

Condition assessment, care and stabilization recommendations for artefacts so far recovered from the HMS Hazardous wreck site

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HMS Hazardous

54 Gun fourth rate, captured from the French 1703 lost in November 1706
Position: 50 45. 06N 00 51. 24W - Bracklesham Bay, West Sussex.
Depth: 6.5m
Located 1977
Designated #32 /1986 PWA [1972]
Licensee Iain Grant SAA Club 308
H&WTMA designated archaeological advisors

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Management Summary

Over the last 30 years some 450 artifacts have been collected from the wreck site and stored and treated at various locations in the vicinity of West Wittering. H&WTMA have compiled a data base of all the artifacts. H&WTMA are supporting the local volunteers who have been working on this site for over 30 years with little outside help. MRAS have been commissioned by H&WTMA to undertake a conservation assessment of the artifacts and to recommend appropriate conservation treatment and storage conditions.

Using the H&WTMA database fields have been added in order to summarize the immediate treatment for each recorded artefact. Beyond that MRAS has made recommendations on how the project could be reorganized on the land side to make the project more sustainable and more accessible to the public.

Over half the artifacts recovered from HMS Hazardous have been dried out for many years and are being stored in ambient conditions. Little can be done to reverse this process but they can be stored in Environmentally Controlled Conditions to prevent any further deterioration. Inorganic materials should be kept in different conditions for Organic but a dividing wall in the existing container with humidity control units could be a reasonable interim measure. The remaining artifacts that are wet have probably been immersed for sufficiently long to remove all the chlorides. This needs to be verified by immersion in fresh water and chemical analysis of the water in four weeks. These artifacts should be dried as well and stored with the main collection.

A budget of £5000 could provide for storage that would not only allow the remaining artifacts to be processed but displayed in conditions which would allow for their longer term survival and allow public access.

Condition assessment

H&WTMA have compiled an Access database of all the finds with a date of recovery, treatment and condition. Most of the artifacts are being stored in a steel container, there is a small display in a converted road trailer, the remainder are stored in ambient conditions in Iain Grants house and shed and some five artifacts are being stored at the MRT. About 280 artifacts are now being held in dry storage. The remainder are being held in passive water storage. The initial assessment is based on the table below [*For future Generations* Dr M Jones Mary

Rose Trust 2003]. The finds from *HMS Hazardous* have all been recovered more than five years ago and this leads inevitably to certain conclusions.

<i>Classification</i>	<i>Marine finds</i>	<i>Attention</i>
Class A	Dye Material, Books or leather; Skin & gut products, textiles, sail-cloth	Deterioration can occur within minutes of exposure to light and air. Must undergo immediate active treatment
Class B	Concretions & Iron	Deterioration may occur within hours. Material must be kept wet at all times, in fresh water with a pH adjusted to 10-12 with sodium hydroxide
Class C	Wood, copper, bronze, brass, lead & pewter.	Must be kept wet at all times. Inhibit bacterial, insect & fungi attack on wet wood during passive storage. Store at 5°C to reduce biological activity
Class D	Bone, glass, silver, gold, stone, ceramics	Keep wet and desalinate. Glass stability variable and inconsistent

The recovered artifacts have been classified according to the above table and the breakdown is as follows:

Class	%
A	4
B	7
C	73
D	16

80% of all the artifacts have been allowed to air dry and little more can be done to stabilize them other than surface cleaning and treating with microcrystalline wax to prevent water absorption. They will need to be stored in secure post treatment suites. The material being held in passive storage needs urgent attention.

The 20% of artifacts that are being held in water passive storage are 88% in categories B & C and have been held in this way for many years. The water has become contaminated with chlorides and corrosion salts that have been leached out. Each artifact needs to be assessed and surface cleaned in fresh water and placed in a clean water tank for at least a month at which point the water needs to be chemically analyzed to assess if chlorides are still being released. If as is expected little added chlorides are found in the water, the artifacts need to be air dried in temperature/humidity controlled conditions. In the right conditions this is a process that can be completed in months

The Conservation Facility required

The container is unfortunately not large enough to provide all the facilities required to work on the artefacts. A secure building needs to be found with floors capable of taking a high floor loading. Power, fresh water and drainage are also required. There should be four functional zones within the conservation facility.

1. Handling and wet storage facilities

- Convenient loading bay
- Mechanical lifting equipment
- Quarantine area
- Cleaning table
- Dry photographic and recording area
- Fresh water storage tanks

2. Treatment Area

- Convenient access to wet storage
- Mechanical lifting equipment
- Treatment tanks

3. Laboratories

- Microscopy area
- Chemical analysis area
- Conservation records
- Laboratory work bench
- General store area
- Spirits and corrosive stores

4. Post Treatment Suites

- Organic: RH 55% temp 18°/20°C
- Inorganic: RH 40% temp 18°/20°C

Immediate Priorities

It is recognized that such a conservation facility is not going to be found immediately. It is however not such a daunting challenge. In Ramsgate, MRAS with the East Kent Maritime Trust have built such a facility, using two long sea containers welded together, with the internal walls removed, reinforced floors and with a separate portacabin as a laboratory.

Would it be possible to get power to the container and install metal racking and a dividing wall to create an organic and inorganic store? A humidifier and a dehumidifier would need to be installed to maintain constant environmental conditions.

Can another building or another container be found to act as a wet store for the finds that have yet to be treated?

This is not part of our brief but considering other such projects including our own experience at the Mary Rose Trust, it is necessary to get organized. Maritime archaeological projects are multi-disciplinary and as mostly they are supported by volunteers it is necessary to publicize the project to attract interest. The objective is to motivate a group of local people to use their initiative to help with everything from fundraising to organization to hard labour. Although this is a mature project there must be many in West Wittering who would love to get involved.

All of this going to take some time and we have to think about immediate plans. Mark Jones and Paul Simpson are the nominated conservators and will advise.

Until a conservator is on the team and a conservation facility is acquired we need to concentrate on the items that are being held in passive water storage.

Passive storage

Generally all marine finds should be kept immersed in sea-water until a storage and conservation strategy can be formulated.

Ideally:

- Maintain water saturation at the same level as when recovered
- Be compatible with future analysis requirements
- Be compatible with conservation treatments
- Prevent further corrosion of metals
- Prevent further decay of organics

Desalination

All marine finds require desalination to remove sea salts that have been absorbed by both organic and inorganic material. This is an essential process that takes place before the object undergoes active conservation. It is a process that ideally requires copious amounts of fresh water and constant monitoring to

record the diminishing levels of salts and can take many months and in some cases years.

The *Hazardous* finds that are still being held in passive storage have been immersed in water for, in some cases nearly twenty years. The probability is that all the chlorides have by now been leached out. However this needs to be double checked. All the artifacts need to be immersed in clean fresh water and salination checked in four weeks.

Cost analysis

These costs are based on using voluntary labour & begged, borrowed, second hand & recycled materials. MRAS can help with finding some of this. Nevertheless a budget will be required for chemicals and consumables which need not cost more than £500.

In addition the units will have to be fitted out.

Creation of wet handling area	£800
Humidity control Units	£700
Shelving for storage	£800
Power and lighting for container	£300
Dividing wall and tidy up	£400
Conservation advisors	£1500

This comes to £5000 which does not include the cost of a building or storage facility [container?]. For this cost all the artifacts from HMS Hazardous could be stored in conditions which could ensure there longer term survival and be made available for the public to see.