HMS *Sirius* 2002 Expedition Report

Prepared for the Norfolk Island Government and Environment Australia
by
Myra Stanbury

with photographic contributions by
Patrick Baker

Report—Department of Maritime Archaeology,
Western Australian Maritime Museum, No. 167
July 2002

Front cover: Interpretive plaque overlooking the wreck of HMS Sirius *at Kingston, Norfolk Island. Photo: Patrick Baker, Western Australian Maritime Museum.*

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Abreviations

AIMA	Australasian Institute for Maritime Archaeology Inc.
ANMM	Australian National Maritime Museum
CD	Compact Disc
DASETT	Department of the Arts, Sport, the Environment, Tourism and Territories (Commonwealth)
DCA	Department of Communications and the Arts (Commonwealth)
DEH	Department of the Environment and Heritage (Commonwealth)
EA	Environment Australia
LAN	Local Area Network
MOS	Museum of Sydney
NI	Norfolk Island
NIM	Norfolk Island Museums
SMM	*Sirius* Maritime Museum
WAM	Western Australian Museum Perth
WAMM	Western Australian Maritime Museum

Acknowledgements

Patrick Baker and I are grateful to the Hon. Sheila McHale, Minister for Culture and the Arts, Gary Morgan, Executive Director, WA Museum Perth and Graeme Henderson, Director, WA Maritime Museum, for supporting our participation in the *Sirius* 2002 Expedition at Norfolk Island. We thank Nigel Erskine, Director, Norfolk Island Museums and Project Director for inviting us to participate; and, thank all expedition members for assisting us in our specific tasks. We especially acknowledge the help of the Norfolk Island Museums' staff, in particular Arthur Evans for his assistance with the *Sirius* audit. The friendship and hospitality of many former acquaintances and *Sirius* Project members was, as usual, a wonderful experience.

The Norfolk Island Government received funding for the project from the Commonwealth Department of the Environment and Heritage as part of Environment Australia's historic shipwrecks program. This support, together with that of the Norfolk Island Government and the local community is gratefully acknowledged.

Executive Summary

In 1983, an investigative study was undertaken by Graeme Henderson (now the Director, Western Australian Maritime Museum) (Henderson, 1984) with the aim of examining the sea-bed in the area where HMS *Sirius* was wrecked and assessing the significance of any remains. The feasibility of recovering material for research and display was also to be considered, so too the significance of items previously raised from the wreck. Based on the recommendations, a submission was made to the Australian Bicentennial Authority for funding to proceed with a comprehensive maritime archaeological and historical investigation into the loss of the principal naval consort to the First Fleet.

In 1985, the HMS *Sirius* Project was officially launched as an Australian Bicentennial Authority Project and the first major fieldwork season was undertaken at Norfolk Island under the direction of Graeme Henderson. Drawing expertise from as many representative States and Territories as possible, the expedition team was supported by the Norfolk Island Government and the local community. A second fieldwork season, in 1987, was again funded by the Australian Bicentennial Authority. A third, in 1988, was coordinated by the Norfolk Island Government and attracted funding from British Airways as a major sponsor, with generous support from Air New Zealand and East-West Airlines; and, many other Commonwealth and State organisations, local businesses and so on. Captain Tom Morton, then Commander of the present HMS *Sirius* made the ship available in Sydney for the launching of *The* Sirius *Past and Present*, a book written by Graeme Henderson and Myra Stanbury as part of the Bicentennial *Sirius* Project. A plaque commemorating the vessel's loss was also unveiled by His Grace the Duke of Norfolk on the foreshore at Kingston, opposite the wreck site.

In 1990 a commemorative expedition was organised by the Norfolk Island Government to celebrate the bicentennial of the wrecking of the *Sirius* on 19 March 1790, and to undertake various work as outlined in the Plan of Management for the wreck, wreck site and relics ratified by the Commonwealth Department of the Arts, Sport, the Environment, Tourism and Territories (DASETT) and the Norfolk Island Government. On this occasion, the *Sirius* Maritime Museum was officially opened, on 19 March 1990, by His Excellency the Governor General, Bill Hayden.

This report has been compiled in fulfilment of the HMS *Sirius* 2002 Expedition Project Brief. The Project was directed by Nigel Erskine, Director, Norfolk Island Museums, and Delegate of the Commonwealth Minister for the Environment and Heritage (DEH).

Part 1 deals with the registration and preliminary identification of artefacts raised from the 2002 excavations in the Slaughter Bay lagoon.

Part 2 deals with the 2002 Audit of the *Sirius* artefact collection as per the Plan of Management. (Specific details are included in a supplement to this volume: see Stanbury & Evans, 2002, 'HMS *Sirius* Expedition 2002 Audit Supplement'.) The following recommendations are made with respect to issues discussed in this section.

RECOMMENDATIONS

It is recommended that:

Storage

- If the cabinet is located in the mezzanine area, objects should be arranged in the cabinet so as to facilitate easy visual inspection.
- In view of the recently observed corrosion problems, inspection and monitoring of the artefacts should be undertaken at more frequent intervals (i.e. at intervals other than the designated audit inspections).
- Care must be taken to ensure that fragile objects are stored in protective boxes, clearly labelled 'Fragile' and with handling instructions.
- Some objects would be better stored in stackable containers.

Maintenance

- General cleaning strategies be improved either with the use of more effective cleaning aids and/or on a more regular basis to avoid build up of dust and potential infestation.
- Regular fumigation schedules be maintained to limit the incidence of silverfish and other insect infestation.

Environment

- T° and RH monitoring be continued in cases containing sensitive materials.
- Foam seals along the perspex edges of the show cases be checked and renewed, if necessary, to improve the internal show case environment.

- Individual, sealed display units be fabricated for highly sensitive materials e.g. the grape shot and Maravédis coin, to provide additional buffering.

Security/protection
- Heavy objects on 'open display' be securely supported to avoid any movement, either of the object or the support on which it is mounted.
- Smaller objects on 'open display' should be secured either by individual perspex housings or by being securely fastened to the base mount in a suitable fashion.
- A review of the gallery lay-out should be carried out with a view to improving visitor access and reducing injury/ damage liabilities to persons and artefacts.

Conservation
- Objects undergoing chemical conservation treatment should be
  (a) safely stored and labelled; and
  (b) re-located to an appropriate venue where potential hazardous risk is minimised, appropriate warning signs are *in situ*, and there is access to protective work-safe apparel and equipment for dealing with accident or emergency situations.
- A suitable plan will need to be put in place for treating/re-treating copper alloy objects to ensure their long-term preservation and accessibility for research and exhibition purposes.
- The on-going conservation problem with cast iron objects will need to be addressed.

Part 3 addresses the issue of a web site strategy for the *Sirius* in relation to Environment Australia's working document.

RECOMMENDATIONS
It is recommended that:

- Discussion take place between the Norfolk Island Commonwealth Delegate, Environment Australia (Lynden Ayliffe, coordinator of the Working Party), the NSW Heritage Office (David Nutley) and the WAMM (Myra Stanbury/Jeremy Green, member of the Working Party) to discuss the most appropriate options; and
- Based on the outcome of the above discussions, the WAMM will assist in the preparation of necessary text, images, or other information.

Part 4 reviews some of the operational aspects of the *Plan of Management HMS* Sirius, *wreck, wreck site and relics.*

RECOMMENDATIONS
It is recommended that:

Artefact collection: storage
- The artefact collection should be organised so as to facilitate access to *bona fide* researchers and allow easy visual inspection of objects to monitor their condition.

Need for regular monitoring of the collection
- Regular monitoring of the collection needs to be maintained to detect conservation problems.
- The University of Canberra (Conservation of Cultural Materials Program, Division of Science and Design) be approached with a view to assessing whether some of currently identified conservation work (i.e. small copper alloy objects) could feasibly be undertaken as supervised Graduate Intern projects.
- A conservation programme be implemented for the treatment of large copper alloy objects which have not previously undergone basic de-salination treatment.

Security
- The security and stability of portable objects on 'open display' be investigated.

Collection Management
- The *Sirius* databases be cross-checked prior to establishment of the Commonwealth National Artefact Database; and
- The practicality of establishing a Local Area Network between the *Sirius* Maritime Museum and the Research Centre be investigated.

Interpretation

- Funding be sought to enable

(a) a professional exhibition design plan to be developed and costed for the *Sirius* Maritime Museum; and,
(b) for a staged implementation of the plan should the total cost exceed the inital funding allocation.

- An application be made to the Australian National Maritime Museum under the Project Support Scheme for a NI Museum staff member to gain experience in museum exhibition and design practices.

Future funding for on-site work

- Given the logistical and risk management issues of working on parts of the main *Sirius* wreck site (and also on the inshore reef areas), any future archaeological work on the *Sirius* site needs to be carefully reviewed in terms of:

(a) the research questions being addressed and the potential for these to be answered;
(b) appropriate risk management and diving strategies for both the outside reef and inner reef areas; and
(c) the implications for the Norfolk Island community in terms of the Memorandum of Understanding and the on-going management of the site and the collections.

Site management and environmental studies

- The investigation of the effect of sea urchins on *in situ* shipwreck artefacts needs to be reassessed in terms of:

(a) the current status of monitoring;
(b) procedures for monitoring the effect on fragile objects and/or specific areas of the wreck site; and
(c) the investigation of any biological controls that may assist in retarding the colonisation of these organisms on artefacts, iron objects especially.

Site inspection

- Regular site inspection as per the existing Plan of Management should be maintained and reported upon, including the underwater and above water plaques.

Records collection: Photographs

- The photographic collection remain in the environmentally controlled storage facility at the WAMM; and
- Photographic services/requests as indicated above continue to be met through the WAMM.

Records collection: Artefact drawings

- A folio of dyeline and/or photocopy prints be compiled for reference in the NI Museum Research Centre; and/or
- A CD containing the scanned catalogue images be produced for research access (with copyright approval of AIMA as the publishers). (This would avoid problems associated with the storage of large format drawings which need to be stored in flat map cabinets.)

Protection, recovery and accessibility of further material

- Persons in possession, custody or control of *Sirius* material (as registered in the NI Registration Series) be issued with a Registration Certificate and a letter re-confirming their obligations with respect to this material under the provisions of the Commonwealth *Historic Shipwrecks Act 1976* if this has not already been done.
- Advice be sought from other State delegates with regard to any other *Sirius* material that may have been declared to them during the Commonwealth Historic Shipwrecks Anmesty 1993–94, its nature and whereabouts, so that a record can be compiled for research purposes.

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July 2002

Project brief

As the designated 'Registrar' for the 2002 *Sirius* Project, the allocated brief was as follows:

- Registration of artefacts;
- Audit inspection of *Sirius* collection;
- Assist in initiating a *Sirius* web site; and
- Assist in revision of a Plan of Management for the *Sirius* site.

This report outlines the work undertaken with respect to the above brief together with provisional recommendations where appropriate. Given the time constraints at Norfolk Island for implementing the various Project tasks there was insufficient time to fully discuss the issues relating to a *Sirius* web site and the revisions to the Plan of Management. The recommendations made in regard to these, therefore, should be treated as 'draft' recommendations for discussion with appropriate personnel and stakeholders.

HMS *Sirius* 2002 Expedition team members. Photo: Patrick Baker, Western Australian Maritime Museum.
From left to right: Patrick Baker, Myra Stanbury, Adam Lewis, Libby Evans-Illidge and Peter Illidge (foreground), Kevin Hubbard, Coleman Doyle, John Clarke, Sally Erskine and Nigel Erskine.

Summary of visit to Norfolk Island 9–24 March 2002, HMS *Sirius* Expedition

Saturday 9 March: Depart Perth Airport Qantas flight QF 580 at 12.10 p.m. Arrive Sydney Domestic Terminal 7.05 p.m. Overnight at Sydney Airport Motel, 38 Levey St, Arncliffe.

Sunday 10 March: Depart Sydney International Terminal Norfolk Jet Express flight YE 343 at 2.10 p.m. Arrive Norfolk Island 5.10 p.m. Met at airport by Nigel Erskine and taken to Kingston Holiday Accommodation, Rooty Hill Road, Kingston, Norfolk Island.

Introduced to other members of the expedition team. Briefing from Nigel Erskine, Project Director, following dinner. Team members who had arrived from Queesland on Friday (and the previous week) had already organised the diving logistics and commenced work in Slaughter Bay lagoon. Jimmy Tavener dropped by to renew acquaintance.

Monday 11 March: Nigel took Patrick Baker and myself to the *Sirius* Maritime Museum (SMM) to organise the collection audit and photography. Introduced to Arthur Evans who will assist with the audit during the forthcoming week as his schedule permits. (I had met Arthur briefly when he came to Fremantle to spend some time in the Western Australian Museum (WAM) Department of Materials Conservation and Restoration as part of a training programme for Norfolk Island Museum staff in 2000.)

Archive (acid free) boxes containing the *Sirius* artefacts were relocated from the mezzanine storage to the spare work room adjacent to the display gallery. PowerBook computer set up in the same room. Prior to the opening of the Museum at 11.00 a.m., had a tour of the gallery and briefly checked objects in the display cases (see following report) while Patrick worked out how to use the PC computer in the SMM office and the Norfolk Island Museum Sony digital camera.

Arthur drew attention to two data-loggers in the *Sirius* instrument case (one from the instrument case and one from the *Sirius* iron shot case) which were being monitored as they had been giving slightly different readings to the data logger in a new ship model case made from Norfolk Island pine. The temperature and relative humidity readings in this case were lower than the two click-lock type cases.

Finished work at 4.45 p.m. in order to attend the play 'Trial' at the Pier Store. This was written by Peter Clarke, author of the book *Hell and Paradise* on the initiative of Nina Stanton the previous Director. It is performed twice weekly, is well attended and provides revenue for the Norfolk Island Museum. The play has travelled to Sydney and other venues.

Tuesday 12 March: a.m. Patrick and I discussed the format for our joint public talk based on the slides we had available. After Patrick had made his selection I returned to Seabury House to prepare my talk and slides. Remainder of the day spent at the SMM.

7.30 p.m. Public talk at the Pier Store: Nigel, Libby Illidge, Patrick and myself. About 40 people attended, including Mike Simpson, finder of the spectacle plate; Neil and Judy Tavener; Norfolk Island Museum staff and other residents.

Wednesday 13 March: Museum closed to visitors all day. Arthur conducting guided tours. Created a new FileMaker Pro layout from the *Sirius* database named 'Audit Layout' with new audit fields. Edited yesterday's entries before beginning on new boxes.

p.m. Sorted out boxes with small artefacts into sequential numbers to make it easier to check off groups of similar types of objects on the database.

6.00 p.m. Data-logger in instrument case (Case # 6): 26.6°C and 61% RH

Thursday 14 March: a.m. Shopping trip with Arthur. Purchased a microfibre glass cleaning cloth and microfibre general cloth for cleaning the show cases (these allow cleaning without the use of chemical agents); a 'dustbuster' for cleaning inside the show cases (some of which had evidence of silverfish infestation and cobwebs from other insects); some sample laser parchment paper in assorted colours to test colour scheme for labels; a cutter; nylon fishing line (for tying labels to artefacts in storage); and an Artline marker pen. The following were not available on the island:

- Rotring/Pelican drawing ink (black or white); or
- Mapping or other pens suitable for marking artefacts.
- Ruled matt cutting board.
- Hand bevel cutter.

Commenced boxes 10, 11 and 12.

p.m. Lunch at the Museum café.
Continued with the boxes. Logged the material on loan to the Australian National Maritime Museum (ANMM) although numbers of items are not clearly specified on SMM list. Also, at least one object said to be on loan to the Museum of Sydney (MOS) was in fact in a box. Maybe the two items lent were returned some time ago. Needs to be checked.

Problems noted with condition of copper alloy objects. Still about 10 boxes to go!

At 6.00 p.m.—data-loggers in Case 6 showing T° 26°C and RH 60%; the ship model case is T° 26.6°C and RH 55%.

To do:

- Check who donated the bronze bilge pump.
- Check whether people holding *Sirius* material in their possession or custody were issued with any certificates during the 1993/94 Historic Shipwrecks Amnesty.
- Check material raised from Slaughter Bay lagoon.
- Send Fax or Email to Vicki Richards re copper alloy objects.

7.30 p.m. Public talk at Pier Store: Nigel Erskine on the Pitcairn project.

Friday 15 March: Checked items in instrument case (#6) and reorganised the display. Added a few more small instrument-related objects to the display. Pantograph label eaten by silverfish. Needs re-doing. Moved the grape shot to the iron shot case and put a data-logger in there. Vaccumed and cleaned both show-cases.

Patrick photographed the objects (not the rudder chains.

Points to note:

- All objects recovered by non-*Sirius* Project people need acknowledgements on labels.
- Too much space taken up in show cases by solid central support. Perspex plinths and/or block supports would make the display appear much more 'open' and provide more flexibility for arranging objects.

Cleaned the *Bounty* cauldron case and put the cauldron section from the *Sirius* in there too. No back to case so dust, insects etc. get in! Although the open back is set against the wall it is not secure.

Checked more boxes. Lunch at Seabury House.
p.m. Continued checking boxes.

Saturday 16 March: a.m. Checked one more box. Arthur not at work today.
p.m. Stayed at Seabury House and did some drawings of objects raised from the lagoon. Patrick taking object photos. Some of the glass and ceramics definitely look later than the *Sirius*.

p.m. Dinner courtesy of Jim and Louise Tavener.

Sunday 17 March: a.m. Barbeque breakfast at Cook's Memorial.
p.m. Team inspection of the Second Settlement silos on the hill behind Kingston Appartments.

p.m. Barbeque dinner at Arthur and Kerry Evans' (and daughter Evie, 4 years) at Steele's Point.

Monday 18 March: a.m. Finished the sheathing nail boxes.
Lunch at the café. Geoff Bennett (former Norfolk Island Minister) called by to renew acquaintance.
p.m. Completed the copper sheathing/iron nails/pigs etc. Some things clearly not located (? where).

Went to the Norfolk Island Museum (NIM) research centre to check emails. No reply yet from Vicki Richards. Checked on Samuel King—the name on the fragment of copper sheathing handed in to Robert Varnam—in Gillen, M., 1989, *The founders of Australia* (see Appendix 4).

Tuesday 19 March: a.m. Called to see Gaye Evans (former Minister)–now Secretary to the Chief Minister.
Gaye drove me to the Pier Store/Reseach Centre to catch up with Patrick; we then went to Kingston to see Tom Lloyd who, together with his wife Timmy, produce the local newspaper. Tom is now 85! Patrick and I had our photograph taken by the hibiscus bush and carried some of Tom's wonderful avocados back with us. Arranged for Tom to come and see the artefacts and do an interview at the Kingston Accommodation.
Back to the boxes!
p.m. Met Tom at 1400 for photographs and tape interview (see *The Norfolk Islander*, 37.17: 18–20). Tom recalls that as a child he went to 'Ikey Bataille's' Kingston Appartments for the Summer holidays. Islanders still holiday at Emily Bay under the Norfolk pines during the summer.

Back to the boxes!
7.30 p.m. Public talk at the Pier Store by Peter Illidge and Coleman Doyle on *Pandora* and Papua New Guinea WWII wrecks.

Dinner at Jim and Louise Tavener's (and Lexy, 3 yrs) together with their tour group.

Wednesday 20 March: a.m. Went with Arthur to the Pier Store basement to check the cannon balls under re-treatment and check if there were any other *Sirius* items there. Continued to the Airport to check objects on display in the new cabinets. (The departure/arrival area has been refurbished since my last visit and there are a number of cabinets with displays advertising the natural, historical and cultural features of the island.) Mostly OK except for copper alloy bolts SI 33 and SI 165 which show small signs of corrosion. Miminal interpretative information about the *Sirius* in the show case. Continued with the audit while Arthur conducted a tour.

11.00 a.m. Gave a talk about the *Sirius* to a tour group at the *Sirius* Museum. Patrick giving a talk to the marine science class (John Fisher) at the High School.

p.m. Checked the lead scrap and other material stored under the display cases. Checked 1997 list for material not located at that audit. Registered copper fragments and miscellaneous copper alloy fastenings with no numbers. Drafted up Excel sheets to record the artefacts raised from the lagoon.

Ballast pig located close to the reef raised today. (No pre-disturbance corrosion potential measurements taken to compare with ballast pigs previously raised and treated.)

p.m. Fish-fry barbeque at Seabury House for people who had assisted in various ways with the expedition.

Thursday 21 March: a.m. Recorded two rows of ice-cream container artefacts (survey locations 217–262).

Visited the Norfolk Island Archaeological Museum en route to *Sirius* Maritime Museum while Arthur conducted his 'Tag Along' tour. No sign of the unlocated copper sheathing, glass bottle top or other *Sirius* objects in the storage cupboards identified by Nigel, nor in display cabinets.

Entered the 2002 artefact data onto the Excel sheets.

John Fisher, the new marine sciences teacher at the school, brought three students to the Museum and we talked about the *Sirius* objects, sea-bed topography and differential preservation, electrolysis etc. They will go to Seabury House to see the material raised this expedition.

p.m. Visited the Bounty Folk Museum to check items previously located at that venue (see following report). Karl Davies sold the Museum and the contents some time ago. Many of the objects were only 'on loan' from islanders.

Arthur spoke to several students who are going to enter an historical essay competition and were interested in writing about the *Sirius*.

Returned to house early (*c.* 4.00 p.m.) to finish recording the 2002 artefacts and to be available in case the high school students came by after school. Tidied up etc.

7.30 p.m. Public talk at the Pier Store by Adam Lewis and John Clarke to outline the surveying, magnetometer and metal-detecting procedures used during the present expedition. Attended by *c.* 30–40 people. A few public questions about the effects of the 'dredging' were answered to satisfaction.

Friday 22 March: a.m. Dive team to the site west of the Pier (Site 5). Entered rest of 2002 artefact data onto Excel database on the SMM computer. Nearly to end when it crashed and I lost all the morning's entries! Arthur continued with it while Patrick and I took some time off. Went on the Clysedale horse trip with 'Culla' and Peter Evans. Had a lovely trip up Stockyard Road to Steele's Point.

The Queensland team leaving this evening. Everyone tidying up and returning gear. All the artefacts had been removed to Nigel's house so will not be able to do any more drawing.

Saturday 23 March: a.m. Corrected Arthur's entries; updated 'Not Located' list; Conservation list etc. Copied all documents onto floppy disk to transfer to Nigel's machine and mine. Patrick found that he could use the card from the digital camera to transfer files to my computer. Short visit to town to do some shopping.

p.m. Lunch at Seabury House. Contacted Franklin Randall who assisted with the fabrication of the first gun carriage. Short drive to try and locate the place we stayed at in 1990. Back to the *Sirius* Museum to complete glass artefact photography. 5.00 p.m. packed up and headed back to Seabury House.

Dinner at Nigel and Sally's. Patrick back to the Research Centre at the Pier Store to try to retrieve lost files.
Packed bags ready for departure.

Sunday 24 March: a.m. Brief conversation with Nigel re the Management Plan revision. Will need to communicate by Email re this.
Departed Norfolk Island Norfolk Jet Express flight YE 344 at 10.50 a.m.
Arrived Sydney International Terminal 1.10 p.m.
Departed Sydney Domestic terminal Qantas flight QF 583 at 7.20 p.m.
Arrived Perth 9.10 p.m.; Fremantle at 10.00 p.m.

PART 1. Registration of artefacts recovered from 2002 excavations

The following artefacts were recovered during the 2002 *Sirius* project. Descriptions are based on provisional examination prior to any conservation treatment, chemical and/or other scientific analyses, or detailed comparison with other material cultural remains which may assist in more accurate identification and determination of date of manufacture or origin. Where similar objects have been recovered or recorded from previous *Sirius* projects these have been referred to. The main illustrative reference for comparison of *Sirius* artefacts is Stanbury (1994), *HMS* Sirius *1790. An illustrated catalogue of artefacts recovered from the wreck site at Norfolk Island.* Due to time constraints illustrations were only made of a selected group of 2002 objects. These are presented here with descriptive comment. All the artefacts were recorded photographically by Patrick Baker.

Field #	No.	Description	Code	Location
1	1	Cannon ball 6lb shot.	81	164
2	1	Cannon ball 18lb shot.	81	164
3	1	Copper cauldron piece: rivets on inner side of folded edge. Lg 308 mm; Wd 90 mm (max).	32	217
4	1	Trigger guard. Lg 137.5 mm. cf. NI 29 & 30 (Stanbury, 1994: 82, fig. 143).	32	217
5	1	Tooth—horse ?	41	217
6	1	Terracotta fragment.	22	217
7	1	Keel staple, bronze ? Ht 125 mm; Wd 128 mm.	31	218
8		?		219
9	2	Copper cauldron fragments: 1 a vertical seam w/ 4 rivets; one a piece w/ 2 rivets.	32	220
10	1	Trigger guard. cf. NI 29 & 30 (Stanbury, 1994: 82, fig. 143).	32	221
11	1	Trigger guard. cf. NI 29 & 30 (Stanbury, 1994: 82, fig. 143).	32	222
12	1	Trigger guard. cf. NI 29 & 30 (Stanbury, 1994: 82, fig. 143).	32	223
13	1	Trigger guard. Lg 138.5 mm. cf. NI 29 & 30 (Stanbury, 1994: 82, fig. 143).	32	224
14	1	Butt plate, musket.	32	225
15	1	Butt plate, musket.	32	226
16	1	Butt plate, musket. 132 x 48 x 1 mm.	32	227
17	1	Butt plate, pistol ? Di c. 50 mm.	32	228
18	1	Unid. fitting, copper alloy. Ht 229; Hole di 7 mm; Th 3 mm.	32	229
19	1	Copper band w/rivet. Lg 175 mm; Wd 21 mm; Th 7–2.5 mm. Band w/ S-shaped profile. cf. SI 257 (Stanbury, 1994, fig. 55).	32	230
20	1	Unid. encrusted ring ?	?	231
21	1	Copper strip, curved or bent, with tapered end. Lg 175 mm; Wd 5 mm (max).	32	232
22	1	Bristle. Lg 45.5 mm. cf SI 328 & 365.	46	232
23	1	Copper strip, eroded. Lg 215 mm. cf SI 230.	32	233
24	1	Pulley coak, bronze. Ht 47; Outer di 55.5 (max); Bore 30 mm.	31	234
25	1	Ceramic flat base sherd, cream glaze, reddish clay (earthenware?) body. Imprinted mark: WEDGWOOD.	28	235
26	3	Ceramic sherds (earthenware), cream glaze, no pattern or marks.	28	235
27	1	Rim sherd, transfer-printed earthenware. Geometric border pattern in dull greenish brown colour. cf Blue and white transfer printed cup and saucer with similar pattern in NIM archaeological collection.	28	236
28	1	Bottle neck, 'champagne' type, light olive green; flat string ring; twisting lines on neck. Ht 137 mm; Rim di 28.5 mm; bore di 21 mm.	44	237
29	1	Bottle neck, bulged,dark green glass; rounded rim and down-tooled string ring. Encrusted. Rim di 33 mm; bore di 20 mm. cf SI 152 (missing as at March 2002 audit): see fig 85 in Stanbury, 1994, catalogue.	44	238
30	1	Bottle neck A/A; down-tooled string ring.	44	239
31	1	Bottle neck A/A, rim only.	44	239
32	1	Bottle neck, slight bulging; down-tooled string ring, more finely executed.	44	239
33	1	Case bottle base, 'black' glass; smooth basal push-up with faint '+' (?) indicating pontil tool. Cf case bottles with cracked off pontils in NIM archaeology collection, (smooth base with remains of pontil glass).	44	240
34	1	Case bottle sherd, encrusted.	44	240
35	1	Pewter lid, circular, with eroded knop. Di 130 mm; Ht O/A 71 mm.		

		X-rayed. cf. silver butler dish in Bounty Museum.	33	241
36	1	Copper sheathing nail, small. Lg 19 mm; Hd di 9 mm; shank di 5 mm (max) at neck.	32	242
37	2	Wood pieces, matching; bevel edge on one side; Small, circular, nail hole in the upper corner of one piece. Possibly part of a barrel stave. Lg 53 mm; Wd 46.5 mm; Th 6 mm.	63	242
38	1	Dowel-shaped, eroded piece of wood.	6	242
39	1	Butt plate, musket. Lg 61 mm; Di. 28 mm (max).	32	243
40	1	Fitting, copper alloy; possibly part of door knob to fit square shank.	32	243
41	1	Ceramic sherd, earthenware, flat, similar to fragment marked 'Wedgwood'.	28	243
42	1	Ramrod pipe, musket. Lg 98.5 mm.	32	244
43	1	Pulley coak, bronze, part only. Fits w/ 246. (cf. Stanbury, 1994: 57, fig. 96.)	31	245
44	1	Pulley coak, bronze, part only. Ht 46 mm; Outer di (max) 56.5 mm; Bore 25 mm. Fits w/ 245. (cf. Stanbury, 1994: 57, fig. 96.)	31	246
45	1	Trigger guard, copper alloy, part only. Lg 113 mm; Wd 12.5 mm.	32	247
46	1	Copper strap, part,w/fastening holes. Possibly part of cauldron. Lg 94 mm; Th 8 mm (max); Hole di. 14 mm.	32	248
47	1	Copper piece w/ squared edge; 1 rivet and 1 part hole. Lg 63 mm; Wd 39 mm; Th 2 mm. Rivet di. 17 mm.	32	248
48	1	Ramrod pipe, musket.	32	249
49	1	Copper strip, curved. Lg 94 mm; Wd 18 mm; Th 3 mm.	32	250
50	1	Flat copper strip; square hole one end, circular the other. Lg 97 mm; Wd 19 mm; Th 2mm; Sq hole 5 mm sq; round 5.5. mm di.	32	251
51	1	Circular copper alloy object w/small rebate cut out from edge; central circular opening w/protruding sleeve on one side. Di. 48 mm; Th 4 mm; Rebate 9 mm; sleeve depth 6 mm; Hole di. 9 mm.	32	252
52	1	Ceramic footrim sherd. ? Eroded porcelain or stoneware.	21/29	253
53	1	Eroded, squarish piece of bronze. Possibly part of gudgeon or pintle. 52 x 40 x 33 mm	31	254
54	1	'Scabbard' type object, possibly lead. Lg c. 20 mm; Wd c. 30 mm.	34	254
55	1	Lead sheathing fragment.	34	256
56	1	Lead sheathing piece, large.	34	257
57	1	Piece of timber with longitudinal grain; bevelled end. Lg 180 mm; Wd 30 mm; Th 12.5 mm.	6	258
58	1	Ceramic footrim sherd, cream glaze, ? Stoneware.	21	258
59	1	Ceramic sherd, earthenware, flat, white crazed glaze.	2	258
60	1	Bottle sherd, olive green, curved.	44	258
61	1	Bottle base, green glass; flat basal profile; conical push-up.	44	258
62	1	Glass sherd, flat, green w/vertical striations from mould. cf. NIM examples from land excavations. See Stanbury, 1994: 53.	44	259
63	1	Ceramic sherd, cream glaze, fine crazing.	2	259
64	1	Horse teeth ?	4	259
65	5	Copper fragments.	32	260
66	1	S-shaped handle. Lead covered with copper, butt jointed to form seam.	32/34	261
67	1	Musket ball. Di. 17.5 mm. SI shot between di 17–19 mm.	34	262
68	1	Unid copper fragment	32	288
69	2	Pale green, plate glass frags. Th 1 mm.	44	288
70	1	Rim sherd from cup (?), earthenware. Cream glaze, cream body. Th 2.5 mm.	28	288
71	1	Unid hook-shaped, encrusted object.		288
72	1	Ramrod, very eroded. Lg 60 mm.	32	289
73	1	Tooth—as others (see #64).	41	289
74	5	Sheathing nails (3+2 heads). *Sirius* type. Lg 37 mm; Head di 14 mm.	31	290
75	1	Small sheathing nail. Head di 8.5 mm Lg 40 mm; shank c. 4 mm²	32	290
76	1	Shank frag. Similar to above. Shank 4 mm².	32	290
77	4	Copper sheathing frags—one with 4 mm² hole.	32	290
78	4	Flint pebble ballast.	13	290
79	1	Musket ball. Di 16 mm.	34	290
80	1	Musket ball, eroded. Di 12 mm.	34	290
81	5	Lead sheathing frags.	34	290
82	1	Iron conglomerate? Bolt head (?); + soft wood (?) frags.	8	290
83	1	Clench ring, part Broad Arrow on one side. Di 40 mm / 22 mm; Th. 5.5 mm.	32	291
84	1	Bottle, half from base. Dark olive green with abrupt heel. (May indicate use of a sabot.) Blueish opalescence on kick up indicates re-heating.	44	292

		Ht 132 mm; Base Di 90 mm. cf bottles from *Cumberland* (1830), WA		
85	1	Terracotta sherd, thick.	22	293
86	1	Case bottle sherds with vertical mould striations visible on some sherds.	44	294
87	4	Pale green bottle sherds.	44	294
88	1	Thick aqua-coloured, glass sherd.	44	294
89	1	Case bottle sherd.	44	295
90	1	Bottle neck, part.	44	295
91	1	'Black' glass botttle sherd.	44	295
92	1	Cannon ball 6lb shot. Di 78* mm.	81	E
93	2	Blue/White porcelain.	29	F
94	1	Blue, shell edge rim sherd, indented. cf NIM examples.	28	F
95	1	Blue / White porcelain sherd, man in boat.		
		Same export cavetto motif as other sherds.	29	296
96	1	Blue/White transfer printed, double footrim sherd, earthenware.	28	297
97	1	Unid. object. Part of door latch (?) or instrument.		
		Ht O/A 92 mm; Hole di 10 mm. cf. 252 (Field # 45)	32	I
98	4	Saltglaze stoneware jar frags, brown mottle. Th 8–9 mm		
		cf. SI examples SI 80, 274, 383.	21	298
99	1	Blue shell edge rim sherd, earthenware.	28	298
100	1	Base sherd, white porcelain, deep footrim. Possibly from bowl.		
		Footrim Ht 15 mm.	28	298
101	1	White tinglaze Majolica or earthenware sherd, possibly from Albarello (ointment jar).	23/22	298
102	1	Unid. moulded, circular glass object, half only, dark green glass.	44	298
		Lower part appears to have been moulded as a screw thread.		
		Battery cell stopper (?); cf. pale green examples in Bounty Museum.		
103	1	Case bottle base. Square indent with circle & mammelon in centre .		
		Dark olive green; some striations from the mould evident on one side.		
		67 x 67 mm.	44	299
104	1	White porcelain base sherd.	29	300
105	1	Case bottle wall sherd w/ evidence of mould marks.	44	300
106	1	Flint pebble 'Core'—i.e. looks as if it has been flaked, but probably.		
		natural breakage. No evidence of flaking platform or bulb of percussion.	13	301
107	1	Blue/white band and line decorated earthenware rim sherd. ? Cup.	28	302
108	4	Saltglaze stoneware sherds.	21	303
109	5	Blue shell edge cream earthenware sherds. Fine crazed glaze.	28	303
110	1	Bronze pulley coak part only. Ht 45 mm.	31	304
111	1	Cream earthenware plate sherd, double, indented footrim. c. 260 mm di.	28	305
112	2	Flint pebbles.	13	306
113	1	Slate piece. Lg 116 mm (max); Wd 53 mm; Th. 3.5 mm.	12	306
114	1	Cream earthenware brim sherd. Possibly from oval-shaped baker.	28	306
115	1	Cream earthenware cup sherd. Base Di 52 mm; footrim Ht 3 mm.	28	307
116	1	Unid. copper rectangular plate with several circular holes.		
		Broad Arrow on front surface. 80 x 53 x 0.2 mm.		
		Hole di 3.5 mm—punched front to back.	32	?
117	1	White stoneware sherd with relief decoration—fern leaves and flowers.		
		Probably saltglazed.	21	?
118	1	Blue/white, fine porcelain sherd. Th 2.5 mm.	29	?
119	1	Unid. metal object.		
120	1	Iron fastening—head concreted, square (?) shank. Lg c. 175 mm.	82	?
121	4	'Black' glass bottle sherds.	44	?
122	2	Iron nails—square shank. (a) Lg 81 mm; (b) Lg 40 mm	82	
123	2	Lead fishing sinkers (modern).	34	
124	1	Oblong pebble.	13	
125	1	Red 'band and line' white earthenware plate rim sherd. cf Adelaide		
		Steamship Company crockery from Fremantle Long Jetty.	28	
126	1	Unid. clear glass, rounded sherd with flattened circular area. Th 4.5 mm.		
		Conductor glass ?	44	
127	2	Thin strips of folded copper. Wd c. 5 mm.	32	
128	1	Iron adze, part (fits w/900B). X-rayed.	83	900A
				0.5 m inshore
				from 243.
129	1	Iron adze, part (fits w/900A). X-rayed.	83	900B
130	1	Iron ballast pig.	84	

Ceramics

Chinese export porcelain

A variety of ceramic sherds were recoveed during the 2002 Project excavations. Among them were several white, and blue and white, Chinese export porcelain sherds exhibiting the typical export cavetto border design (see Fig. 1). This decorative scroll and arrowlike design was developed by the Chinese *c.* 1735–50 from patterns used on the corners of 17th century Dutch tiles and Meissen prototypes (Mudge, 1989: 154, 155, figs 232 a–b). As Mudge (1989: 154) states:

> The copying or melding of European with Eastern motifs by the Chinese in a natural evolution of the original, whether Western or Eastern (including Japanese), is the basic principle of the Chinese export ceramic aesthetic.
>
> That principle took effect shortly after the advent of Westerners in China.

Similar cavetto border patterns are evident on Chinese export wares from the *Sydney Cove* (1797) shipwreck (see Staniforth & Nash, 1998: 18, plate 11; 26–27, figs 10 & 11; see also Noël Hume, 1982: 260, fig. 83). Noël Hume (1982: 261) comments on the frequency with which underglaze blue porcelain is found on 18th century colonial sites in America but adds that

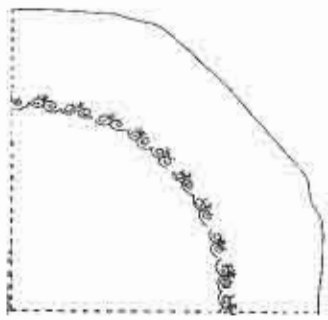


Figure 1. Cavetto border design (after Robert Williams in Mudge, 1989: 155, fig. 232c).

Figure 2. Section of blue and white Chinese export porcelain plate with cavetto border pattern (Field #/296). Drawing: scale 1:2. Photo: Patrick Baker, WA Maritime Museum.

> ... as they are generally without reign marks they are virtually impossible to date with sufficient accuracy to be useful... One can only note that the later the piece the more sloppy the painting. The pseudo-Chinese "willow pattern"...did not appear before 1792 and became increasingly common in America in the early years of the nineteenth century. The earliest pieces were quite well done, though the border ornaments were overly fussy and tended to become blurred. Very soon, however, the house, tree, boat and bridge motif began to be applied to a heavier body that appears greenish-gray through the glaze, roughly hatched or scale-decorated,

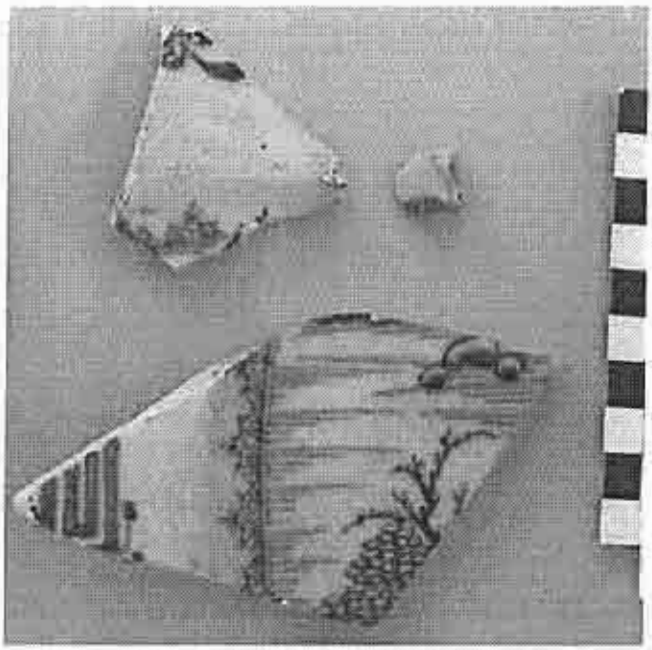


Figure 3. Blue and white Chinese export porcelain from location F. Photo: Patrick Baker, WA Maritime Museum.

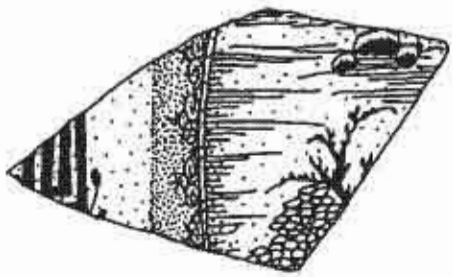


Figure 4. Cavetto section of blue and white Chinese export porcelain plate (Field # 93/F). Drawing: scale 1:2.

and the border was reduced to a wide band of blue, roughly hatched with lines of a slightly darker blue...This ware, so common in the first thirty years or so of the nineteenth century, is generally called "Canton", from which port it was shipped and where, in the second half of the eighteenth century, much of the high-quality overglaze painting for special European orders had been executed. Slightly better quality versions of the same late blue and white wares possessed border designs with daggers or spearheads below the inner edge, a style known as "Nanking", as opposed to those with mere swags, which are termed "Canton". In neither case were the wares made in these cities, all of them apparently having been made in the kilns of Ching-tê Chên.

The cavetto section of a plate (Field # 93/F) has part of a 'key-fret' or 'thunder pattern' border (Macintosh, 1977: 134–135), similar to the fragment recovered during an earlier *Sirius* expedition (see SI 347 in Stanbury, 1994: 45, fig. 68).

English earthenwares

CREAMWARE

Several cream-coloured earthenware sherds were recovered in 2002 which closely compare with a marked sherd found earlier in the lagoon by Nigel Erskine. This bears the imprinted mark 'WEDGWOOD' with no evidence of a year cipher. Wedgwood was a 'perfectionist' and strove to perfect existing standard wares (Godden, 1974: 110).

The cream-coloured earthenware body was in existence long before Wedgwood refined it and gave it the name 'Queen's Ware'. As Godden states:

This light, clean-looking ware established his [Wedgwood's] overseas markets and largely replaced the traditional Continental tin-glazed earthenwares. Much of the early

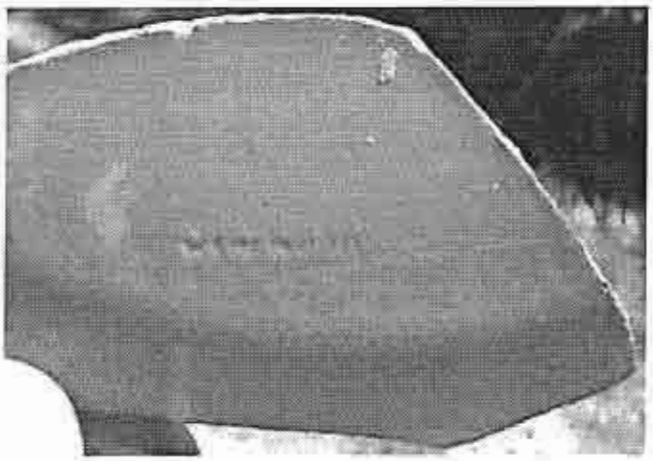


Figure 5. Cream-coloured earthenware sherd with impressed mark 'WEDGWOOD' on reverse. (Field # 25 /235). Photo: Patrick Baker, WA Maritime Museum.

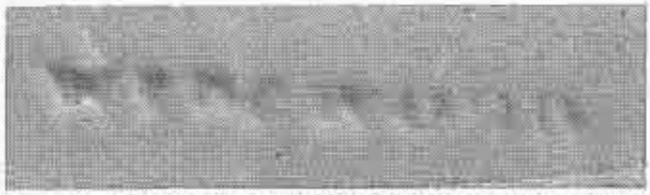


Figure 6. Imprinted mark 'WEDGWOOD' on cream-coloured earthenware sherd Field # 25/235. Photo: Patrick Baker, WA Maritime Museum.

Wedgwood creamware was sent to Sadler of Liverpool to be embellished with overglaze prints.

Cream-coloured earthenwares were light in weight, had a thin guage and smooth lead glaze which withstood chipping. In England it replaced the saltglazed wares. 'It was the potter's answer to the expensive white porcelain body' (Godden, 1974: 140).

The imprinted mark is in uniform capital letters, a form used subsequent to the 'upper-and-lower' case mark used during the 1780–98 period (Godden, 1974: 113). A slight gap between the 'WEDG' and 'WOOD' (Fig. 6), however, may indicate that this piece was not made by the Wedgwood firm. Godden (1974: 130) notes that:

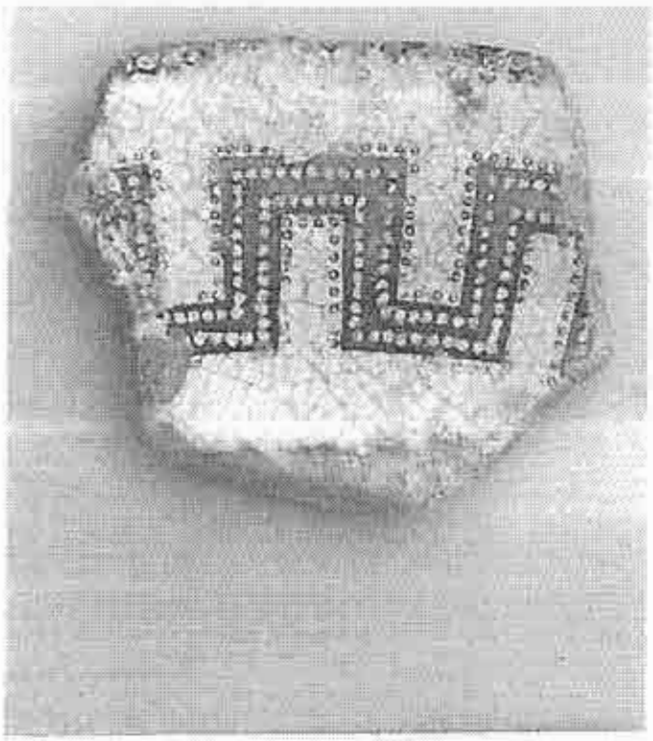
John Wood of Burslem somewhat craftily took the middle name Wedge or Wedg, enabling him to use the name-mark WEDGWOOD with the slightest gap between the two words. Wood worked between 1841 and 1860...

BLUE AND WHITE TRANSFER-PRINTED WARE

One blue transfer-printed sherd (Fig. 7) has a floral 'pineapple' border and a central design showing the hind legs of a cow. It has a double footrim. A plate (maker

Figure 7. Blue and white transfer-printed earthenware. Field # 96/297. Photo: Patrick Baker, WA Maritime Museum. Scale in cm.

Figure 8. 'Knaresborough Castle, Yorkshire.' *Pineapple Border Series.* (After Coysh & Henrywood, 1984: 205.) (Note hind legs of cow facing left.)



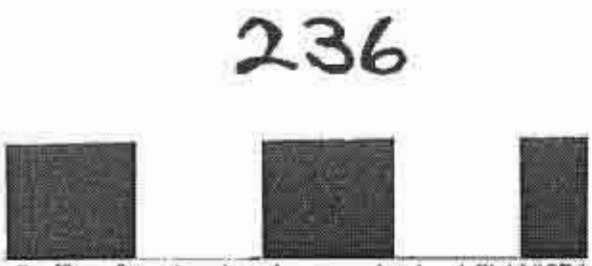


Figure 9. Transfer-printed earthenware rim sherd. Field # 27/236. Photo: Patrick Baker, WA Maritime Museum.

unknown) with a central pattern depicting 'Knaresborough Castle, Yorkshire' and a 'Pineapple Border' is illustrated in Coysh and Henrywood (1984: 205; see Fig. 8) and could be a comparable design.

Following the Napoleonic Wars (1815–1835) there was a boom in the manufacture of blue-printed earthenwares and vast markets opened up in North America, in Europe, India and other eastern countries; the home market also expanded (Coysh & Henrywood, 1982: 10–11). Patterns depicting British scenery were popular and often derived from engravings by contemporary artists.

By 1835 considerable advances had been made in pottery techniques and colours other than blue were used. The rim sherd illustrated in Figure 9 has a geometric border pattern in a dull greenish brown. A similar pattern in blue was noted on a cup and saucer from the Norfolk Island archaeological collection, displayed in the Archaeological Museum.

Blue shell edge ware

Several sherds of cream-coloured earthenware with moulded blue shell-edged decoration were also recovered (see Fig. 10). The glaze on most examples was finely crazed and the moulding well-defined.

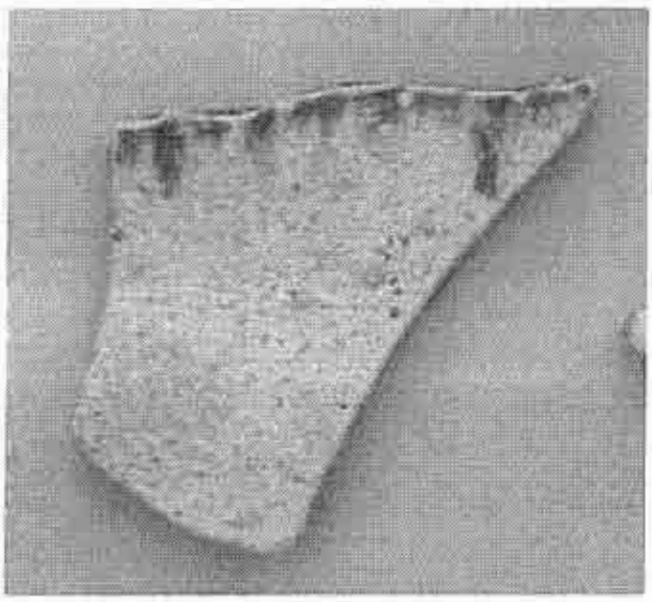


Figure 10. Moulded blue shell-edged cream ware sherd. Field# 107/303. Photo: Patrick Baker, WA Maritime Museum.

Figure 11. White stoneware sherd with moulded relief decoration. Field # 117. Scale in cm. Photo: Patrick Baker, WA Maritime Museum.

Figure 12. Glass bottle. Field # 84/292. Photo: Patrick Baker, WA Maritime Museum. Scale in cm.

Stonewares

In addition to several brown saltglaze stoneware sherds similar to those recovered from the *Sirius* wreck site (see Stanbury, 1994: 53, fig. 86), a single sherd of white stoneware with fern-leaf and flower decoration was found (see Fig. 11).

Glassware

Among the glass objects were examples of case bottle fragments, incomplete 'wine' bottle remains, bottle necks and sherds.

The lower part of a dark olive green wine bottle (Field # 84/292) is the most complete bottle example (see Figs 12 and 13). Of particular note is the abrupt heel, in contrast to the bulged heel of early forms of 'wine' type bottles. The rounded, smooth basal profile appears to show no indication of a pontil though the blueish opalescence is a sign that the glass has been re-heated. The flattening around the heel, and the lack of an obvious pontil mark, may indicate that the bottle has been held in a holder while the neck and finish of the bottle is completed. Since the earliest reputed date for the use of holders is *c.* 1840 (or the late 1830s), this would give a 19th-century date for this bottle (see Jones, 1986: 105).

Similar bottle bases, showing evidence of the use of a four-pronged holder, have been recovered from the *Cumberland* lost off the Western Australian coast on a return voyage from New South Wales to Bombay in 1830 (see Henderson, 1980). (This ship was carrying dripstones identified as having been made from Norfolk Island stone: see Stanbury & MacLeod, 1988.)

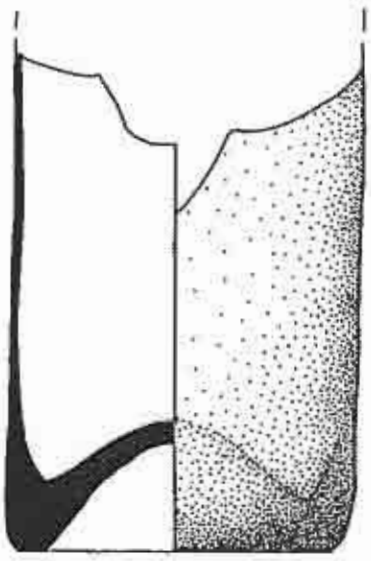


Figure 13. Glass bottle. Field # 84/292. Scale 1:2.

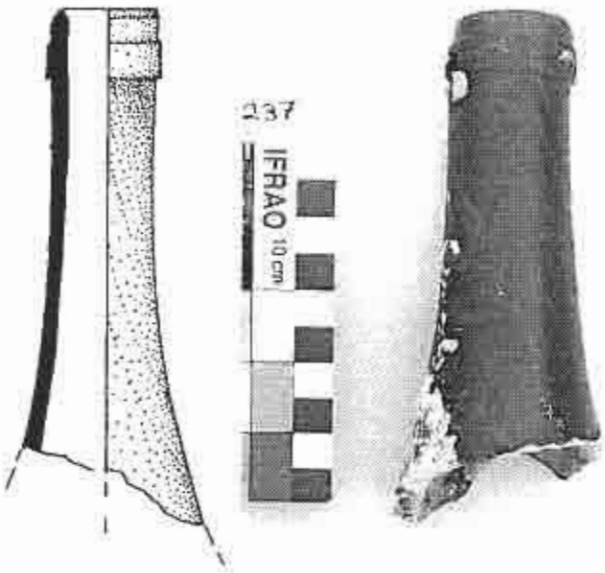


Figure 14. Bottle neck. Field # 28/237. Scale 1:2.

The bottle neck shown in Figure 14 has a flattened, applied, string ring and evidence of twisting lines in the neck. It is similar to 'champagne' style bottles from the *Elizabeth* (1839) (see Henderson, 1980: 158–60) and the *Sepia* (1898) (see Cairns & Henderson, 1995: 300–303).

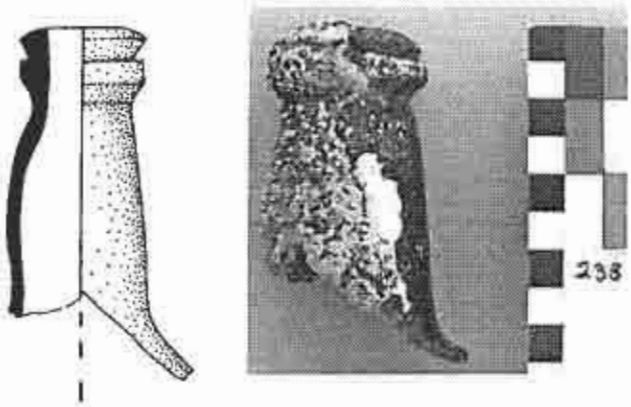


Figure 15. 'Wine' or 'beer' bottle neck. Field # 29/238. Scale 1:2.

Several rim fragments similar to the bottle neck illustrated in Figure 14 were recovered. The short, bulged, dark green glass neck has a rounded rim and slightly flattened, down-tooled string ring. It is similar to a 'wine' or 'beer' bottle neck (SI 152) recovered from the *Sirius* site (see Stanbury, 1994: 53, fig. 152). The finish appears to be consistent with those of bottles dating from *c.* 1790–1820 (see Jones, 1985: 15–21). However, two bottle glass samples (SI 217-1 & 217-2) analysed in 1995 were found to have a high calcium content said to 'make them typical of cheap domestic ware of the late nineteenth century' (MacLeod & Beng, 1998: 63–64, table II).

Brass

Small arms accoutrments

Four musket butt plates (Field # 14/225, 15/226, 16/227, 39/243), a pistol butt plate (Field # 17/228), six musket trigger guards (Field # 4/217, 10/221, 11/222, 12/223, 13/225, 45/247) and three ramrod pipes (Field # 42/

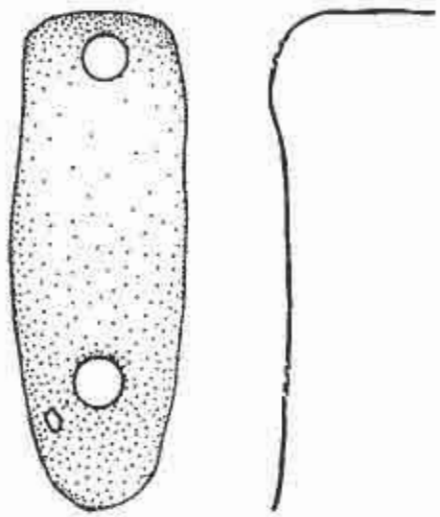


Figure 16. Musket butt plate. Field # 16/227. Scale 1:2.

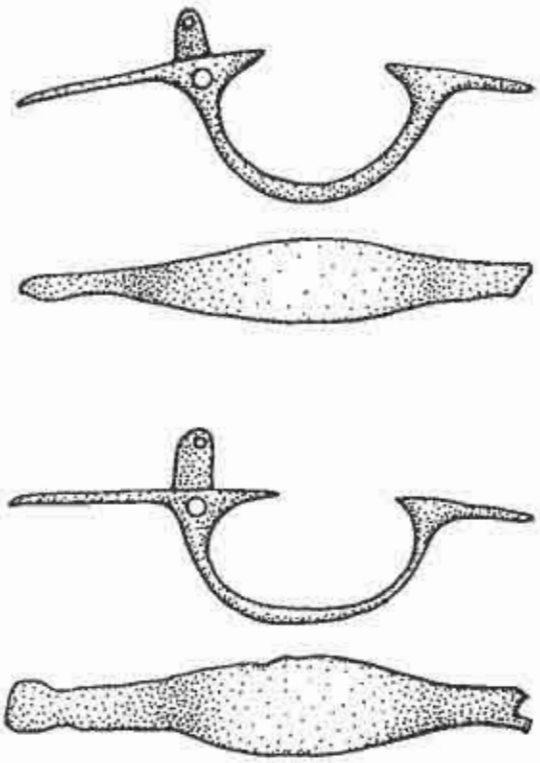


Figure 17. Trigger guards Field # 4/217 (top) and 13/224 (bottom). Scale 1:2.

244, 48/249, 72/289) were raised from the lagoon. The musket butt plates, trigger guards and ramrod pipes all appear consistent with having come from short Land Pattern muskets (see Stanbury, 1994: 81–82).

Unidentified objects

A number of unidentified brass objects could possibly be associated with dooor latches (see Schiffer, 1978: 287–288; Figs 18 & 19).

Figure 18. Unidentified brass fittings. Left: Field # 18/229; Right: Field # 97/1. Scale 1:2.

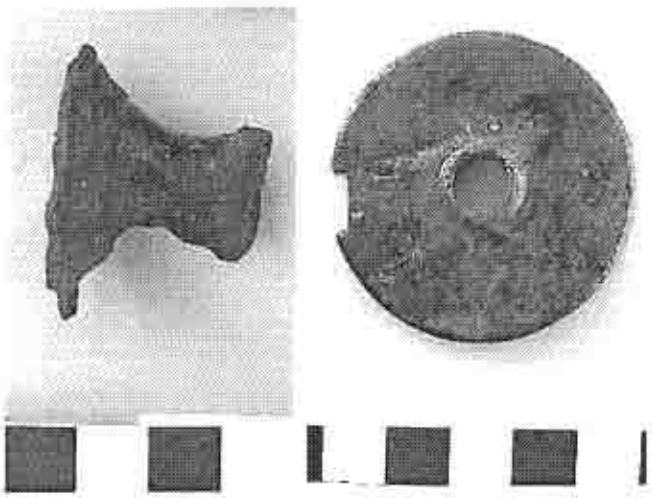


Figure 19. Unidentified copper alloy fittings: Left: Field # 40/243; Right: Field # 51/252. Possibly parts of door latch. Scale in cm.

Bronze fittings

Pulley coaks

Parts of at least three pulley coaks were recovered: one is complete; two parts fit to form another; and one is a part only. Coaks of this type were recovered from the *Sirius* wreck site (see Stanbury, 1994: 57, fig. 96; see Fig. 20).

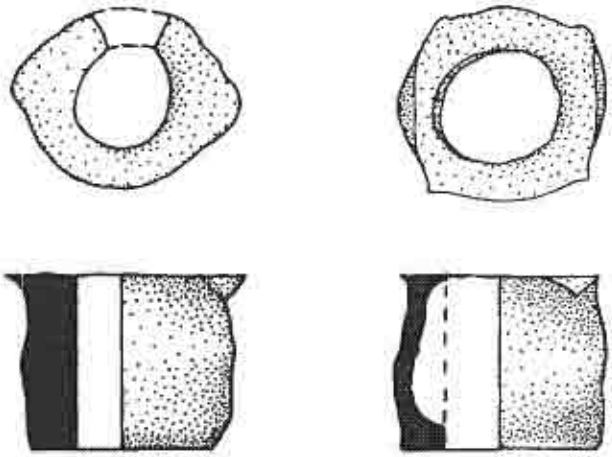


Figure 20. Bronze pulley coaks. Left: Field # 34/245 & 44/246. Right: Field # 24/234. Scale 1:2.

Keel staple

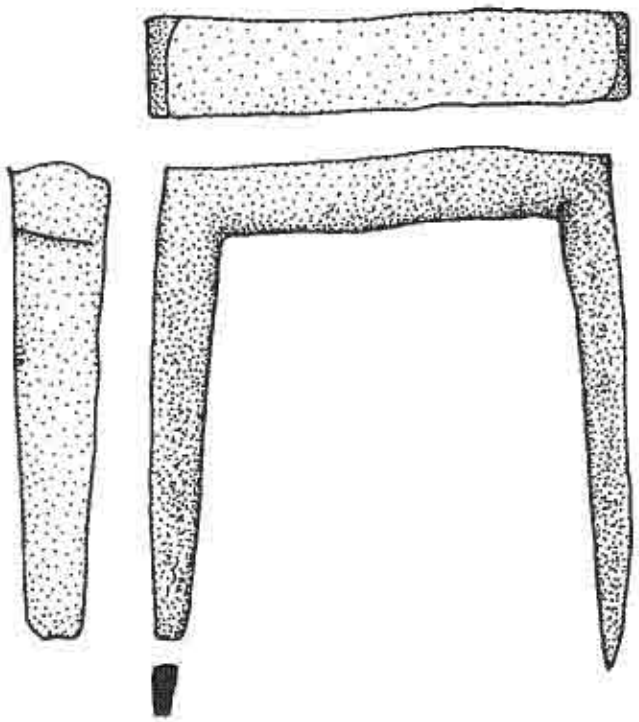


Figure 21. Bronze keel staple. Field # 7/218. Scale 1:2.

A bronze keel staple (Fig. 21) is roughly cast and bears no markings (e.g. Broad Arrows). It does not appear to be similar to bronze keel staple remains from the main *Sirius* site (see Stanbury, 1994: 10–12, figs 8–10). Chemical analysis of the metal, however, may help to determine whether there is any correlation between this artefact and analysed bronze fittings from the *Sirius*.

Pewter

Lid

An encrusted pewter lid with hollow(?) knop (Fig. 22) was X-rayed to determine whether encrustation on a section of the rim was part of a hinge or not. This proved to be negative.

A variety of lidded, sugar and small domestic pewter bowls dating from the mid to late 18th century are illustrated in Hornsby (1983: 177–179). Although none of the illustrated examples compare directly in shape with the lid recovered from Slaughter Bay, there is sufficient indication to show that a considerable variation of styles existed during this period.

Pewter and later Britannia metal wares generally bear a maker's mark which helps to identify and date the piece. This may become evident once the object has undergone conservation treatment.

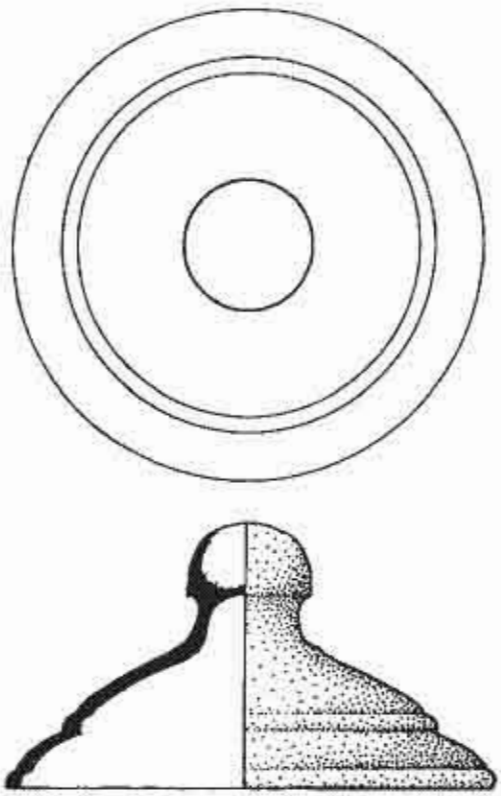


Figure 22. Pewter lid. Field # 35/241. Scale 1:2.

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PART 2. Audit inspection of *Sirius* collection

Introduction

Under the *Plan of management, HMS* Sirius, *wreck, wreck site and relics* the following guide-lines relating to the *Sirius* artefact collection state that:

> . Section 4.8 Arrangements will be made for the site and collection to be inspected regularly by appropriate specialists who will undertake the necessary procedures for site conservation.
>
> . Section 4.10 Material recovered from or associated with the *Sirius* shall be conserved, housed and curated in a professional manner which ensures —
>
> (a) its long term conservation and protection;
> (b) its consistent and comprehensive documentation to ruling museum standards;
> (c) its adequate storage, as far as possible in one location;
> (d) the adequate display to the public of parts of the collection; and
> (e) its access to *bona fide* researchers.
>
> . Section 5.2 Arrangements will be made between the Commonwealth and the Norfolk Island Governments for an inspection visit to the *Sirius* site and collection once every 2 years by a maritime archaeologist acquainted with the site and collection. The inspection to be followed by a condition report...

In accordance with the abovementioned clauses, this report firstly presents a condition report based on an inspection of the *Sirius* artefact collection carried out in March 2002 by Myra Stanbury (independent observer) and Arthur Evans, Norfolk Island Musuem (NIM) officer (responsible for the care of the *Sirius* collection); and, secondly, recommendations concerning some of the management requirements for this collection.

Previous audits were conducted in March 1990 by Stanbury and MacLeod (Stanbury, 1990); March 1993 (MacLeod and Wesley); March 1997 (MacLeod and Evans); September 1998 (MacLeod and Evans).

Present audit details were documented on a FileMaker Pro database, down-loaded from the main artefact database at the Western Australian Maritime Museum, Fremantle. New fields were added to the basic layout so that the date of audit, audit comments and names of the auditor could be recorded (see Stanbury & Evans, 2002, Supplement to this report).

One of the constraints of the present audit was that previous audit details and comments had not been entered onto this database as appropriate fields had not been created on the main file. Hence, it was difficult to see at a glance whether particular objects had been missing at previous audits or were recently missing; what the previous condition was, in order to assess the present status; what the previous/current location was; and so on. (While the WAMM database records the primary museum location of objects at Norfolk Island, it has not maintained, until this visit, an accurate record of the secondary locations i.e. show case/storage box numbers etc. This information should primarily be recorded on the NIM database so that all movement of objects is documented and computer lists of objects at specific locations can be generated.) There was, therefore, a heavy reliance on written documentation (held in the SMM and WAMM files) to confirm historical audit details, and data relating to the location of objects on loan to other museums, and/or on display/storage at venues other than the *Sirius* Maritime Museum.

Previous auditors have not always obtained database listings prior to conducting the audits, and have had to create Excel spreadsheet listings of registration numbers (without accompanying object descriptions) on their personal lap-top computers on which to record comments. This is necessarily time consuming, and may result in discrepancies of audit reporting where descriptive details of the objects, as recorded in the register, are not included on the Excel file.

During the present audit, as indicated earlier, data was entered onto a down-loaded FileMaker Pro database file on a Macintosh PowerBook G3 computer. The Norfolk Island database, however, is based on a PC platfom using Microsoft Access. The computer housing the collections database was located in the Pier Store Research Centre and there was no Local Area Network (LAN) communication between the PC at the *Sirius* Maritime Museum and the Research Centre to facilitate access to the Norfolk Island *Sirius* database. Without an external lap-top computer, therefore, to directly record audit data as objects were inspected, the task would have taken twice as long. The problem of transferring the data from one database system (FileMaker Pro for Macintosh) to Microsoft Access (for PC) without someone physically having to re-type the information is one that needs to be resolved, and will be investigated.

1. Inspection of *Sirius* artefacts in the *Sirius* Maritime Museum (SMM)

The *Sirius* objects housed in the *Sirius* Maritime Museum include objects currently on exhibition and items in storage. The locations of various items have been enumerated as per previous recommendations and are indicated in Table 1. A spreadsheet listing the registration

No.	Objects	No.	Objects
1	Copper alloy bolts (plastic bag)	20	Canister shot
2	Iron fittings (plastic bag)	21	Cannon balls
3	Textiles	22	Organic material
4	Wood/bone frags	23	Large cannon balls
5	Bronze/brass instrument fittings	24	Sheathing
6	Clench rings	25	Musket balls
7	Ceramics & glass	26	Display case 1A & 1C
8	Sheathing nails	27	Display case 2A, 2B & 2C
9	Copper alloy fittings	28	Pump fittings
10	Copper alloy roves/tap spiggots/pump fittings	29	Display case 5 (iron shot)
11	Sheathing	30	Display case 6 (instruments)
12	Miscellaneous fastenings	31	Display case 7 (whalebone/bricks)
13	Sheathing nails	32	Display plinths (rudder fittings and pumps)
14	Coal/rocks	33	Display plinths (Iron ballast pigs etc.)
15	Lead sheathing	34	Pier Store exhibits
16	Pewter	35	WAMM
17	Sheathing nails	36	ANMM
18	Lead - miscellaneous	37	MOS
19	Copper bolts, screw nails & sheathing		

Table 1. Numerical location listings of *Sirius* collection.

numbers of objects in each location was prepared in 1997 by Arthur Evans and made available for comparative checking.

1.1 Objects on display

Prior to arrival at Norfolk Island, the *Sirius* Maritime Museum (SMM) had recently been re-painted as part of on-going maintenance. Many of the *Sirius* objects had been removed from the display cases and plinths while this was in progress and not all had been replaced. Most of the cream-painted plinths require paint touch-up to hide brown-painted areas where objects have not been replaced in exactly their previous position. It is advisable not to replace artefacts directly onto painted surfaces in order to avoid paint being deposited on the objects. Preferably, the artefacts should either be supported or cushioned with blocks or other suitable supports, or laid on a sheet of clear Mylar film cut to the shape of the object.

Preliminary inspection indicated that while some objects were in a satisfactory condition others were not in the same condition that the observer recalled from the 1990 inspection. (This was shortly after the return of objects from the Australian Bicentennial travelling exhibition *Shipwreck!*) Some objects showed spots and/or larger areas of active corrosion—applying equally to objects in show cases as well as those on 'open' display; other objects had very small spots of paint resulting from the recent painting: the problem was not serious but indicated the need for free-standing objects to be protected with dust sheets when such work is being undertaken.

Although difficult to see in the subdued lighting, Mr Evans drew attention to the fact that the anchor (NI 20) was corroding quite badly underneath both arms. He had reported this more than 12 months ago and is expecting this to be inspected by WAM Conservator Jon Carpenter when he arrives after 24 March 2002. This anchor, raised in 1973, was treated at the Western Australian Museum from September 1976 to September 1978. [The anchor SI 57 on loan to the Australian National Maritime Museum (ANMM) has also been exhibiting release of chlorides. The on-going problem has been regularly attended to by conservators at the ANMM and condition reports submitted to the Norfolk Island Government and Dr Ian MacLeod of the Western Australian Museum (WAM).]

Damage resulting from visitor interference had occurred to the cascabel end of the trunnion carronade SI 626 (raised in 1993). A section of the square end had been knocked off. While restoration should be possible, the feasibility of re-attaching the broken part needs careful consideration in view of the fragility of the cast iron and the vulnerability of the carronade to the movement of, and 'hands-on' exposure to, visitors. (There is very little space for visitors to move around the carronades; certainly no space in which to negotiate wheelchairs to allow disabled access.)

Prior to our arrival, the external humidity had been very high, (up to 100%), for more than one week or so. Portable de-humidification units are constantly switched on in the gallery, but it still presents with a relatively hot and humid atmosphere. Data-loggers are located in show cases with sensitive objects e.g. the *Sirius* grape/canister shot case and instrument case; and, a new timber and glass case constructed to house newly acquired ship models of HMS *Sirius* and HMS *Bounty*. Differential readings had been noticed between the various show cases, the new ship model case giving lower temperature/RH readings than the 'click lock' cases. Both were being

monitored; but, in retrospect, I did not observe a data-logger in the main gallery for comparing the general temperature and humidity in the 'open' gallery area (i.e. outside the show cases in question). It is possible, therefore, that the data-loggers in the two higher reading cases are simply reflecting the external environmental conditions and that the show cases are not providing adequate buffering.

The principal observation of artefacts that had been conserved especially for the *Shipwreck!* exhibition was that the surfaces, (especially the copper alloy objects), had become quite dull, often obscuring detailed markings such as the pantograph and sextant scales. Of particular note in this regard was the small copper Maravedís coin (SI 579) which has retained its shiny copper colour on the unexposed surface while the exposed surface has become dull.

Lead and iron shot on display were also observed to be exhibiting active corrosion. Several cannon balls had already been removed from their show case to undergo further de-salination treatment at Norfolk Island on the advice of WAM conservators. Others had previously been brought to Western Australia in 1997 by the previous Director, Nina Stanton, so the problem is not a recent one. (Once the hydrogen reduction furnace at the WAM Conservation Laboratory is operational, all the iron shot may need to be transported to Western Australia and treated in the furnace.)

In particular, the deterioration of the rare example of grape/canister shot (SI 511) was noted. This was recommended for close inspection by the WAM conservator and possible removal to WA for expert assessment. The change in condition can be monitored by pre- and post conservation photographs.

Lead musket balls and small bird shot were found to be exuding chlorides and in need of early conservation attention. Whether this is the result of specific environmental conditions in the gallery, insufficent washing to remove the salts, or reaction to certain materials in the showcases (e.g. wood, fabric, paint etc.) is difficult to assess. However, it was noted that lead shot in storage was quite stable and exhibited none of these extreme reactions.

Large bronze fittings on 'open' display e.g. the rudder gudgeons and horse-plate, that were recovered prior to the *Sirius* Project and stored for some time in the Pier Store are now showing some evidence of corrosion. Since these objects have never undergone any conservation treatment it would be advisable to consider treating all these objects to safeguard their future preservation.

Detailed comments on the individual artefacts on display are to be found on the general audit list (see Supplement). A list of objects requiring treatment is given in Appendix 1.

1.2 Objects in storage

The *Sirius* objects are stored either in cupboards underneath show cases—principally heavy or bulky objects (e.g. lead sheathing), and those recovered from Site 5 (west of the Kingston Pier), probably associated with the wreck of the *Mary Hamilton*—or in numbered acid free boxes and/or plastic bags in the SMM mezzanine area.

Most of the objects in the boxes were in their original plastic bags with dymo tape numbers; fragile objects (wood, textile, sextant parts etc.) treated at the WAM were still stored in custom-made boxes. A few fragile objects, e.g. pewter buttons, require better storage in separate and/or partitioned boxes.

With a very few exceptions, all artefacts had been marked with their registration number. In some instances, however, the numbers have been written in ball-point pen on top of white 'liquid paper' instead of with proper marking ink. (See earlier reference to materials not readily available on Norfolk Island.)

While the majority of objects were in a stable condition, problems were noted especially with the copper alloy materials—ship's fastenings, copper sheathing etc. The matter was referred by Email on 15 March 2002 to Vicki Richards, Conservator, WA Museum, as follows:

> I need some advice...Most of the copper alloy objects were treated first with citric acid and then $NaHCO_3$ (sesquicarbonate). Many are exhibiting traces of the darkish blue deposit (a) which I think is something to do with the sesqui treatment, i.e. not 'bronze disease' corrosion; others have white, powdery spots (b); and others have green powdery spots (c) (like normal 'bronze disease' colour). Other objects which were bright and 'brassy' have now dulled (d); e.g. the copper Maravedís coin is still nice and coppery on the side not displayed, while the display side is much darker. Most of the roves, rudder fastenings (which should be a nice coppery colour) are very dark and blackish, and not aesthetically pleasing for display—i.e. can't see the Broad Arrows.
>
> Can you suggest what could be done for a–d?
>
> ...I am finding that the copper sheeting which was obviously sprayed with Incralac appears to have maintained its appearance while the others have not.

On 20 March 2002, Vicki Richards sent the following reply:

> (a & b) & (d) Need to strip with 5% citric acid, good brush with soft brushes (scrubbing brushes but a softer variety) and a good rinse in water. if the surface is very pitted then we will neutralise the citric with a dip (literally) in sesqui and a very good rinse in water. Sometimes need soaking for a few days to really remove excess sesqui.

(c) The objects that exhibit potential bronze disease need to be fully treated again as the chloride levels in the metal are causing the cyclic corrosion mechanisms. There are a number of methods they [Norfolk Island] can use to treat the copper alloy artefacts:

(i) 5% citric acid/1% thiourea strip then 2% sesquicarbonate desalination with a 5% citric acid neutralisation and a good rinse in water.

(ii) 4% sodium hydroxide/5% sodium dithionite desalination then 5% citric acid strip and neutralisation (at this point copper needss to be scrubbed lightly with scrubbing brushes to remove black copper sulphides on the surface from the dithionite treatment. Good rinse in water.

(iii) 2% sesquicarbonate desalination only with a 5% citric acid dip to neutralise and a good rinse.

Procedures (i) & (iii) are slow desalination methods and procedure (ii) is fast; however, the colour change is most dramatic with this method.

After ANY treatment, the copper alloy artefacts need to be dewatered in acetone and then a coating MUST be applied to the object surface to minimise aerial oxidation which is why the copper alloys go darker with aging. The coating can be Incralac (proprietary product) or 2% paraloid B-72 in acetone. (They can make this up themselves from B-72 and acetone.) If the coating is applied evenly then there should be no need for a corrosion inhibitor like benzotriazole (possible carcinogen).

I don't think fibre glass brushes are needed as they can scratch the soft copper alloy surfaces if the user is not careful. I use a variety of scrubbing brushes, toothbrushes, sponges etc., and if necessary, pumice powder.

A suitable plan will need to be put in place for re-treating these objects to ensure their long-term preservation and accessibility for exhibition purposes.

Small lead objects in storage (e.g. lead shot) were generally in a better state of preservation than those on display. The large sheets of lead may need future treatment if required for display purposes.

2. Pier Store basement

A number of cast iron cannon balls had been removed from display and re-located to the Pier Store basement where they were undergoing conservation treatment. There is clearly an on-going problem with this group of objects which will need to be addressed.

3. Norfolk Island Airport

The display of *Sirius* objects in the Arrivals/Departure lounge at the Norfolk Island Airport serves to attract the attention of visitors to this aspect of the island's cultural heritage, and further enhancement of this exhibit (perhaps with an informative colour-image panel) is to be encouraged to promote visitation to the *Sirius* Maritime Museum.

The display comprises five artefacts representing various types of ship's fastenings and fittings—bolts, sheathing nails, pulley coaks and lead sheathing. Two of the copper alloy bolts (SI 33 and SI 165) exhibited small signs of corrosion which will need to be dealt with.

4. Norfolk Island Archaeological Museum

No *Sirius* objects were located at the above location during this visit, though it is possible that some of the 'missing' items e.g. glass bottle top SI 152, may eventually be located in this collection, especially where there are comparative types of objects from the land excavations.

5. Bounty Folk Museum, Norfolk Island

An informal visit was made to the Bounty Folk Museum on 21 March 2002 to see if items from the *Sirius* were still displayed there. In 1985 a listing was made of shipwreck material in the private possession of persons on Norfolk Island (see Henderson & Stanbury, 1985: 109 ff., appx 6). This included several items identified as coming from the wreck site of HMS *Sirius* which were on display at the Bounty Folk Museum (then owned by Karl Davies). The following observations were made.

5.1 Items observed

1. Ballast pig–previously registered as **NI 40** still on exhibit.
2. Cannon balls – 2 x 6-pounders + 1 in concretion. Labelled as possibly from *Sirius*.
3. 'Convict nails' with flat (rather than 'rose') heads. Labelled as possibly from *Sirius*.
4. Bottle necks, labelled as 'BTB [believed to be] from inside reef adjacent to *Sirius* wreck site'. 1 x 'black' glass with rim similar to those found recently; 1 x exfoliating badly so difficult to see colour.
5. Flint pebble ballast.

5.2 Registered but not identified

The following items registered in 1985 were not identified in the Bounty Folk Museum collection in March 2002.

1. Copper alloy nail (or spike) with tapered, square end, **NI 22**–not identified. (Previously noted as being in possession of Karl Davies at Bounly Museum.)
2. Copper alloy nail **NI 23**–not identified. (Previously noted as being in possession of Karl Davies at Bounty Museum.)
3. Part of sextant **NI 37**–not identified. (Possibly with Dave South not Karl Davies: A. Evans, 2002, pers. comm.) (Previously noted as being in possession of Karl Davies at Bounty Museum.)

Figure 23. Unidentified moulded glass object. Field # 102/298. Photo: Patrick baker, Western Australian maritime Museum. Scale in cm.

4. Bronze gudgeon strap **NI 38**–not identified. (Previously noted as being in possession of Karl Davies at Bounty Museum.)

It is possible that some of the above items were 'on loan' to Mr Davies and were returned to their 'owners' subsequent to the sale of the business.

5.3 Items seen which may possibly help to identify and date recent finds

1. Glass bottles as above (see *5.1* #4).
2. Silver **butter dish**—2 parts. Flat-rimmed circular container; domed, circular lid (approximately the same diameter as the pewter lid, Field # 35/241) with finely engraved ferns and fir cone knop. Dated to '*c.* early 1900s'. Apparently has maker's mark.
3. Pale green glass moulded stoppers from batteries originating from the old Cable Station at Anson Bay 1920s/30s. (Dark green half-moulded piece, Field #102/298 might be something similar. See Figure 23.)
4. Clear glass conductors 1941–45.
5. Rim locks with square section shafts for holding brass door knobs dated to second settlement, 1829–1856.

6. Australian National Maritime Museum

The following objects are confirmed as being on loan to the Australian National Maritime Museum, Sydney.

Reg #	No of items	Description
SI 57	1	Iron anchor
SI 97	20	Sheathing nails
SI 105	5	Lead shot
SI 115	1	Copper sheathing
SI 161-1 (not 3)	1	Copper rudder nail
SI 250	20	Musket balls, lead
SI 259	One bag	Flint pebble ballast
SI 301	1	Keel bolt (copper) with clench ring
SI 320	1	deck nail/spike (brass) die head, square shank
SI 321-2	1	Lag screw/bolt (copper)
SI 350	1	Clench ring (copper)
SI 355	4	Machine/screw bolts (copper)
SI 534	1	Sheathing fragment - large (copper)

The objects are regularly inspected by one of the objects conservators at the ANMM (as part of an extension of the loan agreement). At the last inspection no real change in condition was noted, apart from the on-going problems with the anchor SI 57 (referred to earlier).

7. Department of Materials Conservation, Western Australian Museum, Fremantle

Several *Sirius* objects are either still undergoing conservation treatment and/or have been returned from Norfolk Island for further treatment.

7.1 Still in treatment

SI 628—Wooden tampion from carronade SI 626
PEG treatment needs another 6 months before freeze drying.

SI 629—Wad from carronade SI 626
Impregnation finished, awaiting freeze drying.

7.2 Returned for further treatment (to be confirmed)

SI 585, 598, 602, 606, 620—Cannon balls.

7.3 Experimental samples

SI 228-1 and 228-2 confirmed as being at WAM.

8. Private collections

Apart from items on display at the *Sirius* Maritime Museum that are registered in the NI series and effectively remain in the 'possession, custody or control' of private individuals (e.g. the spectacle plate NI 2, rudder chain links and shackle NI 11 etc.), i.e. have not formally been donated to the Museum, no other previously declared *Sirius* items held by private individuals were inspected.

A list of objects not inspected and/or not located (where these were deemed to be in the custody of the Norfolk Island Museum) is given in Appendix 2.

It should be noted that the NI series of objects were registered in 1985, prior to the Commonwealth Historic Shipwrecks Amnesty in 1993–94. It is unknown to this author, however, what procedures were implemented on Norfolk Island with respect to the Amnesty, i.e. whether these individuals were sent formal declaration forms and/or issued with Certificates of Registration. Or, even if there were additional declarations of *Sirius* material made by persons on Norfolk Island or in any other States.

In terms of the provisions of the Commonwealth *Historic Shipwrecks Act 1976*, particularly as it relates to the obligations placed on custodians of historic shipwreck

relics, it would be appropriate for persons who have declared their material to be issued with Certificates of Registration (if this has not already occurred) and/or be sent an official letter from the Commonwealth Delegate on Norfolk Island, acknowledging the objects in their 'possession, custody or control' and advising of their obligations under the Act (again, if this was not done at the time of the Amnesty). Advice from other State Delegates should also be sought with regard to *Sirius* material that may have been declared to them in order that the nature and whereabouts of this material, which may be useful for research purposes, may be compiled and located at Norfolk Island.

Summary and recommendations

The* Sirius *Maritime Museum: building and environment.
The Museum serves as both an exhibition and principal storage venue for archaeological material recovered from the wreck site of HMS *Sirius*.

• **Storage**—the collection is presently stored in:

(a) Exhibition cabinets and/or as free-standing exhibits in the main gallery. (See following section 'Security/protection'.)

(b) Numbered bags/acid free boxes which are located in the mezzanine area of the Museum.

This area is only accessible by portable step-ladder. While this ensures a degree of security, it does not facilitate easy access to the collection for regular inspection; selection of objects for display purposes; or, research by *bona fide* persons. A specific storage cabinet for the collection has been ordered, as per previous recommendations, but had not arrived at the time of the audit. It is possible (for security reasons) that this will need to be located in the mezzanine area.

It is recommended, therefore, that:

(i) If the cabinet is located in the mezzanine area, objects should be arranged in the cabinet so as to facilitate easy visual inspection.

(ii) In view of the recently observed corrosion problems, inspection and monitoring of the artefacts should be undertaken at more frequent intervals (i.e. at intervals other than the designated audit inspections).

(iii) Care must be taken to ensure that fragile objects are stored in protective boxes, clearly labelled 'Fragile' and with handling instructions, e.g. 'This way up'; 'Handle with care', etc. ('Supa.Labels' as illustrated in Fig. 24 are available from Precision Paper Coatings Pty Ltd, Bankstown NSW 2200, in boxes of 500 individual labels.)

(c) Loose, in lower parts of the exhibition show cases.

Objects placed in these storage locations tend to be heavy items e.g. lead sheathing remains, and/or material not directly related to the *Sirius* i.e. material raised from Site 5 and probably associated with the wreck of the *Mary Hamilton*.

Figure 24. Examples of cautionary labels. (Precision Paper Coatings Pty Ltd.)

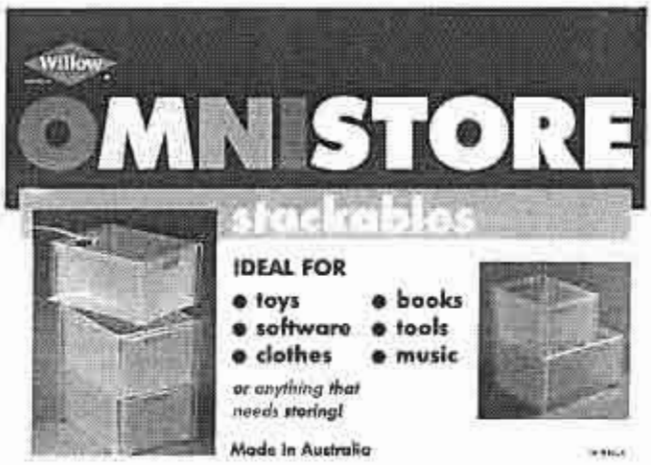


Figure 25. Example of stackable boxes suitable for storage.

Since some of this material has not been fully conserved and/or is exfoliating (i.e. *Mary Hamilton* iron material), it is recommended that:

(i) objects would be better stored in stackable plastic containers, (either within or external to the cabinets) which:

* permit visual inspection of objects to monitor corrosion activity;
* protect individual objects from potentially abrasive contact with different material in the same storage location;
* contain loose debris;
* prevent damage to the show case fabric;
* allow easier access to artefacts; and
* faciliate easier movement of objects.

Commercial storage containers come in varying sizes, with or without wheels, with close fastening lids, and with or without an external socket for placement of a label to identify the contents (cf. Fig. 25). ['Marvel' stackable, plastic storage containers with wheels, manufactured by Chirn Foog, come in various sizes, for example: (a)

Product code CF—8889 (L). Capacity: 85 l, Size: 690 x 458 x 409 (H) mm; (b) Product code CF—8999 (LL). Capacity: 125 l , Size 770 x 520 x 480 (H) mm. Other sizes are available.]

• **Maintenance**—The Museum is included in the regular building maintenance program for the Arthur's Vale Historic Precinct. This includes minor capital works such as internal painting. General cleaning i.e. floors, cabinets, show cases etc., is undertaken by museum staff.

On this visit, evidence of silverfish and other insect infestation was noted in several show cases to the extent that the fabric lining the cases (particularly the felt) and unmounted paper labels had both been attacked. Dead insects were present in some cases. Dust and cobwebs were also noted on and in some show cases (especially the cauldron case which has an open back), and on artefacts on 'open display' e.g. the gun carriages.

A small wet and dry rechargeable 'dust-buster', and microfibre glass and general dusting cloths were purchased to effect a cleaning regime avoiding the use of chemical agents. The latter were available at a store on Norfolk Island at a reasonable price.

It is recommended that:

(i) General cleaning strategies be improved either with the use of more effective cleaning aids (as above) and/or on a more regular basis to avoid build up of dust and potential infestation; and
(ii) Regular fumigation schedules be maintained to limit the incidence of silverfish and other insect infestation.

Figure 26a. Sensitive fabric from the *Batavia* is shown mounted on linen cloth, backed with museum quality acid free card, and framed with an acid free bevelled mount, the depth of which can be adjusted to suit the particular object. These are then held together within two perspex sheets (back and front) and securely fastened top and bottom by a sliding/clip-on perspex edging (see end view in Fig. 26b). (Perspex mount made to measure by AFM Plastic Products Pty Ltd, Balcatta, WA.)

• **Environment**

Temperature (T°) and relative humidity (RH) control mechanisms are in place but are inadequate to deal with extremes of humidity (i.e. 100%) as experienced on the island prior to the 2002 visit. This presents a problem for sensitive materials subject to corrosion (e.g. iron shot). Two show cases containing *Sirius* material were being monitored to assess the internal environment and determine whether the cases were providing adequate buffering.

It is recommended that:

(i) T° and RH monitoring be continued in cases containing sensitive materials.
(ii) Foam seals along the perspex edges of the show cases be checked and renewed, if necessary, to improve the internal show case environment; and
(iii) Individual, sealed display units be fabricated for highly sensitive materials e.g. the grape shot and copper Maravédis coin (cf. Fig. 26), to provide additional buffering.

• **Security/protection**—the general security of the museum building and the collection is well attended to. One show case, however, has a side missing and therefore does not provide adequate security protection for the objects inside. All other show cases are securely locked.

Many of the *Sirius* objects are on 'open display'—generally because of their size and/or weight—and are mounted either on wooden plinths or low platforms, or specially fabricated supports e.g. the carronade carriages. It was noted that some of the heavy bronze rudder fittings were not adequately supported to prevent movement.

Given that these objects can be physically touched by visitors, any instability either of the object and/or the plinth on which it is mounted could

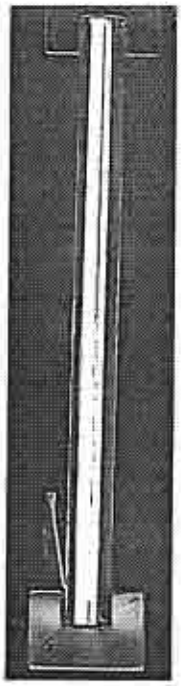
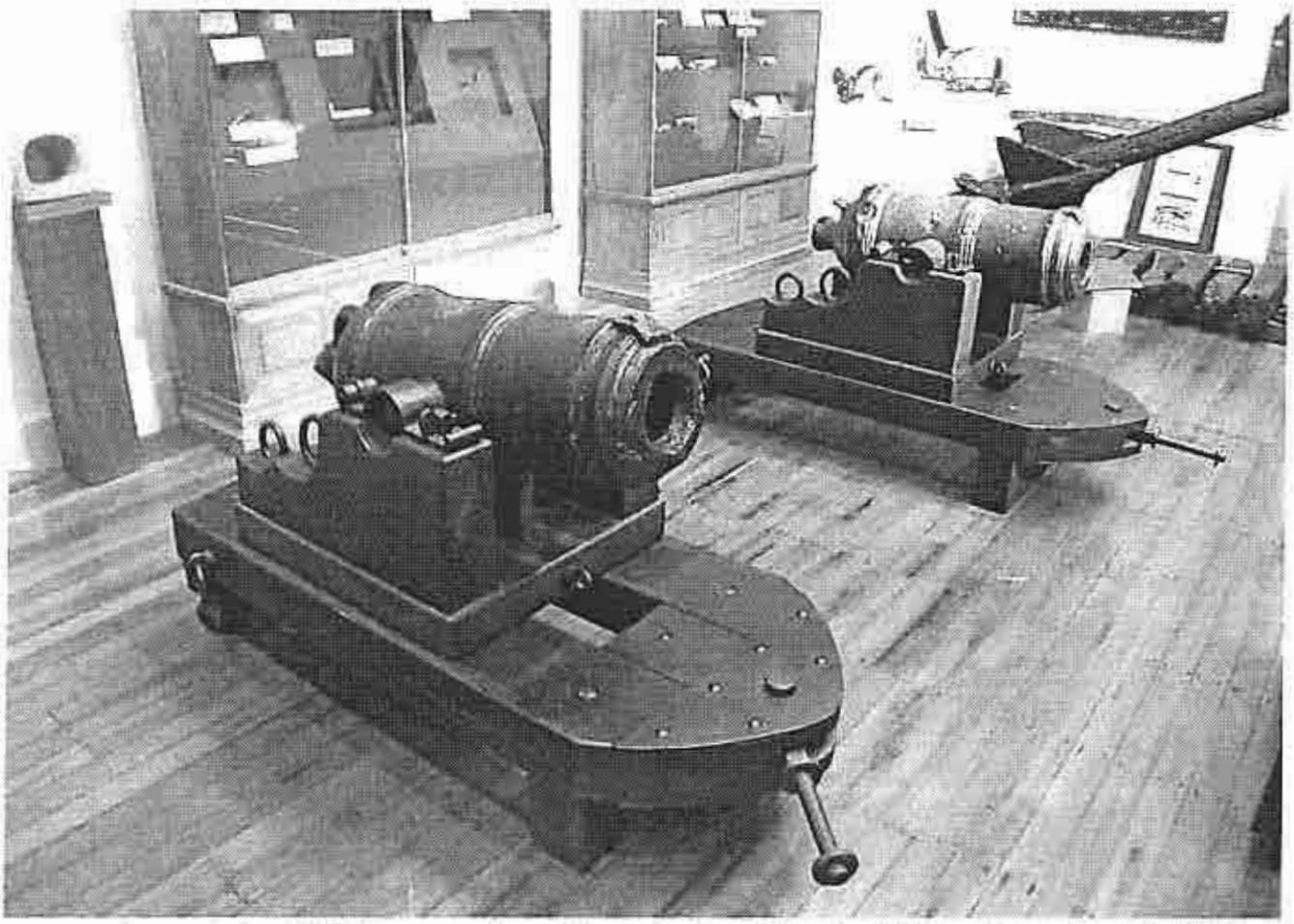


Figure 26b. End view of 26a.



Fifure 27. Carronades from HMS *Sirius* mounted on replica gun carriages. Photo: Patrick Baker, Western Ayustralian Maritime Museum.

pose a public liability threat to visitors. Given the current insurance climate prevention and/or adequate warning is the best safeguard.

Some smaller objects on 'open display' e.g. a copper fastening bolt, rudder nails etc. could easily be lifted and removed. Ideally these should be displayed under a protective perspex housing which is firmly secured to the base mount. At the very least, they should be securely fastened to the base mount. (This can be effected using fine stainless steel wire, nylon fishing line and or similar strong thread, placed around/over the object and secured with small screws into the base mount.)

The limited space in the gallery imposed by the size of the large free-standing *Sirius* objects, e.g. the anchor and carronades (see Figs 27 & 28), restricts visitor movement around these artefacts. As evidenced by the accidental damage to one of the carronades, this poses a problem in respect to the safety of the objects themselves, and visitor safety (i.e. people injuring themselves on sharp or projecting parts of objects. The carronade carriages, for example, have a moveable, metal fixture at the front end (see Fig. 27) which is just at shin height with minimal space to pass between this and the adjacent show case—certainly no room for the passage of a wheel chair!

It is recommended that:

(i) Heavy objects on 'open display' be securely supported to avoid any movement, either of the object or the support on which it is mounted.
(ii) Smaller objects on 'open display' should be secured either by individual perspex housings or by being securely fastened to the base mount in a suitable fashion; and
(iii) A review of the gallery lay-out should be carried out with a view to improving visitor access and reducing injury/damage liabilities to persons and artefacts.

Pier Store basement

Sirius objects stored in the above location are principally items undergoing further conservation treatment e.g. iron shot. Since these treatments involve immersion in chemical solutions which could have harmful effects, they should be subject to risk management assessment.

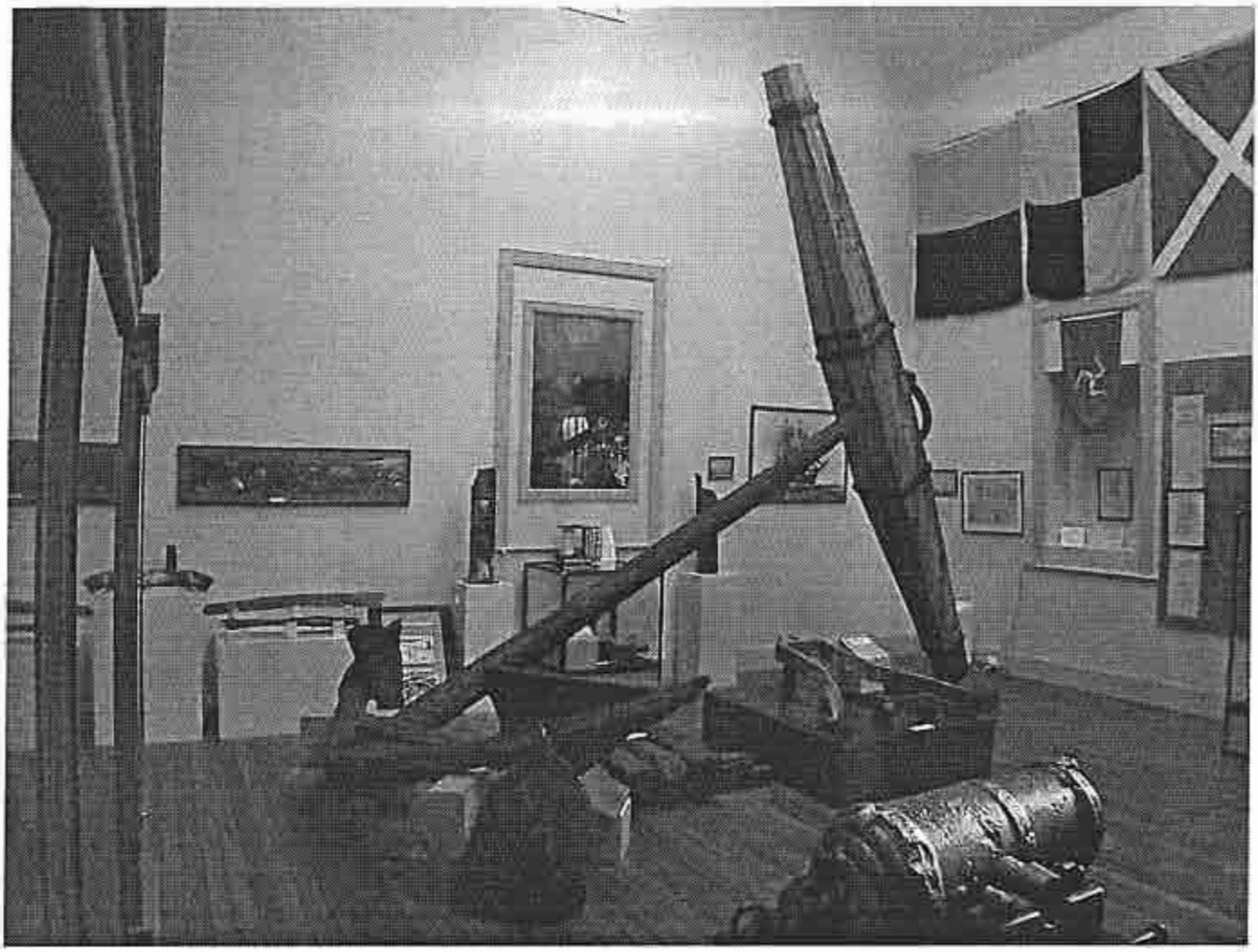


Figure 28. Heavy objects on 'open-display' in the *Sirius* Maritime Museum, Norfolk Island. Photo: Patrick Baker, Western Ayustralian Maritime Museum.

For example, any containers should have secure fitting lids to prevent spillage; be clearly marked to indicate the nature of the solution in case of physical accident, spillage, or other disaster; and, hazardous chemical warning signs to advise persons entering the building of the presence of such materials, for example, in case of fire. Ideally, items undergoing chemical treatment should be stored in a location where they will not present a physical, fire or other potential risk, and where they can be handled with appropriate safety equipment.

It is recommended that:

(i) Objects undergoing chemical conservation treatment should be
  (a) safely stored and labelled; and
  (b) re-located to an appropriate venue where potential hazardous risk is minimised, appropriate warning signs are *in situ*, and there is access to protective work-safe apparel and equipment for dealing with accident or emergency situations.

(ii) A suitable plan will need to be put in place for treating/re-treating copper alloy objects to ensure their long-term preservation and accessibility for research and exhibition purposes.

(iii) The on-going conservation problem with cast iron objects will need to be addressed.

PART 3. Web Site Strategy

There is currently no on-line information available about HMS *Sirius* other than the artefact database which is inclusive within the Western Australian Maritime Museum FileMaker Pro artefact database accessible through the WAMM web site (http://www.mm.wa.gov.au). The question of including information about the *Sirius* on the WAMM site has been discussed, and is certainly feasible given the Museum's strong involvement with the *Sirius* Project. However, the secondment of the Department of Maritime Archaeology's Webmaster to other multi-media priorities associated with the development of the new Maritime Museum at Fremantle substantially limited staff availability for the development of new Web pages for a considerable time.

However, whether or not this is the best option now needs to be considered in the light of Environment Australia's proposed *National Maritime Heritage Database and Web Site Strategy* (Environment Australia, 2001). Given that the NSW Maritime Heritage Online website operated by the Heritage Office of NSW has been proposed as a suitable structural model for the National Maritime Heritage Database and Web Site facility suggests that it would perhaps be better to:

- input information on the *Sirius* and other Norfolk Island shipwrecks into the NSW database so that it may be transferred directly to the Environment Australia site when this is operational; and
- prepare accompanying text, images and other information so that it can be incorporated directly into the national Web Site facility.

As Norfolk Island does not currently have a shipwrecks database, information pertaining to the island's shipwrecks is currently being compiled and entered into a FileMaker Pro clone of the present National Shipwrecks Database in Western Australia as part of the *Sirius* 2002 Project (Stanbury). This will be checked to comply with the proposed specifications for the Data Model as outlined in Section 5 of the *National Shipwreck Database Strategy* and should then be available for import into the new Shipwrecks Database.

Similarly, the original FileMaker Pro artefact databases relating to the *Sirius* (currently held in Western Australia) can be modified to comply with the Data Model specifications when these are determined to make this accessible. Norfolk Island maintains a Microsoft Access collections database with *Sirius* data entered from the 1994 *Sirius* catalogue listing. The correspondence of the two databases has not been checked and it is possible that there are some minor differences.

It is recommended, therefore, that:

(i) Discussion take place between the Norfolk Island Delegate, Environment Australia (Lynden Ayliffe, coordinator of the Working Party), the NSW Heritage Office (David Nutley) and the WAMM (Myra Stanbury/ Jeremy Green, member of the Working Party) to discuss the most appropriate options; and

(ii) Based on the outcome of the above discussions, the WAMM will assist in the preparation of necessary text, images, or other information.

Reference

Environment Australia, 2001, National Shipwreck Database Strategy. Draft document.

PART 4. Revision of Plan of Management for the *Sirius* site

The 1990 HMS *Sirius* Management Plan was reviewed in 1993 by Bob McMullan, Minister for the Arts and Administrative Services and Ernest Christian, Minister for Immigration and Lands and undertaken in 1996–1997 by Nina Stanton, Director/Curator, Norfolk Island Museum and Delegate of the Commonwealth Minister for Communications and the Arts (DCA), in consultation with DCA, Graeme Henderson and Myra Stanbury, Western Australian Maritime Museum and Dr Ian MacLeod, Western Australian Museum (see Stanbury & Macleod, 1996; Appendix 4; Stanton, 1997a & 1997b). Various issues were discussed at a series of meetings held at the WA Maritime Museum (WAMM) on Monday 15 September 1997.

The principal conservation and management issues reviewed concerned the following:

- **Artefact collections**

Storage and organisation of the collection needs to be reviewed with a view to facilitating research access (Management Plan 1990, 1993, Section 3.3.).

The principal storage/exhibition venue for the *Sirius* collection is the *Sirius* Maritime Museum (SMM). Delivery of a cabinet for storing the *Sirius* collection not on exhibit is awaited. Issues relating to storage organisation to facilitate access to *bona fide* researchers are discussed in Part 2 of this report.

Need for regular monitoring of the collection and assessment of storage (Management Plan 1990,1993 Section 4.8).

The 2002 audit has reconfirmed the need for vigilant checking of the artefacts for conservation/cleaning requirements and regular monitoring of the Maritime Museum environment with print outs to be safely stored.

The 2002 Audit revealed that a large percentage of the copper alloy artefacts will need to undergo initial de-salination treatment, and/or re-treatment (see Part 2 of this report), to ensure (a) their long-term stability (given the fluctuating relative humidity on Norfolk Island and the problems associated with the control of this factor in the Maritime Museum environment); and (b) improve their physical appearance for display purposes.

It is recommended that:

- Regular monitoring of the collection needs to be maintained to detect conservation problems.
- The University of Canberra (Department of Materials Conservation) be approached with a view to assessing whether some of currently identified conservation work (i.e. small copper alloy objects) could feasibly be undertaken as supervised Graduate Intern projects; and
- A conservation programme be implemented for the treatment of large copper alloy objects which have not previously undergone basic de-salination treatment.

Security (Management Plan 1993 Section 5.17

It was reported in 1997 that collection security measures included 'no open display of portable objects and ensuring all cabinets are locked' (Stanton, 1997a); further that new measures for safekeeping of keys had been implemented.

The 2002 Audit, however, has noted that there are small to medium-size portable objects on open-display that are not adequately secured and/or protected by barriers, and suggests various options for effecting better security for these items (see Part 2 this report).

It is recommended that:

- The security and stability of portable objects on open display be investigated.

Collection Management (Management Plan 1990, 1993 Section 5.16)

The new registers established for recording any *Sirius* artefact treatment undertaken by Norfolk Island Museum staff for the purposes of conservation, research and display; recording locational movements of any *Sirius* material; recording all *Sirius* researchers; and recording of all material handed in by the general public should be maintained. Where possible, this information should be recorded on a computer database so that the information is easily accessible, particularly data relating to the locational movement of objects. (These registers were not sighted at the 2002 Audit.)

The *Sirius* registration data has been entered onto a Microsoft Access database using the 1994 *Sirius* catalogue listing. Since this was an edited format of the down-loaded FileMaker Pro database held at WAMM, the two databases should be cross checked for compatibility before one or the other is selected as the 'national artefact database'. (New fields have been added to the FileMaker Pro database to record the 2002 Audit data.)

It was noted during the 2002 Audit that there was no Local Area Network to link the *Sirius* Maritime Museum computer with that in the Pier Store Research Centre. This means that the *Sirius* database is only accessible from the latter facility. If communications could be established between the two computers this would make it easier to input or update collections data, and provide information to the public or *bona fide* researchers visiting the Museum.

It is recommended that:

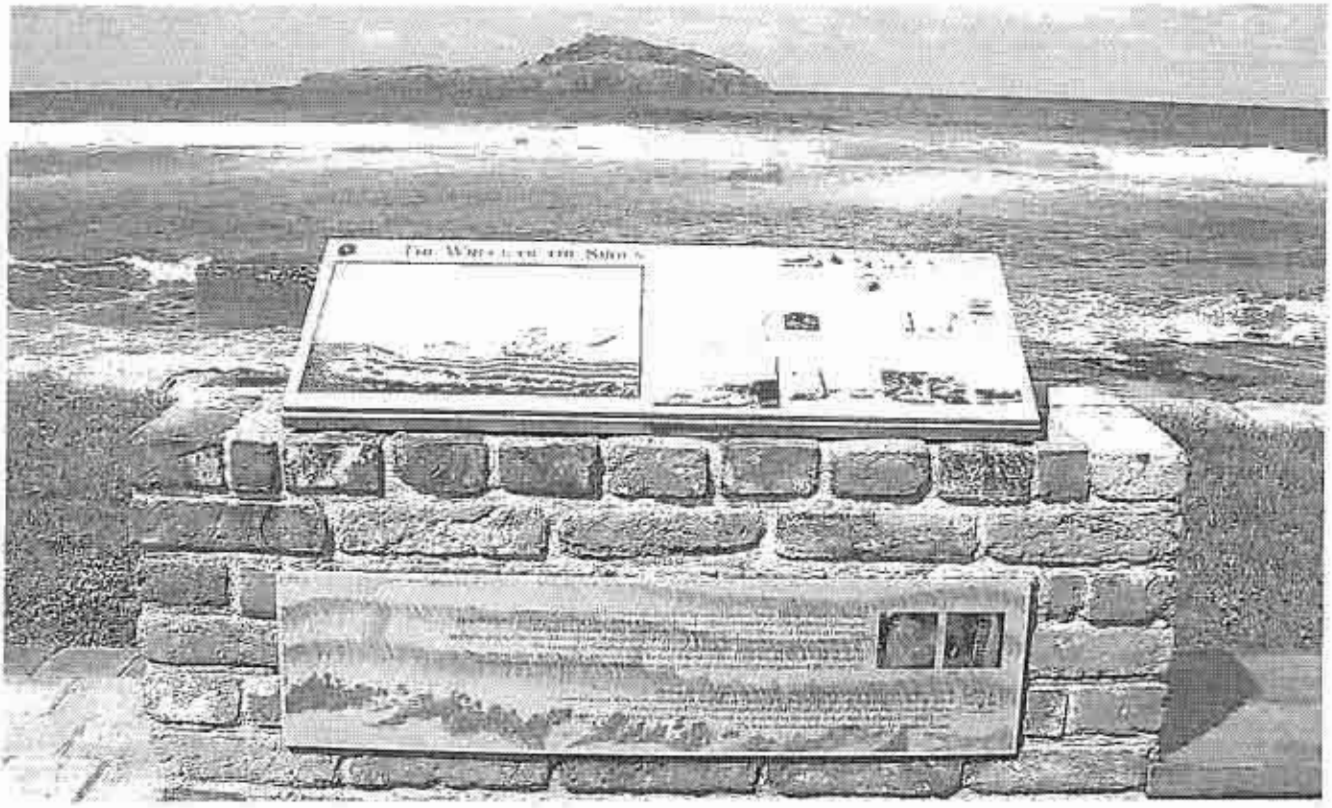


Figure 29. HMS *Sirius* monument with interpretive plaque. The bricks were recovered from Arthur Phillip's house in England.

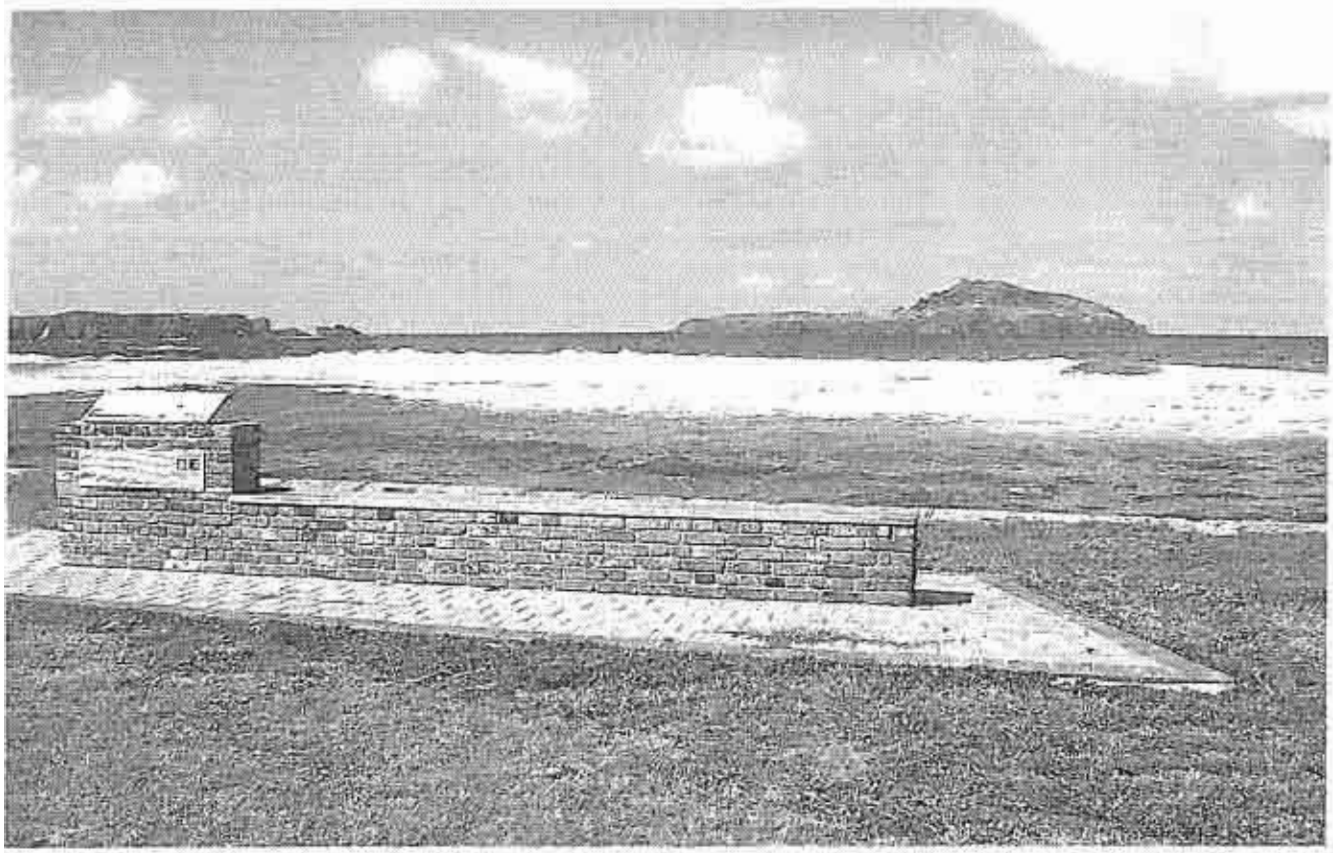


Figure 30. HMS *Sirius* monument with interpretive plaque erected as part of the Kingston/Arthur's Vale Historic Precint interpretive programme. The *Sirius* wreck site lies within the distant line of surf.

- The *Sirius* databases be cross-checked prior to establishment of the Commonwealth National Artefact Database; and
- The practicality of establishing a Local Area Network between the *Sirius* Maritime Museum and the Research Centre be investigated.

- **Interpretation — Management Plan 1990, 1993 Sections 3.15 and 4.7**

Exhibitions

In 1996 it was recommended that:

> New approaches and possibilities for display interpretation of the *Sirius* should be investigated as part of an on-going management plan (Stanbury & MacLeod, 1996).

While the efforts of previous Directors/Curators and staff of the Norfolk Island Museum in seeking small grants to implement exhibition strategies and gradually attempt to develop the interpretive displays are fully acknowledged, the existing displays neither portray the significance of the 'role of the *Sirius* in the foundation of the first settlements at Sydney Cove and Kingston' as proposed in an unsuccessful grant application by Stanton (1997b), nor the significance of the archaeological findings to the broader historical debate concerning the European settlement of New South Wales and the satellite settlement at Norfolk Island.

Since this author's last visit to Norfolk Island in 1990, a series of interpretive plaques and monuments have been installed at strategic points on the Kingston foreshore as part of the Kingston/Athur's Vale Historic Precinct interpretation project. A monument built from bricks recovered from Arthur Phillip's house in England, with an informative and attractively designed plaque relating to the history and loss of HMS *Sirius* (see Figs 29 & 30) is a significant addition to the commemorative plaque placed in 1990 on the seafront at Slaughter Bay and is to be strongly commended. Facing out to the turbulent *Sirius* wreck site, and illustrated with contemporary images of the wrecking of HMS *Sirius*, it effectively serves as a dynamic and tangible inuroduction to what one might expect to experience in the museum displays.

Although the momentum is continued to some extent in the video presentation that visitors to the SMM are encouraged to view before seeing the exhibits, it begins to decline in the face of the rather static displays of artefacts, which only begin to come to life with the enthusiastic commentaries of the well-versed Norfolk Island Museum tour guides.

The NI Museum trainees have done an excellent job in writing informative artefact labels (commenced under the supervision of Nina Stanton) (see Stanton, 1997b). However, the text was not forwarded to WAMM personnel as originally proposed (Stanton, 1997b) and inadequate proof reading has resulted in typographical errors on a number of labels. During the 2002 Audit, it was observed that the predominantly '3rd Age' museum visitors, especially the more discerning readers, were especially vocal in pointing out discrepancies or perceived errors!

In general, the font size of the text is too small for the average visitor to easily read, and is below standard museum signage parameters. Additional information about particular objects can easily be provided on museum 'Information Sheets' (see for example Appendix 5). These can be displayed and sold at a minimal charge to cover production costs and potentially assist in revenue generation.

The interpretation of the *Sirius* artefact collection, indeed any maritime archaeological collection which includes a large quantity of fragmentary material, presents a considerable challenge for curators and exhibition designers alike. The *Sirius* collection consists paradoxically of some extremely large, heavy objects; quantities of small, similar objects (e.g. ship's fastenings); and, a smaller collection of navigation instruments, small arms fittings and other miscellaneous objects with varying degrees of individual significance.

The building made available by the Norfolk Island Government for exhibiting the *Sirius* material is a restored heritage building which, like the Commissariat building at Fremantle (the Western Australian Maritime Museum), is subject to specific heritage guidelines. These may impact on the way in which exhibits may or may not be installed so as to preserve the fabric of the building, and so potentially act as a constraint in design planning.

I has been noted in Part 2 of this report that available floor space in the *Sirius* Maritime Museum is limited, and does not allow free and adequate movement between and around some showcases and free-standing objects; disabled access is certainly limited. The building, however, has a relatively high ceiling which means that vertical space may perhaps be used to better effect given an appropriate design plan.

Displays in the new Shipwrecks Gallery at the Western Australian Museum Geraldton, were designed to utilise the height dimension of the gallery (imposed by the installation of the 10 m high *Batavia* portico façade). Tall show cases along the walls, backed with interpretive text and imagery, present a series of related stories (Figs 31 & 32). Objects within the show cases are grouped and/or individually displayed at varying heights to create a sense of perspective and interest. Free-standing show cases designed by the WAM Department of Exhibition and Design (see Figs 33 & 34) were constructed by Geraldton tradespeople, who also assisted with the design and installation of the lighting. The cases were built to accommodate either large, heavy objects, such as cannon, or smaller, lighter artefacts; and further designed with a 'chunkier' feeling of old ships in mind rather than the more classical ship-model type of show cases, or the modern aluminium 'Click Lock' cases. The participation of the local community in the project not only had cost

Figure 31. Vertical show cases in the Shipwrecks Gallery, Western Australian Museum Geraldton. Photo: Jacques Maissin, WA Museum Perth.

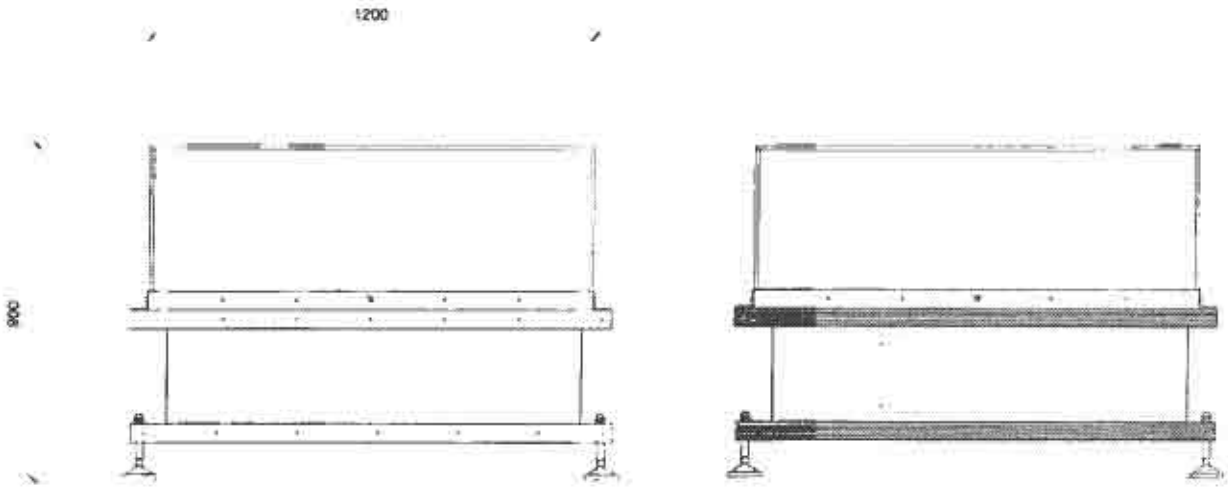
benefit effects, but also gave the community a sense of involvement and 'ownership' of the project.

Three-dimensional Computer Aided Drafting (CAD) software, combined with digital images of artefacts and other graphics packages now enable exhibition designers to create virtual exhibition models. Support modules, graphics, labels etc. are all coordinated according to the design plan and make final installation quicker and easier.

A similar concept design could perhaps be developed to enable the available space in the SMM to be utilised more effectively and creatively; to design exhibits that generate a greater sense of excitement and capture audience attention (particularly the younger residential population of Norfolk Island and younger tourists); to better demonstrate the structural features of HMS *Sirius* in relation to other 18th century exploratory ships (e.g. James Cook's *Endeavour*, HMS *Bounty* etc.); to interpret the process of wrecking as determined from the results of the archaeological investigations; to explain the differential preservation of objects recovered from the site and the conservation procedures employed; to illustrate the use of local expertise and traditional methods to reconstruct the gun carriages and anchor stocks; to maximise the use of the available collection rather than have it in storage; and, to acknowledge the many Norfolk

Figure 32. Vertical displays, Shipwrecks Gallery, Geraldton. Photo: Jacques Maissin, WA Museum Perth.

Figure 33. Cut section of *Batavia* cannon (in background) and silver display in free-standing show cases as shown in Figure 34 below. Photo: Jacques Maissin, WA Museum Perth.



MATERIALS

25MM EXTERIOR GRADE PLY SHEETS

REX A-JUSTA FEET SUPPLIED BY WA MUSEUM

REMOVABLE PANEL FOR FIBRE OPTIC ACCESS IN BASE

EXTERNAL GLASS SIZE
1200 X 1200MM X 450MM

50 X 3MM BRASS FLATBAR FIXED ON TWO SIDES OF PLY WITH COUNTERSUNK PHILLIPS HEAD SCREWS FLUSH

50 X 50MM MILD STEEL ANGLE FRAME MITRE WITH TAMPERPROOF SCREWS AND ABLOY LOCKS SUPPLIED BY MUSEUM

museum

WESTERN AUSTRALIAN MUSEUM - GERALDTON
SHIPWRECKS TABLECASE

DRAWN	DESIGNED	REDUCTION
CHECKED	PRINCIPAL	
APPROVED		
SCALE 1:10	DATE 01.05.01	DRAWING No. SW21
	FILE No.	

Figure 34. Free-standing show cases designed for the Shipwrecks Gallery at the new Western Australian Museum Geraldton. Courtesy of the Department of Exhibition and Design, Western Australian Museum Perth.

Islanders, corporations, organisations and individuals who have contributed to the *Sirius* Project.

(The Department of Exhibition and Design, Western Australian Museum Perth, is experienced in preparing exhibitions of shipwreck artefacts and could offer consultative services.)

It is recommended therefore that:

(i) Funding be sought to enable
(a) a professional, costed, exhibition design plan to be developed for the *Sirius* Maritime Museum; and,
(b) for a staged implementation of the plan should the total cost exceed the inital funding allocation.
(ii) An application be made to the Australian National Maritime Museum under the Project Support Scheme for a NI Museum staff member to gain experience in museum exhibition and design practices.

- **Future funding to complete on-site work—Management Plan 1990,1 Section 3.12**

> 3.12 There is a need for continued archaeological investigations on the site to answer important questions about the ship which in turn have a bearing upon the debate about the original British motivation for colonisation of Australia.

The aim was to excavate a 1 m x 3.5 m transect through an area of dense iron ballast in the anticipation of revealing any surviving timber or structural elements of the hull of the *Sirius* which would add to the existing body of archaeological data and further support or refute the working hypotheses developed for the site in the original research design. This was the planned final stage of the 1988 investigation and required preliminary *in-situ* corrosion potential (E_{corr}) and pH measurements of the iron ballast pigs (to further the comparative corrosion studies being undertaken for the *Sirius* and other Australian wreck sites: see MacLeod, 1998); and, the pre-stabilisation of the proposed trench with sacrificial anodes, to assist in reducing the time (and hence costs) of treating any cast iron ballast pigs and/or other artefacts which might be raised as a result of the excavation. This practice, generated by successful application of this methodology to an anchor and carronade from HMS *Sirius* is now being applied as a management strategy to iron and composite wrecks in South Australia (MacLeod, 1998).

Given the logistical and risk management issues of working on parts of the main *Sirius* wreck site (and also on the inshore reef areas), It is recommended, that:

- Any future archaeological work on the *Sirius* site needs to be carefully reviewed in terms of:
(a) the research questions being addressed and the potential for these to be answered;
(b) appropriate risk management and diving strategies for both the outside reef and inner reef areas; and
(c) the implications for the Norfolk Island community in terms of the Memorandum of Understanding and the on-going management of the site and the collections.

- **Site Management Environmental Studies—Management Plan 1990, 1993 Section 3.7 and 4.5**

The investigation of the effect of sea urchins on *in situ* shipwreck artefacts needs to be reassessed in terms of:
(a) the current status of monitoring;
(b) procedures for monitoring the effect on fragile objects and/or specific areas of the wreck site; and
(c) the investigation of any biological controls that may assist in retarding the colonisation of these organisms on artefacts, iron objects especially.

- **Site inspection—Management Plan 1990, 1993 Section 3.6, 3.8, 3.9, 3.15 & 5.2**

Regular site inspection as per the existing Management Plan should be maintained and reported upon, including the underwater and above water plaques.

- **Records collection (Photographs/database/artefact drawings)—Management Plan 1990, 1993 Section 3.4, 4.10 and 5.18**

3.4 Photographic collection

The photographic collection continues to be stored in a satisfactory environment at the Western Australian Maritime Museum. The collection has been made available to all *bona fide* requests. Prints, duplicate transparancies have been, and will continue to be, produced for other users in the well-equipped and full-time-staffed photographic section.

It has been agreed that a selection of colour and black and white images be scanned and recorded on CD for the Norfolk Island archives. This work is presently in progress by Patrick Baker.

It is recommended that:

(i) The photographic collection remain in the environmentally controlled storage facility at the WAMM; and
(ii) Photographic services/requests as indicated above continue to be met through the WAMM.

Artefact drawings

The original drawings of *Sirius* artefacts are presently stored in a satisfactory environment at the Western Australian Maritime Museum. They are still being accessed for research purposes. The illustrations are now readily available in published format (see Stanbury, 1994).

It is recommended, therefore, that:

(i) A folio of dyeline and/or photocopy prints be compiled for reference in the NI Museum Research Centre; and/or

(ii) A CD containing the scanned catalogue images be produced for research access (with copyright approval of AIMA). (This would avoid problems associated with the storage of large format drawings which need to be stored in flat map cabinets.)

Protection, rcovery and accessibility of further material
(See Part 2.8 of this Report and Stanton, 1997b)
It is recommended that:

- Persons in possession, custody or control of *Sirius* material (as registered in the NI Registration Series) be issued with a Registration Certificate and a letter re-confirming their obligations with respect to this material under the provisions of the Commonwealth *Historic Shipwrecks Act 1976* if this has not already been done.
- Advice be sought from other State delegates with regard to any other *Sirius* material that may have been declared to them during the Commonwealth Historic Shipwrecks Anmesty 1993–94, its nature and whereabouts, so that a record can be compiled for research purposes.

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Appendix 1. Material needing conservation and/or conservation check: 2002 collections audit

Reg. #	Item	Treatment priority	Location
	All iron shot on display and in Pier Store conservation.		
SI 057	Anchor		Display
SI 511	Grape shot		Display
SI	Copper clench rings		
SI	Copper bolts		Display & trestle table
SI	Tin bronze sheathing nails		
NI	Rudder Gudgeon and Pintle brackets and arms on display—not previously treated and treated		Display
NI 049	Copper strap —AMUEL KIN-		Box
NI 050	Pump housing		Display
SI 033	Bolt - slight green corrosion		Airport
SI 062	Spike		
SI 086	Pintle pin—white powdery deposits		Display
SI 100	Grape/canister shot		
SI 113	Sheathing nails		
SI 117	Lead sheathing nail		
SI 127	Clench ring	?	
SI 137	Clench ring	?	
SI 141	Lead sheathing nails		
SI 147	**Sextant**		Display
SI 165	Bolt—some white powdery deposit		Airport
SI 166	Clench bolt		
SI 174	Ring		
SI 194	Lead shot		
SI 213	Clench ring		
SI 227	Lag bolt/screw		
SI 237	Pintle/gudgeon brace		Display
SI 239	**Pantograph arm**		Display
SI 242	Rudder nails		
SI 253	Clench rings		
SI 254	Clench rings		
SI 255	Clench rings		
SI 256	Lag bolts/scres		
SI 262	Machine/screw bolts		
SI 272	Clench rings		
SI 278	Musket balls		
SI 294	Clench rings		
SI 296	Machine/screw bolts		
SI 312	Clench rings		
SI 316	Copper sheathing		
SI 323	Rudder nails	Remove sticky tape	
SI 343	Ring		
SI 349	Clench rings		
SI 351	Rudder nail		
SI 354	Bolt		
SI 356	Roves		
SI 392	Grape shot		
SI 401	Cannon ball—half		Pier Store
SI 406	Tube (brass)		Box
SI 408	Keel staple with ragged points		
SI 418	Lead shot	Urgent	
SI 422	Clench rings		
SI 426	Roves		
SI 427B	Pewter button		Display
SI 434	Brass button w/ wavy lines		
SI 460	Clench ring		
SI 484	Lag bolt/screws		

Reg. #	Item	Treatment priority	Location
SI 505	Grape shot		
SI 508	Grape shot		
SI 511	Grape shot	Urgent	
SI 516	Cannon ball		Display
SI 526	Grape/canister shot		
SI 529	Buckle (brass)2 pieces.		Box
SI 544	Cannon ball		Pier Store
SI 545	Cannon ball		Pier Store
SI 546	Cannon ball		Pier Store
SI 549	Cannon ball		Pier Store
SI 565	Copper sheathing & nails		
SI 568	Grape shot w/fabric		Box
SI 582	Cannon ball		Display
SI 583	Cannon ball (? 1 with this number on display and 1 in Pier Store conservation. 1 could be 584)		Display & Pier Store. Should be only be 1 ball with this #
SI 585	Cannon ball		Pier Store
SI 586	Cannon ball		Display
SI 587	Cannon ball		Display
SI 588	Cannon ball		Display
SI 589	Cannon ball—half only		Pier Store
SI 594	Cannon ball		Pier Store
SI 596	Cannon ball		Display
SI 599	Cannon ball		Display
SI 601	Cannon ball		Display
SI 605	Cannon ball		Pier Store
SI 607	Cannon ball		Pier Store
SI 608	Cannon ball		Pier Store
SI 609	Cannon ball		Display
SI 610	Cannon ball		Display
SI 611	Concretion from large cannon ball		Pier Store
SI 614	Cannon ball ? Correct #		Pier Store
SI 615	Cannon ball		Pier Store

Appendix 2: HMS Sirius Collection Audit March 2002: objects not located/not seen

Reg. #	Item	1997	2002	Notes
SI Series				
SI 008	Copper sheathing	x	x	
SI 020	Iron bolt	x	x	
SI 055	Rock samples		x	
SI 056	Rock samples		x	
SI 079	Copper pieces		x	
SI 133	Copper frags w/round holes		x	
SI 152	Glass bottle top	x	x	
SI 153	Green glass fragments	x	x	
SI 198	Sheathing with horsehair		x	
SI 228	Planking/skirting nails (2). Analysed.		x	Bag labelled 228 had 4 x sheathing nails, but 228 nails should look like fig. 26 in *Sirius* catalogue, Taken to WA in 1990 for analysis. Still in WA.
SI 233	Concretion w/ copper sheathing	x	x	
SI 261	Cu sheathing		x	
SI 303	Cu sheathing		x	
SI 305	Grape shot	x	x	
SI 315	Musket balls (34)	x	x	
SI 317	Cu sheathing		x	
SI 324	Unid.iron frags		x	
SI 377	Cu sheathing		x	
SI 388	Grape shot		x	Probably on display
SI 389	Grape shot		x	Probably on display
SI 405	Cu sheathing		x	
SI 436	Unid piece of yellow substance (propolis)		x	x
SI 450	Cu sheathing		x	
SI 458	Cu sheathing		x	
SI 468	Grape shot	x	x	Probably on display
SI 471	Grape shot		x	Probably on display
SI 486	Pin (brass) shaft only	x	x	
SI 502	Grape shot with fabric		x	Probably on display
SI 509	Unid wood plug (?) with brass wire coil	x	x	
SI 521	Cu sheathing		x	
SI 525	Canister/case shot		x	Probably on display
SI 528	Musket ball	x	x	
SI 548	Grape shot		x	Probably on display
SI 553	Arrow head impressed in concretion	x	x	
SI 554	Cu sheathing		x	
SI 584	Cannon ball		x	Possibly 1 of 2 x 583
SI 600	Cannon ball	x	x	
SI 603	Cannon ball	x	x	
SI 604	Cannon ball		x	
SI 614	Cannon ball		?	Pier Store basement in conservation. ? Correct number. Partly obscure before treatment.
SI 624	Anchor not yet raised			
SI 625	Anchor not yet raised			
NI Series				
NI 004	Bronze strap		x	Ian Kenny collection.
NI 005	Copper fastening bolt		x	Ian Kenny collection.
NI 006	Sheathing tack		x	Ian Kenny collection.
NI 007	Copper sheet with rivets		x	Ian Kenny collection.
NI 008	Pintle pin		x	Ian Kenny collection.
NI 009	Pintle pin		x	Ian Kenny collection.

Reg. #	Item	1997	2002	Notes
NI 010	Fastening bolt		x	Ian Kenny collection.
NI 012	Stoneware jar sherd		x	Ian Kenny collection.
NI 013	Lead sheet		x	Ian Kenny collection.
NI 014	Gudgeon strap		x	Ian Kenny collection.
NI 022	Copperalloy nail or spike with tapered square end.		?	NIM May be the nail loose in box of BTB *Sirius* items.1985 catalogue to be checked. No number on object.
NI 025	Bronze keel staple		x	NIM
NI 026	Piece of copper - possibly keel staple		x	W. Powell collection, NIM
NI 027	Copper sheet with small rivets 10-11 mm diam—part of cauldron ?		x	W. Powell collection, NIM
NI 028	Copper sheet with 5 rivets 18-20 mm diam—part of cauldron ?		x	W. Powell collection, NIM
NI 029	Trigger guard—small unid. Crown mark.		x	W. Powell collection, NIM
NI 030	Trigger guard		x	W. Powell collection, NIM
NI 037	Part of sextant.		x	Was in Bounty Museum. No longer there. Dave South coll. (?)
NI 038	Gudgeon strap		x	Was in Bounty Museum. No longer there. Karl Davies coll. (?)
NI 044	Bronze chain link		x	John Lawking collection
NI 045	Rudder fastening		x	John Lawking collection
NI 046	Sheathing nail		x	John Lawking collection
NI 047	False keel staple		x	John Lawking collection
NI 048	Keel bolt, eroded		x	Hudson Pratley collection

Appendix 3: NI 49 Copper strap with engraving. Marked: '- - AMUEL KIN-'

Figure 35. Copper strap (NI 49) marked with the name [Sa]muel Kin[g]. Photo: Patrick baker, Western Australian Maritime Museum. Scale in cm.

This item is probably associated with Samuel King, private marine 50th (Portsmouth) Company. The following extract from Mollie Gillen's book *The founders of Australia* (1989: 208–209) gives these details:

Samuel King (c. 1768–1849)

...joined *Sirius* as one of the ship's complement of marines on 24 February 1787. [The First Fleet was anchored off Portsmouth at this time and the marines were employed guarding the convicts: see Moore, 1987: Chapter 1.] On 30 August 1788 he made his will in favour of Michael Murphy (qv), as he was about to go to Norfolk Island by *Golden Grove* on leave from *Sirius* to help in the settlement of the colony.

On 5 April 1791 King decided to settle, and received a grant of 60 acres (Lot No. 13) at cascade Stream. By October 1793 he had ten of his 50 ploughable acres cultivated, and was selling grain to stores by mid May 1794, when he was living with Mary Rolt (qv), who had gone to Norfolk Island by the same vessel in 1788.

King, who had been a scribbler [tender of a carding machine for weaving] before he became a marine, was renting four acres to Charles Allen (qv) in 1794, and in August 1800 he sold ten acres to William Hambly (qv) and ten to Elizabeth Thackery (qv). In 1805, still without a wife or child, he was a third class settler, with five of his remaining five acres cultivated and five waste and owned 17 hogs. Married by 2 August 1807, he and his wife [not identified] were victualled for his service as a constable (the woman was not Mary Rolt who had been marked off the Norfolk Island victualling records as leaving for England on the *Britannia* in October 1796). Nearly five acres were in grain; he owned nine hogs and had 40 bushels of grain.

On 3 September 1808, without wife or child, King went to VDL [Van Diemens Land] as a first class settler on *City of Edinburgh*, having been credited with £6 for his thatched and boarded house (16 x 10) and two thatched board outhouses. On 28 January 1810, as a widower, he married Elizabeth Thackery (qv) at Hobart.

At New Norfolk, VDL, King held 28 acres, and in 1815 he signed the petition for a Court of Criminal Judicature. He was buried in the Wesleyan cemetery at Back River having died on 21 October 1849, age given as 86.

Michael Murphy (c. 1758–1823) was a private marine of the 41st (Portsmouth) Company and also joined *Sirius* as one of the ship's complement of marines on 24 February 1787.

On 30 August 1788 he made his will to "my beloved friend" Samuel King (qv), signing with a mark, and was discharged from the ship's books to the Port Jackson detachment on 5 June 1789.

References

Gillen, M., 1989, *The founders of Australia. A biographical dictionary of the First Fleet*. Library of Australian History, Sydney.

Moore, J., 1987, *The First Fleet Marines 1786–1792*. University of Queensland Press, St Lucia, London, New York.

Appendix 4: Review of HMS *Sirius* Management Plan. Myra Stanbury and Ian Macleod, 11 November 1996.

The research potential of the HMS *Sirius* site and artefact collection

The *Sirius* site and artefact collection comprise a valuable resource for comparative studies which may be expected to increase our understanding of the events occurring in New South Wales and on Norfolk Island during the first years of settlement.

Several shipwreck sites in Australian and South pacific waters have yielded collections of artefacts which potentially provide information about European and other vessels employed in the South Seas during the late 18th century. These may not only be used to answer questions about shipbuilding traditions, the life pf personnel, convicts and others on board these ships, but also to enhance the interpretation of archaeological material recovered from land excavations, e.g. the first settlement sites at Norfolk Island and First Government House, Sydney.

In scientific terms, the *Sirius* wreck site and collection have already demonstrated their potential to provide new information concerning wreck site environments, corrosion phenomenon, improved methods of conservation treatment, the analytical identify of objects and details relating to methods of manufacture, and so on.

The results of investigations thus far have had broad-reaching effects, especially with regard to the development of management strategies for other shipwreck sites in Australian waters.

1. The site

- Part of the planned excavation work for 1988 was to excavate a 1 m x 3.5 m transect through an area of dense iron ballast in the anticipation of revealing any surviving timber or structural elements of the hull of the *Sirius*. Survival of such features on the *Sirius* site would be of major archaeological importance to the interpretation of the site in relation to the research theses developed for this site.

[An application for funding under the National component of the National Estate Grants Program (Henderson/ Stanbury/MacLeod: 1995–96) to complete this phase of site work (and other aspects of research and management) was unsuccessful.]

- Research studies concerning corrosion phenomenon and biological degradation of the *Sirius* wreck site are incomplete.

[These were included in the objectives of the above funding proposal.]

Action Plan

1.1 Future funding to complete on-site work as above.

(See Management Plan, 1990, Section 3.12)

- Continue to seek funding to enable transect excavation and associated conservation of artefacts to proceed in order to finalise original research design proposals.

1.2 Interim measures

- Pre-stabilise the area of the proposed trench with sacrificial anodes.

This would:

(i) assist in reducing the time (and hence the costs) of treating any cast iron ballast pigs and/or other artefacts which may be raised as a result of the excavation; and
(ii) provide an experimental situation to further study the corrosion phenomenon on this site.

[Data collected over previous seasons of work on the site are contributing to the formulation of predictive models concerning the degradation of objects on high energy, wave-swept sites the benefits of *in situ* conservation methods. The results are proving beneficial in developing management strategies for similarly situated historic shipwreck sites in Australian waters. The applicability of these models is already being tested on other shipwreck sites.]

1.3 Site environmental studies

(See Management Plan, 1990, Section 3.7 & 4.5)
- Investigation of the effect of sea urchins on *in situ* shipwreck artefacts.

2. Artefact collections

As stated earlier, the *Sirius* artefact collection is a useful source of data for comparative research (see Management Plan, 1990, Section 2).

Before the collection is made available to *bona fide* researchers it is essential that all outstanding recording, marking and documentation is complete. In addition, storage and organisation of the collection need to be reviewed with a view to facilitating research access.

2.1 Trumion carronade (SI 626): need to obtain measurements from second carronade to construct technical drawing.

The carronade SI 626 was raised in 1993 and has been conserved. Some measurements were obtained but are not sufficiently detailed to allow a drawing to be made.

2.2. Marking of objects: need to complete registration marking of treated artefacts.

A large number of small artefacts, mainly ship's fastenings, sheathing nails etc. have not been marked with their registration numbers. This is essential if the collection is to be made available to *bona fide* researchers for future study.

2.3 Need for more artefact analysis for archaeometric studies combined with conservation

Metallurgical/chemical analyses of selected ship's fittings, fastenings and sheathing samples from the *Sirius* have provided research data relating to technical aspects of 18th-century shipbuilding; manufacturing technology, quality of production and workmanship of various components, and so on. The findings are providing tangible evidence to support/refute historical reports and assist in comparative artefact studies. A number of 18th-century shipwreck sites in Australian and extra-territorial waters (e.g. Solomon Islands, Mauritius...) are yielding artefacts which will provide a comparative data-set for the *Sirius* collection.

A review of the collection is required to reassess the artefacts in terms of future analytical/archaeometric studies combined with conservation.

2.4 Need for regular monitoring of the collection and assessment of storage.

The collection should be regularly audited and inspected to note any loss and/or alteration in the physical condition of specimens.

Storage of the collection should be re-assessed to ensure that:
(i) it is environmentally suitable; and
(ii) specimens may be easily accessed by future *bona fide* researchers.

2.5 Interpretation.

(See Management Plan, 1990, Section 3.15 & 4.7)

Historical and archaeological research has added substantially to earlier knowledge of the *Sirius* site, and the artefacts recovered from it, now making it feasible to consider more dynamic and/or interactive methods of interpretation for the benefit of public education and visitor enjoyment.

New approaches and possibilities for display interpretation of the *Sirius* should be investigated as part of an on-going management plan.

3. Records collection (photographs/database/artefact drawings)

(See Management Plan Section 4.10 and Section 5, 'Implementation plan')

3.1 Look at location/storage of photographic archive.

3.2 Look at location/development/access of artefact database.

3.3 Look at location of artefact drawings and/or other original records.

Myra Stanbury
Curator, Maritime Archaeology

Ian MacLeod
Head of Materials Conservation

11 November 1996

Appendix 5: Sample Information Sheet

Sirius Maritime Museum

NORFOLK ISLAND MUSEUMS

Information Sheet
HMS *Sirius*
A BASIC GUIDE

HMS *Sirius* began its life's journey as the ***Berwick***, a ship built in 1780–81 for the **Baltic or East Country trade** at Mr Watson's Rotherhithe shipyard. **Rotherhithe** was a shipbuilding village on the **Thames**, adjacent to **Deptford**. Large ocean-going ships of a high standard were being built there as early as the 16th century. The ***Mayflower*** sailed from Rotherhithe with the first settlers for America in 1620.

The *Berwick* was built on similar lines to **Captain James Cook's** vessels of exploration—the *Endeavour, Discovery, Resolution* and *Adventure*. These strong, sturdy ships were built to carry heavy cargoes of coal from the north-east ports of England to London and elsewhere, and were known as **collier barks**. The *Berwick* was intended to transport coal or other merchandise to the Baltic ports and return with timber for ship's masts and other marine supplies—tar and pitch for caulking, hemp and flax for sails and cordage, copper for sheathing ship's bottoms and high quality Swedish iron for forging anchors.

The approximate dimensions of the *Berwick*

Length of hull for tonnage	89' 8 3/4"
Breadth	32' 9"
Depth in hold	12' 11"
Tonnage	511 tons

The *Berwick* was a large ship for its time. Before construction was completed, the hull was purchased by the British navy to be fitted out as an armed storeship at Deptford. On 25 April 1782, the *Berwick* embarked on its first mission across the Atlantic to the still friendly port of Halifax, Nova Scotia. (Britain was at war with its American colonies at this time.) The ship made two voyages between Halifax and New York before returning to Britain in October 1783. After a substantial refit at Deptford, the *Berwick* set sail again in May 1784, visiting the Carribean ports of Antigua and Jamaica between July and September of that year.

After returning to Deptford in April 1785, the *Berwick* lay in **ordinary** (out of commission) for most of the next twenty months. During this time, the ship was surveyed afloat and given some repairs. It is probable that the *Berwick* made another voyage in March 1786, possibly to Madeira.

In August 1786, orders were issued from the Admiralty to the Navy Board to prepare the *Berwick* for 'foreign service'. It was not until October 1786, however, that its intended role was revealed. The ship was to be registered on the List of the Royal Navy as a 6th Rate by the name of ***Sirius*** and fitted out with the appropriate complement of guns and men.

The *Sirius* was to be suitably fitted out and equipped for **'a Voyage to Botany Bay'**.

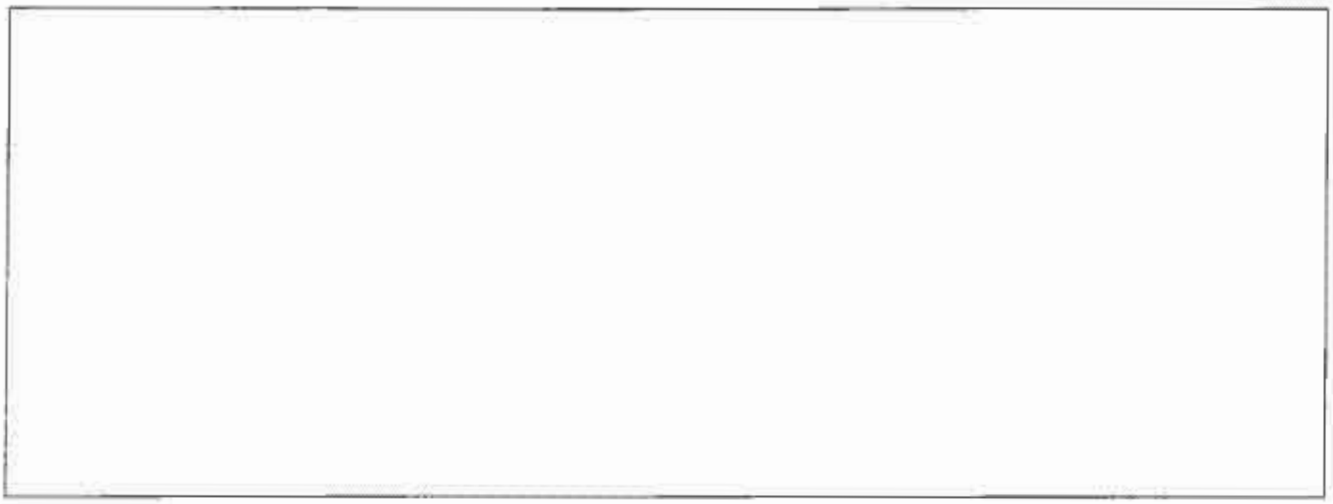

IMAGE OF THE LINES OF THE INCOMPLETE *BERWICK* OR COOK'S *ENDEAVOUR* TO ILLUSTRATE THE TYPE OF VESSEL.

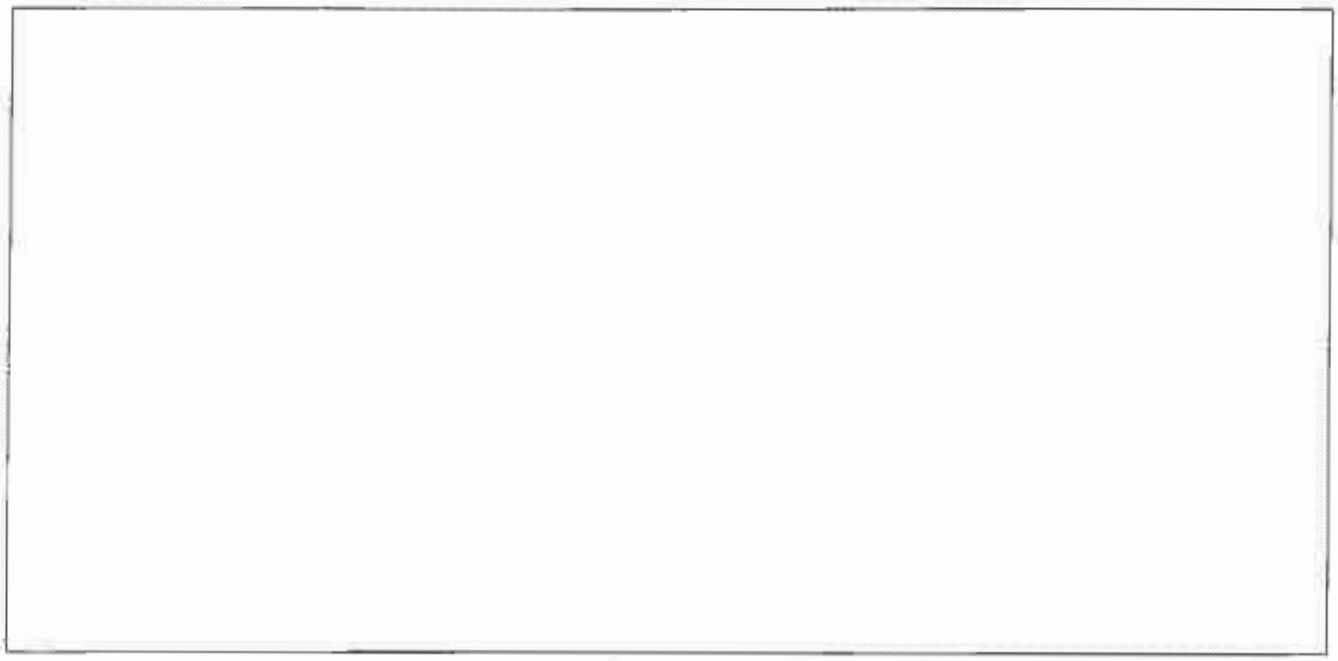

IMAGE OF THE SPECTACLE PLATE WITH THE NAME *BERWICK*.