5 - Overall view of the survivors camp excavation in progress (Tasmanian Parks and Wildlife Service)

Fig. 6 - Close up view of excavation in progress at the northern end of the site (Tasmanian Parks and Wildlife Service)
Fig. 7 - Plan of the survivor camp test excavations (Tasmanian Parks and Wildlife Service)
and soil type are typical of mutton-bird rookeries, which are characterised by a combination of guano deposits and the deep redistribution of organic matter through burrowing activities (Brown et al., 1993).

A total of seven 2 m by 2 m squares were subsequently excavated across the site during the expedition (Fig.7). While the ability of relatively small individual excavation squares to give accurate and useful data may be questioned (see Schott, 1987; Sundstrom, 1993) in this case a broad sampling strategy rather than cross-site transects or area excavation was initially pursued (Orton, 2000:112-147). The distribution of the squares was based on the expected size of the site, the time available for excavation, the location of surface finds, and the results of the metal detector survey. The sequence of excavation for the squares was designated alphabetically (A, B, C etc.), and this report refers to them in this manner.

All squares were excavated in spits of 10 cm, to a maximum depth of 40 cm below surface level. Dry sieving of all excavated deposits was undertaken and this was particularly valuable in picking up the smaller fragments of bone and glass. The first two squares to be worked on were located at the western edge of the site and separated by a distance of 6 m. Square A produced a very small quantity of material at a shallow depth (maximum 30 cm), mostly consisting of porcelain and glass fragments. Two subsequent squares at the southern end of the site (C, E) also contained very little archaeological material, with square C almost completely barren.

The metal detector survey had picked up a concentration of material at the northern end of the site and the initial excavation of square B made it apparent that this was a prime area of deposition. In pursuing the evidence of a short term and singular archaeological event the decision was made to concentrate on the excavation of this area during the second half of the field period. A cluster of four squares (B, D, F, G) were excavated at the northern end of the site out to the edge of the existing bird rookery. All four squares contained considerable quantities of material including bottle glass, ceramics, animal bone, metal fastenings and fittings, and a number of special finds. Most of the material was located at a uniform depth of between 10-30 cm across the squares, with find depths increasing up to 40 cm towards the extreme northern end of the site.
In square D the remains of two upright timber posts were located standing 1.8 m apart - buried to a depth of 50 cm below the surface and packed around with stones for stability. These posts were positively identified as ship’s structure from the presence of holes for metal fastenings, and the analysis of the timber as teak (*Tectona grandis*), also used in the *Sydney Cove*’s hull. Adjacent to the timber posts and lying across excavation squares D and G were the remains of what appears to be a fire hearth built from small rocks and coarse earthenware bricks. A quantity of charcoal was found in the location and artefacts such as the bricks and bone material had evidence of burning.

At the close of the excavation the squares were backfilled with the excavated deposits, and revegetated with tussock grass. All artefact material was returned to Hobart for analysis at an archaeology lab maintained by the Tasmanian Parks and Wildlife Service. A separate report on the large collection of faunal bone material was undertaken as part of the study, and comparative work was carried out with the existing archaeological collection from the shipwreck site. The material from the terrestrial site was subsequently housed with the Queen Victoria Museum and Art Gallery, Launceston, the custodians of the complete *Sydney Cove* collection.
THREE
RESULTS - MATERIAL CULTURE OF THE SURVIVOR CAMP

Ceramics

Ceramics were carried on the *Sydney Cove* primarily in two forms, Chinese export porcelain as a component of the cargo, and coarse low-fired earthenwares for the use of the crew. Both types were previously recovered from the wreck site and have been reported on in detail (Halley, 1997; Staniforth and Nash, 1998). Ceramics of both types have also been found on Preservation Island itself as surface scatters at both the cargo landing/storage area and the campsite. Campbell and Clark regularly dealt in China goods, obtained via Canton by the East India Company and other country traders. While the export porcelain trade to Europe had declined significantly by the end of the 18th century there remained a strong demand in the United States and the European colonies. In the Australian context Chinese export porcelain has been found at virtually every early colonial archaeological site, sometimes in considerable quantities (Staniforth and Nash, 1998:9-10). Chinese export porcelain arrived in Australia via personnel goods, private trade allocations, and as ship’s cargo, although the record of these inward movements is difficult to trace in detail.

Captain Hamilton recorded that both Chinese tea and ‘chinaware’ (porcelain) was carried on the *Sydney Cove*, the latter eventually fetching highly inflated prices at auction in Port Jackson (Collins, 1802:98). While the crew of the *Sydney Cove* reportedly salvaged only three complete chests of porcelain, the underwater excavation work recovered approximately 250 kg of porcelain fragments, consisting of 160 kg of underglaze blue painted ware and 90 kg of overglaze polychrome painted ware. The export porcelain was concentrated in an area approximately 2 m wide in what would have been the main hold, where it was less likely to have been recovered during the salvage operations. Analysis of the shipwreck collection identified at least thirty-five varieties of decoration and body type which were divided into four broad functioning groups consisting of toiletry wares, dinner wares, tea wares and nested bowls (Staniforth and Nash, 1998:21-42).
From the campsite excavation a total of 289 fragments of porcelain were recovered weighing a total of 3.506 kg. Porcelain was recovered from all excavation squares, with the largest concentration at the northern end of the site in square D. A number of fragments were also recovered as surface scatters during the pre-disturbance survey, and these provided a clear indication of where the site would be located. A comprehensive study of the export porcelain from the Sydney Cove wreck has already been published (Staniforth and Nash, 1998) and the material from the camp was in most cases readily identifiable. Examples were located from underglaze dinner plates and wash basins, as well as an overglaze tea saucer (type 9) and a nested bowl (type 1). However, the majority of the pieces were from the two types of underglaze wash basins previously identified from the wrecksite (Staniforth and Nash, 1998:22-23,33-34). While the examples recovered from the wreck had been reconstructed from a very small number of fragments, a more significant amount of this type of ware was recovered from the campsite. Of all the varieties of export porcelain carried as part of the ship’s cargo the wash bowls would have been one of the most practical containers for their size and shape, and may represent a deliberate choice of ‘useful’ items by the survivors.
While a very small percentage of the non-Chinese ceramics recovered from the wrecksite were of European origin, the majority exhibits the characteristics of traditional Indian pottery. Although there was a widespread cottage industry throughout Bengal there was little trade in utilitarian pottery items and no evidence of an industrial scale of pottery manufacture in the region during this period (Halley, 1997:14-18). Goods were sold directly from the artisan’s premises or at markets associated with fairs and festivals. Rough earthenware ceramics were commonly used in India, where religious beliefs included the ritual defilement of eating utensils. It is unclear whether the Indian seamen followed such practices, although the practicalities involved in shipboard life and the low caste of any Hindus amongst the crew would weigh against this.

From the shipwreck site at least 79 individual pottery vessels were identified, with 70% of these defined as storage containers (Halley, 1997:32-49). The thickness of the examples and the lack of glaze are characteristics of low firing temperatures produced by open fires rather than enclosed kilns. The crudity of their construction and the roughly textured clay are evidence of extremely cheap ware designed for utilitarian rather than decorative purposes. Some of the pieces have been ‘slipped’ – a semi fluid clay coating has been applied to the pottery to ensure that they were waterproof – and at least one intact jar has been glazed with iron oxide during the firing process. There is no indication of what was originally carried in the jars, either from the archaeological evidence or historical documentation.

Analysis of the pottery fabric, decoration and design also revealed a considerable variety of wares, implying that the ship might have been supplied in a piecemeal fashion from the various pottery-producing regions around Calcutta that were accessible to the country traders. The crudity of the ceramic ware from the Sydney Cove indicates that it was for the use of the crew rather than a trade item, although this does not preclude the possibility that some of this type of pottery may have ultimately ended up in the colony at the conclusion of the voyage.

The material from the land site consisted of 56 fragments, primarily recovered from squares D and G. The material is largely undiagnostic except for one identifiable
base fragment. This is from a very large coarse earthenware container, with a base diameter estimated at 400 mm and a body thickness of 20-25 mm. Eleven fragments are from another large container, exhibiting a dark brown/black external glaze that is characteristic of the application of iron oxide during the firing process. Most of the remainder of the fragments are similar to the unglazed coarse earthenware examples recovered from the shipwreck site. These have previously been identified as originating from shallow bowls used for the transfer or eating of foodstuffs (Halley, 1997:35-37).

A further category of ceramics, located on both the underwater and terrestrial sites, were a number of earthenware bricks believed to have originated from the Sydney Cove’s galley oven. The danger of fire at sea meant that all cooking fires were heavily insulated from the ship’s timber structure. On larger naval vessels iron stoves were more common but most merchant craft used brick ovens or fire boxes supporting metal cooking cauldrons (Lavery, 1987:195-201). During the excavation of the shipwreck a very small quantity of coarse earthenware galley bricks were recovered, the intact examples measuring 200 mm (length) by 95 mm (breadth) by 40 mm (depth). The most obvious implication from the relative lack of this type of material from the underwater site is that the majority of the bricks had been salvaged from the lower deck galley stove for reuse on Preservation Island. This was confirmed by the recovery from squares D and G of almost 35 kg of fragmented bricks, exhibiting similar dimensions to the examples from the shipwreck. The association of the bricks with deposits of burnt wood, charcoal and burnt animal bones confirms that they were used for a hearth or fireplace connected with the living quarters.

Glassware

The agency house of Campbell and Clark were heavily involved in the sale and production of spirits at Calcutta and the importation of alcohol from primarily European sources. Consequently, the largest single cargo item on the Sydney Cove was the consignment of spirits in the main hold. Alcohol, particularly rum, was usually included in the cargoes of the Indian country vessels as it was profitable and eagerly sought by the colonists despite the opposition of government officials (Nash, 2001:10). The Sydney Cove’s alcohol consignment was described as nearly 7,000 gallons (31,500 litres) of spirits by contemporary observers (Collins, 1802:80), and
Captain Hamilton’s account of the salvage records that the cargo included casks of rum, brandy and Madeira (wine) (Hamilton, 1797:72-73).

Hamilton mentions that only 12 cases of bottled spirits (gin and brandy) were recovered but the underwater and terrestrial excavations indicates that over 130 cases of bottled beer, wine and spirits were on board (Nash, 2001:127-131). As well as hundreds of diagnostic bottle bases and necks, a total of 37 intact examples were recovered from the wreck site, of which 22 are still sealed with part of their original contents. Samples of the contents were analysed by the Australian Wine Research Institute, South Australia. Although all the examples were contaminated by seawater, it was confirmed that the bottles had contained red wine, beer, and fruit ciders or cordials (Bruer, 1993).

The recovered glassware is of a dark green ‘black’ colour favoured for the protection of the bottle contents from the damaging effects of light. The relatively low excise tax paid on the manufacture of green glass caused it to be used for most common purposes. The bottles were all hand blown and they exhibit the characteristic flaws and lack of symmetry associated with this method of manufacture. The strength and sturdiness of the glass bottles also made them suitable for transport by sea and their thick necks allowed them to withstand the blows of wooden mallets during corking. With their interests in the production, importation and retailing of alcohol it is likely that some of the bottled cargo was actually prepared by Campbell and Clark at Calcutta, and this has been confirmed by the presence of the company’s wax seal on some examples from the wreck site (Strachan, 1986a:57-59).

While fragmented bottle glass was recovered from all seven of the terrestrial excavation squares, the main concentrations were found at the northern end of the site close to the ‘hearth’ area. There were no intact examples recovered but some bottles had been broken in such a way that most component pieces remained in situ (Fig.10). Hamilton stated that at a very early stage the cargo of spirits and wines had been removed to Rum Island to prevent the crew from using them, but the remains of at least 31 bottles were located during the test excavation. Bottle glass from the period
has also been located as surface scatters on both Preservation and Rum islands, particularly from the cargo landing/storage areas.

![Image of broken alcohol bottles](image)

Fig. 9 - Broken alcohol bottles lying in situ in excavation square G (Tasmanian Parks and Wildlife Service)

Twenty-nine of the land site examples were identified as wine-style quart bottles with a capacity (known from the shipwreck material) varying between 770 and 785ml, or approximately 26 fluid ounces. The wine-style quart was the commonest type of bottle used during the late eighteenth century and early nineteenth centuries, and examples have been recovered from many archaeological sites from this period. The other two bottles identified from the excavation were ‘case gin’, which are characteristically square in section with roughly flat sides, a short flaring neck and a shallow, domed shaped base. They have more than double the capacity of the wine and beer quart-bottles examples from the wreck. Another glass base, with an octagonal shape and fluted corners, is possibly associated with body and neck fragments found on the wreck site. This example has been identified as a ‘snuff bottle’ designed for the American market.
Fig.10 - Intact alcohol bottles recovered from the Sydney Cove (Queen Victoria Museum)

**Faunal Material**

The largest single category of artefacts recovered from the campsite are the hundreds of animal and bird bones from the area around the hearth. Excavated bones from the shipwreck site had previously been examined by Steele (1995), who had identified gross proportions of 78% cattle (Indian ‘Zebu’ breed), 10% pig, with the remainder unidentified (5%) or from sheep, birds and fish. The cattle and pig bones in the Sydney Cove collection are derived primarily from the ribs and adjoining vertebrae, and they exhibit numerous butchery marks from their dissection into standard size sections for salting and packing. Salted meats and livestock were regularly included in the cargoes of the Indian country vessels and it is also known from the documentary evidence that the Sydney Cove had cattle and horses aboard. The analysis concluded that the salted meats were poor quality and primarily derived from the cheapest portions of mature animals, a fact supported by contemporary historical observations (Nash, 2001:134-137).
A relatively large proportion (32%) of the bones from the campsite were unidentifiable because of their fragmentary nature, and the remainder were classified as either non-native (12%) or native species (56%) (Langeludekke, 2003:2). The non-native species consist of cattle (5%), pig (2%) and sheep (5%), and these examples have similar characteristics to the material recovered from the shipwreck (body part and butchery technique) implying that they were originally part of the ship’s stores or cargo. The largest single category of bones (45%) is derived from the short tailed shearwater (*Puffinus tenuirostris*), or ‘mutton-bird’. Over 80% of the world population of 23 million birds breed in Tasmania with the largest rookeries on the islands of Bass Strait (Skira, 1993:ii). The Furneaux Islands in particular have very large concentrations of these birds during the breeding season (September to April) as described by contemporary observers such as Flinders (1814:xxxiii). Preservation Island was also known as ‘Mutton Bird Island’ and was historically noted for the large number of birds that it supported (Stokes, 1846:452; Plomley, 1987:221-222,284). The mutton-bird rookeries have now been reduced to an area at the southern end of the island covering around 1% of the total landmass. However, current breeding numbers on Preservation Island are still estimated at around 41,000 pairs, with a further 66,000 pairs on Rum Island (Brothers, 2001:219,224).

*Fig.11 - The short tailed shearwater or ‘mutton bird’ (National Library of Australia)*
Although the mutton-bird bones recovered from the land site are adjacent to an existing rookery it is unlikely that natural processes introduced the bones. They are located in a coarse sand/granite that shows no evidence of previous bird disturbance and were primarily found in a narrow layer (10-30 cm deep) in immediate association with the fire hearth feature and other artefact material. The mutton-bird bones from the camp site bear little evidence of butchery patterns, and given the size of the birds (average 800 gm) they may have been processed for consumption without a great deal of cutting. Less than 10% of the bones show evidence of burning, suggesting that the birds were roasted whole and the bones discarded close to the hearth.

The land site also showed evidence of other species that were exploited by the crew of the *Sydney Cove*. The faunal assemblage included wombat (*Vombatus ursinus ursinus*) (5%), brush wallaby (*Macropus rufogriseus*) (5%), and the Cape Barren goose (*Coreopsis novaehollandiae*) (1%). Fossil evidence indicates that there were original populations of both the brush wallaby and the Cape Barren goose on Preservation Island (Hope, 1973: 172). Both Flinders (1814:cxxxiv) and Collins (1802:151) stated that an abundance of ‘small kangaroos’ (wallabies) were originally found on Preservation Island ‘but so many had been destroyed by the people of the Sydney Cove, that they had now become scarce’. Collins also noted that the crew had been killing kangaroos and birds on a neighbouring island, probably nearby Cape Barren Island, and had eaten wombats while at Preservation Island (Collins, 1802:81,99). On the third salvage voyage to the wreck in 1798 Matthew Flinders encountered wombats on Cape Barren and Clark Islands, and stated that ‘its flesh resembles lean mutton in taste and to us was acceptable food’ (Flinders, 1814:cxxxv).

Very small quantities of seashells were also recovered from the campsite. There is no evidence of Aboriginal shell middens in the immediate area and the soil types preclude the natural occurrence of shell deposits. The examples are relatively intact also indicating that they were introduced on to the site rather than naturally occurring. The examples are primarily from warrener (*Turbo undulatus*) and mussel (*Mytilus edulis*) both known as indigenous food sources. A smaller sample are from
species that are not commonly used as food – tulip shell (*Fasciolaria australasia*), cartrut shell (*Thais orbita*), and wavy volute (*Amoria undulata*) (Richmond, 1997).

**Metals**

The pre-disturbance survey carried out over the campsite indicated that some metallic objects still lay in situ, particularly in the vicinity of what proved to be the fire hearth. The largest type of metal finds consisted of 3.48 kg of heavily corroded and fragmented iron fastenings, primarily from the northern end of the site. The examples measured from 50 to 190 mm in length and were up to 16 mm in diameter. They were similar to the iron fastenings that had been used in the construction of the ship. Indian builders made great use of iron bolts and spikes in shipbuilding as it was relatively inexpensive, easily worked, and did not corrode as quickly when used with oily woods such as teak. The excavation of the wreck had confirmed that iron fastenings, rather than copper-alloy spikes or timber treenails, were used almost exclusively to secure the vessels structure (Nash, 2001:113). The iron fastenings found at the camp site may have come from the upper structural timbers, or were part of the ship’s stores removed during the salvage operations.

Some copper-alloy fittings were also used in the fitting out of the *Sydney Cove* in the form of large spikes to secure the rudder assembly and smaller sheathing tacks that secured the copper-alloy hull sheathing. The relatively new form of hull sheathing had been introduced to Eastern waters more rapidly than in Europe, as ships timbers were more susceptible to marine borers in warmer tropical waters (Strachan, 1986b:15). Many thousands of sheathing tacks were used in the *Sydney Cove’s* hull as a single sheet of sheathing, measuring 500 mm by 1205 mm, required approximately 130 individual tacks (Nash, 2001:112). The sheathing tacks measured up to 40 mm in length and were composed of 70% copper with other metals such as lead, tin and zinc in smaller proportions. As the hull sheathing lay partly buried or below the waterline it is likely that the 16 examples of sheathing tacks excavated from the campsite originated from the ship’s stores.

Also sourced to the ship’s structure or stores were 11 pieces of lead sheeting, weighing a total of 1.19 kg, and located primarily in square D. The earliest excavations of the shipwreck had recovered similar examples of lead sheeting from
the midships area, that had been identified as possible fittings from the ships bilge pumps (Strachan, 1986a:38-39). However, the function of many of the examples recovered from the shipwreck could not be identified and this also applies to the material excavated from the campsite. A final category of metal finds were 121 fragments of iron barrel hoops, weighing a total of 1.19 kg and measuring a maximum of 35 mm in width. ‘Wet coopering’ of timber casks to hold liquids required iron barrel hoops to bind the timber cask staves tightly together. As the majority of the *Sydney Cove*’s cargo was contained in casks, there were numerous fragmented iron barrel hoops also found throughout the shipwreck and the associated cargo storage areas (Nash, 2001:123-124). The evidence of casks at the campsite could imply either the presence of part of the alcohol cargo, or equally other usages including the storage of general goods, food or water.

**Special Finds**

One of the disappointments of the shipwreck excavation was the lack of evidence that could be directly related to life on board the vessel. Some tool parts were recovered including a net needle, a sailmakers fid, carpenter’s scribes, an iron spoke shave, handles and a chisel. Other artefacts identified with the crew included a pewter spoon, hairbrushes, wineglass fragments, a brass fishhook, a coconut shell dipper, and clay pipe fragments (Nash, 2001:118). It is evident from the lack of material on the shipwreck that the crewmembers were able to salvage most of their personnel possessions and the equipment required for survival on Preservation Island.

The paucity of finds that may be identified as tools or personal possessions was carried over to the terrestrial site. A very small number of copper-alloy items comprised the majority of the special finds from the site. These consisted of part of a hinge, two small drawer knobs, a tubular spout, and an unidentified instrument-winding key. A single copper-alloy coin or medallion measuring 13 mm in diameter was too badly corroded for positive identification, but from fragments of legible lettering appears to have originated in the Middle East. The object has a hole drilled in the centre and may have been a personal keepsake. Of particular interest was a small iron hatchet head measuring 35 mm along the blade and 45 mm total height. A single section of a clay pipe stem was also recovered as well as the earthenware mouthpiece of what appears to be a form of recorder or flute.
FOUR
DISCUSSION - APPLICATION OF THE MODEL

Authority, Social Structure and Camp Organisation

The organisation of the *Sydney Cove*’s crew was complicated by the fact that the racial origins of the men varied considerably. Captain Hamilton, the mates, carpenter and four leading seamen were all European while the remainder of the crew comprised 44 unnamed Indian seamen. Due to the extent of European seaborne activities in the East and the lack of suitably trained men, the practice of employing indigenous seamen was firmly established in the country trade. The men were engaged by local labour recruiters known as *ghat serang*, who contracted with ship owners for the supply of an entire crew. During the voyage itself an overseer known as the ‘serang’, equivalent to a European boatswain, was responsible for the payment and control of the men. Two or three ‘tindals’, or boatswains mates, responsible for divisions of the crew usually assisted him (Earl, 1837:82-83). The shipboard practices and organisation of the lascars meant that manning levels for county vessels were relatively high, with the average for Australian voyages at around 16 men per tons burden (Nash, 2001:27).

During the voyage and its aftermath the authority of Captain Hamilton and the ship’s officers were tested on a number of occasions, but discipline never broke down entirely. Caught in a heavy gale on 25-26 January the crew refused to stay on deck to man the exposed ships pumps, despite every effort of the officers including the securing of the hatches leading below. Consequently, the crew were sent down to bail directly from the pump well, ‘which they did with much good will’ (Hamilton, 1797:66). While a number of deaths occurred prior to and after the stranding of the *Sydney Cove* there was no catastrophic loss of life associated with the actual wreck event, and the command structure remained intact. After the wreck the crew were persuaded to take on the task of salvaging the ship’s equipment and cargo despite their sick and weak state. However, Captain Hamilton stated that the men subsequently made ‘improper use of the spirits and wines’, and he was forced to move that part of the cargo to the adjacent Rum Island (Hamilton, 1797:69).
While there were cultural and organisational differences between the crew, there is little documentary or archaeological evidence on how this was reflected while they were on Preservation Island. The Europeans remained in command of most aspects of life ashore – the salvage operations, the guarding of the cargo, and the rescue voyage. Beyond this, Hamilton’s account does not mention how the actual camp was organised. On country ships the Indian portion of the crew were commonly housed on deck or had the use of the forecastle, while Europeans had more sheltered accommodation below deck or in cabins (Earl, 1837:82-83). When the men were living ashore in canvas shelters from February through May 1797 they may have been segregated, but the building of a single large (and crowded) dwelling certainly brought them all together in one location. Unfortunately the limited extent of the test excavations at the dwelling, and the distinct lack of personal items provides little information in this regard.

Relationship Between Wreck and Camp Location

When the Sydney Cove boats first came ashore they did not make for the nearest point of land on Rum Island, only 200m from the wreck. Rum Island is only 13.4 hectares in size and is very low lying and scrubby - clearly not an ideal location for a camp. Preservation Island was clearly the preferred option and the archaeological evidence suggests that a small, protected beach at the southernmost end of the island was used as the cargo landing and storage area (Fig.13). The beach is the closest point to the wreck on Preservation Island and many fragmented items from the cargo have been found behind the beach, where they are periodically dug up by the burrowing activities of a large mutton-bird rookery.

According to the Flinders map the initial campsite does not appear to have been close to the wreck, but was located some 250 m northwards from the cargo beach, where there is access to a small bay (Fig.2). No archaeological evidence has been found to confirm that this is actually the location of the initial camp, and it is a relatively poor location with sparse vegetation, little shelter and no apparent water. The campsite was probably moved during May 1797 when the crew ceased their main salvage activities, and Captain Hamilton had the men build a house so they could survive the coming winter (Hamilton, 1797:72).
This house is depicted on the Flinders map as lying approximately 150 m north of the cargo landing area, and this is the location where the structural remains and artefact concentrations were located during the test excavations. Once again the site for this dwelling is not ideal, as it is elevated and very exposed close to the western side of the island. The location does, however, provide an excellent viewing point – taking in the cargo landing area, the wreck site and the southern approaches to Preservation Island. It is also within direct sight of a stone structure, believed to be a signal cairn erected by the crew at the eastern side of the island (Strachan, 1986:89).

Salvage

Many of the activities described in this chapter were predicated on the intensive shipwreck salvage (and jettisoning) activities that the *Sydney Cove’s* crew undertook. On 8 February 1797 as the foundering vessel passed through Banks Strait and approached Preservation Island Captain Hamilton had the crew ‘throw overboard bags of sugar, heavy bales and boxes’ (Hamilton, 1797:68). Although not mention in Hamilton’s account, it is possible that some heavier items such as cannon were also jettisoned, given the location and number of surviving guns on the underwater site and...
the presence of larger calibre ammunition that does not fit these guns (Strachan, 1986:50-53). As the Sydney Cove drew close to Preservation Island on 9 February Hamilton had the crew cut away part of the ship’s bulwarks (railings) and launch the longboat with a supply of rice, firearms and ammunition. The following day the crew were employed in retrieving wet rice and drying it, and getting some cargo out from the lower deck area. They also removed canvas sails, and probably some timber spars, to erect tents on Preservation Island (Hamilton, 1797:68-69).

After the initial landing, work continued over a number of weeks to hoist out the cargo of spirits and other goods stored in the hold. For a period the wreck initially remained relatively intact within the protective arc of Preservation and Rum Islands, as it was only directly exposed to weather from a southerly direction. Three weeks after the Sydney Cove had struck Captain Hamilton wrote to Governor Hunter at Port Jackson, requesting assistance and stating that ‘the ship now lays full of water but pretty well sheltered from the sea as to run no great risque of going to pieces for some time’ (Hamilton, 1797:70). The salvage effort became more difficult as the Sydney Cove shifted and settled into the sandy seabed, and the excavation work confirmed that the vessel had developed a list to starboard and settled at the stern to eventually bury the keel in up to 2 m of sediment (Nash, 2003:163-166).

Although the crew attempted to salvage as much of the cargo as possible they were limited by their ill health, the lack of the longboat and the difficulties of reaching the waterlogged hold. Restricted to working on the wreck at low tide the men also undertook such tasks as drying the bundles of textiles and placing the casks on logs to minimise damage to the iron barrel hoops (Hamilton: 1797:71). After a week of southerly gales at the end of April, the salvage efforts ceased when the lower part of the Sydney Cove’s hull collapsed and the main and mizzen masts were driven through the timbers. The sequence of the hull collapse is borne out in the archaeological record, and the effects of the break-up on the remaining cargo are most evident on the wreck site where the alcohol and the export porcelain were stored in the main hold. Of the bottled alcohol, less than 4% of the total were recovered intact, and the figure is considerably lower for the porcelain (Nash, 2001:165).
It is estimated that around 60% of the spirit cargo was removed from the wreck (Nash, 2003:123), and Collins (1802:80) reports that 3,500 gallons of the rum on board was eventually delivered to the government commissariat at Sydney. According to Hamilton the salvaged goods consisted of 2 casks of brandy, 105 casks of Bengal rum, 4 pipes of Madeira (wine), 12 boxes of soap and candles, 2 barrels of tar, 2 casks of vinegar, 12 cases of gin and brandy, 1 horse (mare), 4 boxes of wax candles, 48 chests of tea, 1 keg and two bales of tobacco, 3 chests of China ware (porcelain), 1 buggy, 1 organ, washed and scoured textiles, and some stores including 30 bags of provision rice (Hamilton, 1797:72-73). From the archaeological evidence it is apparent that the crew also removed personal possessions, stores, equipment and even ship fittings such as galley bricks, hull fastenings, and some timbers. However, there is no indication that they undertook the systematic breaking up of the hull and major items of equipment such as cannon and anchors remained on the wreck (Nash, 2001:115-116).

A significant feature of the salvage operations was the eventual transfer of the recovered material from Preservation Island to Port Jackson over three voyages between June 1797 and February 1798. On the first of these voyages the salvaged goods included 43 chests of tea, one pipe (large cask) of Madeira, wax candles, a bale and a box of textiles, and 30 bags of rice (Hamilton, 1797:72). There is no detail on what was carried on the following two voyages. Most of the salvaged spirit casks were returned to Sydney if Collins figure of 3,500 gallons is correct and it is also recorded that some of the Sydney Cove goods, including Chinese porcelain, were sold at public auction in March 1798 (Collins, 1802:80,98). However, Captain Hamilton also noted that a proportion of the cargo had supposedly been destroyed by gales while he was away at Port Jackson. The archaeological evidence from the cargo storage areas on both Rum and Preservation Island suggest that this may have been the case.

Opportunistic salvage of the Sydney Cove also appears to have been undertaken after the final departure of the crew from Preservation Island. It was noted that all the brick examples excavated from the campsite were heavily fragmented, making it likely that the intact pieces had been removed for reuse. This may have been undertaken by the crew on the last of the voyages on the Francis but is more
likely to have resulted from the activities of the sealers who were active in the area from October 1798. Examples of Chinese export porcelain from the Sydney Cove have been found as surface scatters at the Kent Bay sealer’s camp on Cape Barren Island. The location of galley bricks similar to the examples from the Sydney Cove would add further weight to the hypothesis that the sealers were actively salvaging material from Preservation Island.

Subsistence

As a self-contained identity ‘the ship’ would contain the tools, equipment, stores, water and cargo that could be utilised for survival. In some shipwreck situations these items would not be available but the location of the Sydney Cove meant that many of the items needed to survive ashore could be removed. Shortly before the ship was run aground at Preservation Island on 9 February the longboat was sent off with rice, firearms and ammunition. After landing some of the crew the men then searched for water as ‘not a drop could be got from the wreck’ (Hamilton, 1797:68), presumably as the water casks were now submerged in the main hold. The crew resorted to digging a seven-foot deep well, which produced brackish but drinkable water for the men and the livestock. Despite Captain Hamilton’s account of the wet and cold conditions that the crew would experience over the following months it is likely that wind and temperature were the main factors rather than rain. Collins (1802:152) stated that ‘water was very scarce while these people were on the island’, and this is very likely.

Preservation Island has no permanent water sources except for some springs that are sometimes present where sandstone emerges from below the dominant granite outcrops. From the author’s observations over the last 15 years there are occasionally pools of fresh water at the southern end of the island, but these are usually short lived. The area of ‘low swampy ground’ where the survivors later buried four bodies very rarely has any surface water. The nearest modern climate recording station relevant to Preservation Island is at Swan Island, about 30 km to the southeast. Swan Island records an average rainfall of about 616 mm, with the highest monthly rainfalls during winter. An annual average for Preservation Island of 468 mm predicted by BIOCLIM modelling, still puts the rainfall in the driest part of the Furneaux Islands (Harris and McKenney, 1999:86).
The other main concerns of food and shelter were addressed by Captain Hamilton the day after the wreck, when the men were employed in erecting tents and removing wet rice from the wreck and drying it. As well as the food stores that normally would be carried on board, the cargo of the *Sydney Cove* contained foodstuffs such as rice, sugar, salted meats, tea and alcohol. Uncertain of how long they would be stranded on the island Hamilton rationed out the rice ‘at one tea cup of rice per diem for each man’, and there was at least thirty bags of provision rice left when the first salvage vessels from Port Jackson arrived in June (Hamilton, 1797:72). Despite Hamilton’s efforts to separate the salvaged spirits from the crew the evidence of broken bottles recovered during the test excavation shows that these cargo items were also being used by the men.

It is also evident from the faunal bone assemblage (12% non-native animal), that the crew ate some of the salted meat cargo. Live cattle and horses were also part of the cargo (Hamilton, 1797:68,73), and although these would have been too valuable to slaughter for food at least one of the cows died on the island (Collins, 1802:81). Small proportions of the bones recovered from both the underwater and terrestrial sites were also derived from sheep, probably carried as fresh meat stores for the crew. Finally, it is noted that the men on Preservation Island had two hens and their eggs as well as some breeding pigeons (Collins, 1802:151).

The documentary and archaeological evidence also points to the extensive use of native wildlife in the crew’s diet including mutton-birds, wallabies, wombat and Cape Barren geese. Flinders noted that mutton-birds in particular had ‘constituted a great part of their food during more than six months’ (Flinders, 1814:cxxxiii), and it is known that the six crewmembers left at Preservation Island between the salvage voyages built a structure for smoking meat (Collins, 1802:81). There are other species of wildlife that do not appear in the archaeological record, but may also have been exploited by the crew. There is a resident fairy penguin colony at Preservation Island (Brothers, 2001:218), and Flinders (1814:cxxxiv) mentions that while these birds flesh was ‘strong and fishy’ the skins were useful for waterproof caps. There were numerous seal colonies on the nearby islands (Plomley and Henley, 1990), and there are various species of fish and crayfish in the coastal waters. It is likely that the crew
did have fishing gear, as a copper alloy fishhook and a bone net-needle have been recovered from the wreck site (Nash, 2001:118). The campsite excavation also indicates that the crew may have eaten some local shellfish.

**Shelter and Structures**

The *Sydney Cove* survivors initially lived in canvas tents as their primary shelter during their first three to four months on Preservation Island. Flinders (1814:cxxxiv) reports that they were pitched close to a mutton-bird rookery, and Hamilton (1797: 71) described how bad weather at the end of April 1797 had left the tents in tatters. The same spell of bad weather marked the end of most salvage efforts on the collapsed wreck and Captain Hamilton had the men, ‘by degrees building a house large enough to contain all hands in bad weather as inevitable death appeared to be the consequence of our again encountering under canvas such a hurricane as before mentioned’ (Hamilton, 1797:71). The Flinders map depicts this house as a rectangular structure with a pitched roof and at least one window and a front door. The six members of the crew who were left behind on Preservation Island from June 1797 until February 1798, also constructed a smoke house for meat processing and possibly a poultry shed (Collins, 1802:81,151).

It is apparent from the test excavation that elements salvaged from the shipwreck were used in the construction of the dwelling. The two upright timber posts believed to be part of the building frame were identified as teak ship’s timbers. It is possible that locally obtained timber was also used for hut construction as Preservation Island originally had stands of native she-oak (*Allocasuarina verticillata*) and tea-tree (*Leposperum laevigatum*) (Harris and Kenney, 1999). Some large trees are depicted in an 1831 painting of the island (Nash, 2001:73) and nearby Cape Barren Island also has extensive stands of eucalypts. From the quantity of iron fastenings, copper-alloy sheathing tacks, and lead sheeting found in association it can be assumed that these items were also used in the construction of the dwelling. The use of ship’s fittings and timbers for building construction has also been observed at other coastal archaeological sites. Two shore whaling stations excavated at Adventure Bay and Lagoon Bay in southeast Tasmania had examples of copper-alloy sheathing tacks and hull sheathing associated with buildings (Nash, 2003:72). Test excavations at a number of sealing sites at sub-Antarctic Macquarie Island have demonstrated that
timbers from some of the dozen shipwrecks on the island were reused in hut construction (Townrow and Nash, 1990).

\[\text{Fig. 13} - \text{Stone structure on Preservation Island believed to be a signal cairn (Tasmanian Parks and Wildlife Service)}\]

The survivors may have built other structures on Preservation Island. Collins (1802:151) mentions that a ‘store-house’ was built for the wrecked cargo but this is not mentioned by any other observers, and no archaeological evidence has been located. The historical occupation of Preservation Island over the last 200 years has also left a physical legacy such as hut foundations, dry-stone walls, lookouts and rock cairns (Nash, 1999). A circular stone construction measuring 3.5 m diameter and 0.7 m in height is located on a prominent point, approximately 400 metres northeast of the camp site. This may be associated with the signal fire that was lit on 8 June 1797 to attract the attention of the salvage vessels sent from Port Jackson (Hamilton, 1797:71).

At the highest point on the northern end of Preservation Island there is a three-sided semi circular stone construction measuring 2.8 m across and 1.4 m in height. The site offers sweeping 360° views, and may have been built by the Sydney Cove’s
crew so vessels approaching either end of the island could be seen. However, there may be other explanations for the construction of this cairn, such as the 1842 survey visit of HMS *Beagle* (Stokes, 1846:447-454) or the salvage activities connected with the nearby wreck of the iron clipper ship *Cambridgeshire* in 1875 (Broxam and Nash, 1998:192-194).

As a final note, in March 1802 a French scientific expedition under Captain Nicholas Baudin landed a party at Preservation Island that noted wreckage and huts made of branches tied together with cordage (Plomley, 1983:98). It is possible, however, that these huts were constructed by the sealing gangs who were based at Kent Bay on nearby Cape Barren Island since 1798. Chinese export porcelain identical to the material from the *Sydney Cove* has been found at the Kent Bay sealing site, suggesting that they were visiting Preservation Island during this period.

### Health and Mortality

The health of the *Sydney Cove*’s crew was poor even before they reached Preservation Island and around 25 January 1797, five of the lascar seamen collapsed and died while manning the ship’s pumps (Hamilton, 1797:66). The description of these casualties indicates that scurvy was beginning to effect the men. Caused by lack of essential vitamins, the disease can manifest itself in as little as six weeks depending on the prior condition of the crew and their shipboard diet (Thrower, 1972:156-163). Sudden death from circulatory failure during physical exertion was one of the symptoms of scurvy, and other indications such as swollen limbs and extreme lassitude later became apparent. The continued presence of the disease amongst the crew was later confirmed in a letter from Governor John Hunter to Sir Joseph Banks, stating that some of the survivors had been ‘much troubled with scurritic swellings’ (Mitchell Library, John Hunter Letters, 15 August 1797).

When the *Sydney Cove* was run aground Captain Hamilton stated that the ‘sickly part of the crew’ were immediately taken ashore but in the short term their condition on Preservation Island does not appear to have improved. Thirteen men were on the sick list and the remainder, cold and undernourished, could only work for a few hours each day (Hamilton, 1797:71). Three of the lascars and a European passenger died of scurvy ‘the complaint a swelling all over the body beginning at the
feet’, and were buried in a ‘low piece of ground’ some 150 m east of the camp site (Collins, 1802:152). No archaeological work has been undertaken to determine whether this is indeed the burial ground for the *Sydney Cove* victims. In Australia the recovery of skeletal material from a shipwreck survivor camp has only been undertaken at sites associated with the 1629 wreck of the *Batavia* in Western Australia (Pasveer, 1998; Pasveer et al., 1998).

Some later observers, including Matthew Flinders, blamed the deaths on the quality of the water supply on Preservation Island but there is no scientific evidence for this assumption (Flinders, 1801:26; Collins, 1802:152). The effects of the cold climate on the lascar seamen are mentioned by Hamilton a number of times in his account, and this may have been an additional factor in the general health of the men. The susceptibility of the lascar seamen to the cold was mentioned by other European observers (Earl, 1837:82-83; Collins, 1798:273) but this may have been more a result of poor equipping. It should be noted, however, that the lascars had received extra blankets and clothing at Calcutta before the *Sydney Cove* departed.

The building of more substantial shelter and the better utilisation of the native wildlife improved the health of the crew at Preservation Island. However, more casualties were to occur during the rescue trek to Port Jackson (14 men) and the loss of the salvage vessel *Eliza* (6 men) (Nash, 2001:43-48). Of the six men later left on Preservation Island to look after the cargo, one man also died before the final salvage voyage in February 1797. The 38-year old Captain Hamilton also died in Sydney in June 1798 as ‘he never recovered from the distresses and hardships which he had suffered on the loss of his ship’ (Collins, 1802:117). Out of the 56 men who had originally been on board the *Sydney Cove* when it left Calcutta, 32 had died – a casualty rate of just under 60%.

**Development of a Rescue Strategy**

The survivors of the shipwreck were presented with a number of possible options for their rescue. The first, to wait for rescue from a passing vessel was not feasible. The grounding of the *Sydney Cove* at Preservation Island put the crew at least 80 to 100 kilometres away from what was still a very sparsely used shipping route. Only five large vessels journeyed to Port Jackson via the south in the 12 months
following the wreck and the chances of a ship passing close to the islands was negligible (Cumpston, 1977:32-34). The existence of Bass Strait, separating Tasmania from the Australian mainland, was at the time unknown. The area was largely uncharted except for some parts of the eastern side of the Furneaux Group, which had been noted by Captain Tobias Furneax of the Resolution in 1773. As it was not possible to walk to safety from their isolated island the only hope of rescue was to send a boat almost 800 kilometres north by sea to Port Jackson (Hamilton, 1797:69).

The longboat was haulled out for repair and the carpenter raised an extra line of hull planking to make the vessel more seaworthy. The crew comprised 17 of ‘the best men’ commanded by second mate Hugh Thompson and including assistant supercargo William Clark and at least two European seamen. The boat crew was equipped with provision rice, firearms and ammunition, and some trade goods. The expedition carried a letter from Captain Hamilton to Governor John Hunter explaining the circumstances of the wreck and requesting assistance to retrieve the crew and salvaged cargo.

Interestingly, in light of the efforts to recover the Sydney Cove’s cargo, Hamilton chose to assign the longboat and a large proportion of the fit members of the crew for the rescue attempt rather than the salvage work. In the circumstances all precautions were taken for the rescue voyage including structural repairs, the supply of stores and equipment and the choice of the crew. However the disastrous wreck of the boat near Cape Everard on 2 March meant that the previous rescue strategy had to be altered as the men were effectively cut off from their companions on Preservation Island and faced an overland journey of nearly 600 kilometres.

They subsequently followed the line of the coast but were often forced inland through the eucalypt forest, although the Great Dividing Range effectively blocked any move west. It is evident from William Clark’s account (Historical Records of New South Wales, 3:760-768) that the initial progress of the party slowed considerably as fatigue and poor diet began to effect the men. Between 16 April and 14 May 1797 the party grew progressively smaller as exhausted men were left behind, until only three of the crew remained when they were rescued on 15 May. Mounting a rescue and salvage expedition from Port Jackson was hampered by the lack of
available vessels in the colony, and it took a total of three voyages over a nine-month period to finally bring off all the crew, cargo and stores from Preservation Island.

**Survivor Camp as Contact Site**

While there is archaeological evidence that Aboriginal groups had occupied the Furneaux region up until c. 4,500 BP (Sim and Gait, 1992:6-7) the islands were not inhabited during the historical period. However, while the *Sydney Cove* survivors did not encounter indigenous groups at Preservation Island, the rescue trek to Port Jackson produced one of the earliest and most extended contacts between a shipwreck crew and Australian Aboriginals.

During their trek the *Sydney Cove* crew regularly met Aboriginal groups who reacted to their presence by aiding or hindering them in a seemingly unpredictable fashion. Due to its nomadic basis, Aboriginal society had developed a series of highly structured rules and behavioural codes that defined the protocol of these encounters. Through ignorance of these procedures the seamen may have provoked hostile behaviour where it was not originally intended, although Clark noted that the majority of these meetings ended peacefully. The crew also made judicious use of their remaining possessions, displaying their limited weaponry (guns and swords) or using cloth as a trade good during these encounters.

In a number of instances the Aboriginal men obtained fish, shellfish and kangaroo for the crew and guided them or assisted with river crossings. Interestingly, as the crew came closer to Port Jackson these encounters became more violent, possibly as a result of the conflicts between the settlement and the surrounding Aboriginal peoples. The reduced number of the crew at this stage may also have made them more vulnerable, and the last two of the men left behind south of Port Hacking, were subsequently killed (Collins, 1802:117).
FIVE
CONCLUSIONS – FORMATION OF SURVIVOR CAMPS

To some extent this thesis has deliberately eschewed delving into archaeological theory, in the interests of presenting data and its context in a relatively ‘neutral’ environment. The dialogue over the meaning of archaeology is long-running and to some extent beyond the scope of this paper. In the modern period the exploration of alternative means of explanation began with the ‘New Archaeology’ of the 1960s and has since moved through the stages of post-processualism, cognitive-processualism and a range of offshoots (see South, 1977; Shanks and Tilley, 1987; Schiffer, 1988; Johnson, 1999). For the sub-discipline of historical (and maritime) archaeology the debate is further complicated by the role of existing documentary evidence in elucidating past behaviour (see Schuyler, 1978, 1988, Johnson, 1999).

In the sub-discipline of maritime archaeology this process only really began in Australia with the dissemination of the influential American publication Shipwreck Anthropology (Gould, 1983). Since the mid-1990s in particular, a number of Australian publications have dealt with theoretical issues and the broader analysis of a wide range of maritime and historical archaeological sites (eg. Lawrence, 1998; Veth and McCarthy, 1999; Staniforth, 2003). The development of ‘middle-range’ theories, using analogy to explain how the static data of the present is related to past behaviour, has also been part of this process. In this respect, the behavioural archaeological model for shipwreck survivor camps explored in this thesis is clearly relevant (see Schiffer, 1976). Furthermore, the use of both documentary and archaeological evidence (as a peculiarity of historical archaeology) has been critical in developing a fine-grained explanation for how artefacts will move from their systemic context to their archaeological context.

Any study of shipwrecks and associated events, including the formation of survivor camps, must necessarily consider the processes that will create the archaeological sites. Previous attempts to classify the processes acting on shipwrecks (and by association survivor camps) have largely examined the environmental aspects of site formation, where artefacts act with the natural environment in a non-cultural
system (Schiffer, 1972:3-8). Muckelroy (1977:157-214) identified the major forces acting upon a shipwreck as the process of wrecking, salvage operations, disintegration of perishables, seabed movement and the characteristics of excavation. These ‘filtering and scrambling mechanisms’ are the means whereby a ship and its contents are transformed into the collection of material excavated from the sea floor. The environmental attributes that would contribute to the survival of archaeological material on an underwater site were also considered in some detail. These include such factors as water depth, the nature of the seabed, and the exposure to weather and currents. Muckelroy used the 1664 wreck of the *Kemmerland* to test his model, and more recent studies have been carried out in the Australian context with the wreck of the SS *Xantheo* (McCarthy, 2000) and HMS *Pandora* (Ward, 1999; Ward et al., 1998, 1999).

While the non-cultural aspects of shipwreck site formation have been considered in some detail by researchers little attention has been given to the removal of material through salvage activities. This is an area of study that is critical for the understanding of shipwreck survivor camps, as much of the material culture found on these sites is derived from the transfer of objects from a marine to a terrestrial environment. The deliberate removal or salvage of material from a shipwreck, whether for survival or monetary gain, is an example of systemic context where artefacts are participating in a behavioural or cultural system (Schiffer, 1972:3-8). The subject of salvage has been considered as merely a historical adjunct to most archaeological investigations of shipwrecks, however, as part of his study of survivor camps, Gibbs (2003:139-141) outlines how this process might occur.

The first of these actions is ‘jettisoning’ immediately before or after the wreck event, where cargo and heavy items of equipment or structure will be deliberately discarded overboard to lighten the vessel. This will effect the archaeological record by the removal of certain items from the shipwreck site or change their distribution on the seabed. In the case of the *Sydney Cove* the jettisoning of ‘bags of sugar, heavy bales and boxes’ removed items that may have subsequently been brought ashore to Preservation Island. ‘Crisis salvage’ may occur around the height of the wrecking process when the vessel has actually struck. Typically it involves the launching of the boats with essential supplies and the removal of the crew from immediate danger.
Given ample preparation time and a relatively sheltered location the crisis salvage phase for the *Sydney Cove’s* crew proceeded in a relatively ordered manner with essential supplies and equipment landed immediately, followed by the sick members of the crew and the livestock. The men also searched the southern end of the island, dug a well for drinking water, and may have decided on a location for the campsite away from where they would subsequently land the cargo.

After the initial removal of material during the crisis phase there was an opportunity to return to the wreck and carry out ‘survivor salvage’, retrieving a wider range of survival and rescue orientated materials. Hamilton (1797:68) notes that on the day after the wreck the crew salvaged bags of rice, removed the immediately accessible cargo items on the lower deck, and erected tents using spars, rope and sail canvas obtained from the ship. The hauling out of the longboat for repairs presumes that planking timber and carpenters tools had also been removed. It is also assumed that the crew was able to recover their personal possessions at this early stage, given the complete absence of this material from the wrecksite. Possible evidence of this stage of salvage may be visible in the archaeological record of the survivor’s camp as the remains of the meat stores, tools and equipment, and the crude pottery used for food storage and preparation.

Following these initial salvage phases the crew of the *Sydney Cove* carried out what Gibbs (2002:140) terms ‘opportunistic salvage’ to recover readily removable material that may have collectable or monetary value including cargo, accessible fixtures, fittings and minor structural elements. The details of this work have previously been discussed (Chapter 4) and they are the most detectable activities in the archaeological and documentary record. There is archaeological evidence for the storage of the salvaged cargo on both Preservation Island and Rum Island, and its usage at the survivor’s camp in the form of Chinese porcelain, bottles and timber casks. The presence of galley bricks, ships timbers and metal fastenings at the campsite are also evidence of this more intensive period of salvage. The final phase of salvage activities ‘organised salvage’ is also evident in the archaeological record by the absence of the large quantities of material recovered from the wreck but then taken off Preservation Island during the three voyages of the *Francis* to Port Jackson.
The extent of the salvage carried out on the Sydney Cove and its presence in the archaeological record of the survivor camp has some broader parallels. The reliance on an existing material culture in a different physical environment is one of the important themes in historical archaeological studies. In the Australian context the struggle of the first settlers to survive in a foreign landscape almost led to disaster, despite the example of Aboriginal peoples who had adapted and flourished in the same landscape for thousands of years. Deficiencies in the organisation of the first settlement fleets and the difficulties of applying European agricultural techniques became readily apparent and the colonist were forced to live on reduced rations for a number of years. The development of the country trade to India, and the voyage of the Sydney Cove, was a direct result of this struggle to survive and flourish.

Staniforth (2003) has explored this dependence on existing material culture through his study of the cargoes of colonial period merchant vessels. He concludes that ‘the food, drink and other consumer goods – the portable material culture - that people wanted and needed in the early Australian colonies were structured by cultural preferences’ (2003:153). Given this, the importation of material goods not only made colonial life comfortable but it made it possible (Staniforth, 1995: 159). Birmingham and Jeans (1983) have also looked at material culture and how Australian colonisation developed, using the analogy of ‘shipwreck survivors’ in the story of the Swiss Family Robinson. The earliest of the phases of development described by Birmingham and Jeans are of most interest to the Sydney Cove study.

In the exploratory phase the colonist’s (shipwreck survivor’s) skills, social structure and material equipment are applied to the strange biophysical environment in which they find themselves. This phase is characterised by the immediate exploration of their surrounds, dependence on imported goods and a preliminary assessment of their circumstances. In the case of the Sydney Cove we see parallels in the immediate exploration of Preservation Island, the location of water, and survival strategies based on salvaged stores and equipment. The rapid assessment of the crew’s predicament and the organisation of the rescue voyage to Port Jackson within days of coming ashore, must also be seen as part of this exploratory phase.
The second phase is described as ‘learning about the environment’ including the selection or rejection of a production system and the further investigation of environment, technology and organisation. Initially, the demands on the weakened crew to establish a campsite and salvage the shipwreck precluded any real development of strategies to increase their long-term chances of survival. With the collapse of the ship’s hull in late April signalling the end of large-scale salvage efforts, the crew were able to switch to a ‘learning phase’ that would enable them to make the necessary survival decisions. The first of these was to shift the campsite to a more suitable location and build a dwelling to replace their tents. Using elements from the ship, and possibly from the local environment, they were able to properly shelter themselves to ‘survive the coming winter’. Even their inability to keep their cooking fires going was now changed by the use of better technology (fire hearth) derived from the ship.

The other major behavioural change would have been the exploration of the other islands of the southern Furneaux Group and the extension of the foraging activities beyond Preservation Island. While foodstuffs such as rice were initially available from the ship’s stores Captain Hamilton carefully rationed them out. Given the extent of the mutton-bird rookeries on Preservation Island the birds would have provided a readily available food source and the historical evidence for the usage of native wildlife is very closely matched by the archaeological information. The evidence of large quantities of meat in the survivor’s diet (and the consumption of alcohol) also demonstrates that the cultural restrictions on the lascar members of the crew may not have extended to what they ate or drank. Assumptions about dietary conservatism may be less applicable to a seafaring group who would necessarily be on restricted diets for a large part of their working lives and may always be looking to improve their diet.

During the initial months ashore the ability to explore or forage widely was effected by the reduction of the crew’s numbers through death, sickness, and departure – there were simply not enough fit men available to carry out all these tasks. With the collapse of the ship’s hull in late April signalling the end of the salvage phase the health of the crew appears to have improved dramatically with proper shelter and a more varied diet. It is likely that foraging then extended beyond
Preservation to nearby Cape Barren and Clarke islands according to the historical accounts (Collins, 1802:81,89) and the archaeological evidence for the consumption of wombats that were not originally found on Preservation Island. It is also known that the six members of the crew left behind in June had travelled widely by small boat, reaching as far as Swan Island (30 km) which they mistakenly named for the Cape Barren geese that they observed.

The evidence of foraging activities also provides some valuable information on which members of the crew were utilising the structure uncovered at the campsite. From Hamilton’s account it is known that a dwelling was built in early May 1797 to house the 28 men remaining at Preservation Island, and it was occupied by them for approximately six weeks until the departure of the first salvage voyage on 23 June. Five of the lascars then remained at Preservation Island under the command of John Bennet, the European seaman who had survived the rescue trek to Port Jackson.

Behavioural studies of mutton-birds in the Furneaux Group show that the majority of the bird population departs on their migration north by the end of April, and are completely gone from the islands by the end of the first week in May (Skira, 1990). At this stage the Sydney Cove’s crew was still in the process of constructing the dwelling and, unless they had been preparing bird meat in very large quantities, it is unlikely that the faunal bones found during the excavation were deposited during this period. It is therefore highly likely that the bones resulted from the actions of the six crewmembers remaining on Preservation Island, who had access to the returning mutton-birds (and their eggs) from September 1797 until their departure in February 1798. It is also known that these men had constructed a smoke-house and were probably consuming the mutton-birds in relatively large numbers.

Further evidence that the six men occupied the dwelling comes from the discovery of the Chinese export porcelain and numerous bottles deliberately abandoned in the vicinity of the fire hearth. As a valuable item Captain Hamilton was particularly concerned with the protection of the alcohol carried on the Sydney Cove by removing that portion of the cargo to Preservation Island. When the schooner Francis had arrived on its first salvage voyage it carried six additional men from Port Jackson to look after the cargo but Hamilton declined to use them, ‘finding they were
very improper to be left in charge of spirits’ (Hamilton, 1797:72). The archaeological evidence does suggest that after the departure of the rest of the crew, including Captain Hamilton, the six men left on the island did make use of the alcohol and other cargo items left in their charge. The destruction of some of the salvaged cargo by ‘gales of wind and bad weather’ (Collins, 1802:80-81) while Captain Hamilton was away from Preservation Island, may actually have been due to the actions of the remaining crew.

An aspect of survivor camps that has been largely undiscussed is the psychological aspects of shipwreck events, and the effect that these may have on the behaviour of survivors. In a paper related to the survivor camp study Gibbs (2002) looks at the subject of ‘maritime archaeology and behaviour during crisis’ through an examination of the events surrounding the 1629 shipwreck of the Batavia in Western Australia. The actions of the Batavia crew and passengers are examined using dynamic behaviour models, which concentrate on the classification of disasters through human behavioural responses rather than the physical properties of the actual event (see Dynes and Tierney, 1994; Leach, 1994). While the actions of the survivors of disasters, including shipwrecks, may appear to be random responses to widely varying events, they are in fact predictable and patterned behaviour.

‘Studies of people caught in disaster or extreme predicament have thrown up two remarkable facts. Firstly psychological response appears to follow a set pattern. They are not as diverse discordant or haphazard as may first appear to be the case. Secondly, this type of behaviour is for the most part transferable across different types of disasters, for example, the same psychological pattern has been observed in people in fires in skyscrapers and dance halls, shipwrecks, earthquakes and tornadoes’ (Leach, 1994:10). Leach (1994,1-9) proposes five identifiable stages of psychological response to disaster: the pre-impact phase, the impact phase, the recoil phase, the rescue phase, and the post-trauma phase.

Gibbs (2002) discusses the possible archaeological signatures that may match this behaviour and Stanbury (2003:19-32) has applied this psychological model to the 1852 wreck of the Eglinton. In the case of the Sydney Cove most of the activities of the crew that have left an archaeological signature, happened during the recoil phase.
The recoil phase occurs from when the immediate threat to life has receded until the survivors are successfully rescued. Leach (1994:26) suggests that the recoil stage begins with confusion and group fragmentation followed by a gradual return to normality, though some symptoms may linger. This may explain the choice of the initial Sydney Cove campsite in a poor location and the failure of Captain Hamilton to adequately provide rations or shelter for the crew during the initial occupation of the island. The recoil stage is also noted for inducing denial and apathy, perhaps explaining the poor condition of the crew during this period, when allied with the lingering effects of scurvy.

Some caution must be used when applying a psychological model for behaviour to a shipwreck or survivor camp sites without very detailed historical accounts and/or a complete archaeological record. Although Leach (1994) and other studies suggest that there are common reactions to disaster, the extrapolation of these studies towards individual sites could lead to a misinterpretation of evidence to fit the theory. The same precautionary principle must also apply to the survivor camp model. However, Gibbs (2003:129) does make the point that while each shipwreck circumstance is specific there are many commonalities involved because of the unique type of event. ‘While there is a unique and complex series of relationships involved with each shipwreck and survivor situation, the initial constraints of the nature of the ship and population allow us to identify common themes for historical and archaeological investigation’.

These common themes have been extrapolated from a range of shipwreck events across Australasia so their application to a well-documented site such as the Sydney Cove should test whether the comparative framework is useful. By looking at each of the comparative categories in detail this thesis has demonstrated that these themes are applicable to a single shipwreck event, and should provide a useful means of analysing the historical and archaeological data for a wider range of sites. The challenge now lies in applying this model to other sites, whether in analysing existing data or developing research designs for further studies.

This work is not just applicable to the terrestrial sites associated with shipwreck events but has equally important implications for the study of the
underwater remains of the vessels themselves. In many cases the activities of shipwreck survivors will physically impact on the wreck site as they attempt to retrieve the material necessary for survival. The survivor camp study provides some detail on how and why this will occur, particularly through the ‘salvage’ model proposed by Gibbs. The earliest attempt by Keith Muckelroy (1978) to construct a paradigm for ‘the archaeology of shipwrecks’ is still a benchmark for comparative studies of site formation processes, and the more recent work by Gibbs (2002, 2003), Stanbury (2003) and Ward et al. (1998, 1999) now provides the ‘building blocks’ for a more integrated approach.
BIBLIOGRAPHY


Harris, S., Buchanan, A. and Connolly, A., 2001, One Hundred Islands: The Flora of the Outer Furneaux, Department of Primary Industries, Water and Environment, Hobart.

Harvey, P., 1999, Clonmel: Disaster to Recovery, Heritage Victoria, Melbourne.


Hydrographer of the Navy, 1982, Australian Pilot, Volume 2, Hydrographic Department, Taunton.


Stanbury, M., 1994, Mother-of-pearl shell cultivation: an early 20th century experiment in the Montebello Islands, Western Australia, *The Great Circle*, 16 (2): 90-120.


Strachan, S., 1986a, *The History and Archaeology of the Sydney Cove Shipwreck (1797)*, Occasional Papers in Prehistory 5, Research School of Pacific Studies, Australian National University, Canberra.


