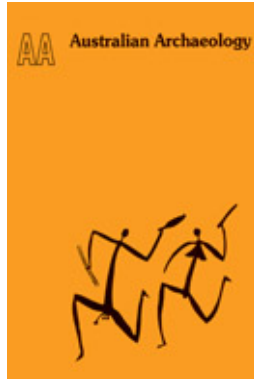


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THE V.O.C. SHIP *ZEEWIJK* LOST IN 1727

A preliminary report on the 1977 survey of the site

Catharina Ingelman-Sundberg

Introduction

An account of the loss of the V.O.C. (Verrenigde Oost-Indische Compagnie) ship *Zeewijk* (1727) and a report on the first season of investigation of the site has already been published (Ingelman-Sundberg 1976, Ingelman-Sundberg 1977). This paper is a report on the 1977 survey which deals with the hydrographic, land and underwater surveys and excavation work carried out during the 1977 expedition.

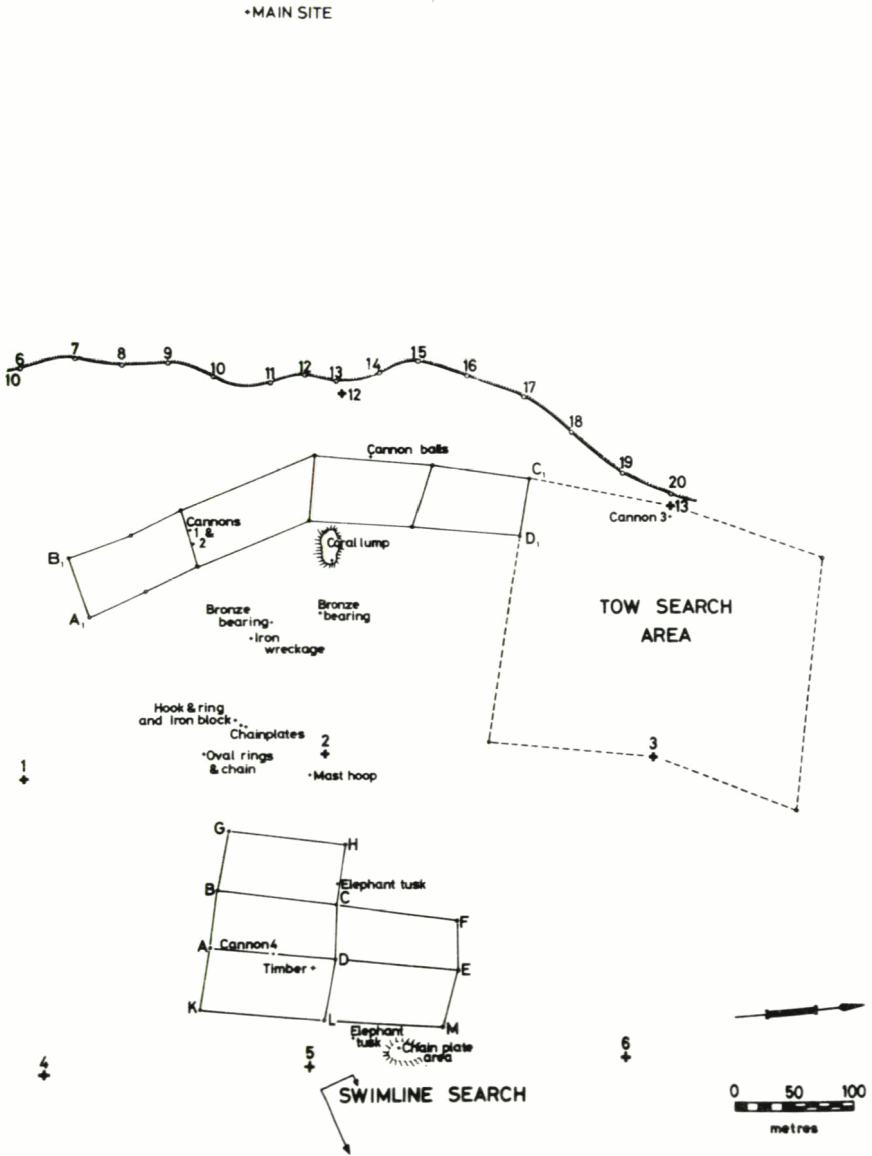
A brief background to the *Zeewijk* project

At dawn on 9 June 1727, the V.O.C. ship of the Chamber of Zeeland, *Zeewijk*, struck the northern end of Half Moon Reef on the Houtman Abrolhos, which is situated about 64km from the mainland. Soon after the disaster, the *Zeewijk* crew managed to get to a nearby island, known today as Gun Island. Here the survivors found freshwater and from the wreckage of the ship and mangrove trees on nearby islands, they managed to construct a vessel which they sailed to Batavia in the Indies. This vessel took 8 months to build, was called the *Sloepie* and she carried 82 of the original crew of 208 to safety.

Left behind were the remains of the wreck and the castaways' campsites on the island, and the graves of those who did not survive. The old *Zeewijk* encampments were first encountered in 1840 and during the guano industry in the 1880s and 1890s a large collection of *Zeewijk* material was recovered from the island and brought to the Perth Museum (on display today at the Fremantle Maritime Museum). The *Zeewijk* main wrecksite was located by the author and journalist Hugh Edwards in 1968.

In 1976 the Maritime Archaeology Department of the Western Australian Museum, financed by an Australian Research Council grant, initiated the *Zeewijk* project. The *Zeewijk* main site on the outside of Half Moon Reef and main concentrations of wreck debris on the inside reef were plotted. A land survey of Gun Island was made to accurately map the topographical features and areas of archaeological interest. In addition a series of 89m² testholes were dug on the western side of the island in an attempt to locate the remains of the *Zeewijk* survivors' campsites. Surveys of the inside reef and main wrecksite were made and an artefact collection program was made in a systematic manner on the inside reef.

Figure 1 Underwater survey areas on the inside reef. Area A1-D1 was surveyed during the 1976 *Zeewijk* Expedition, area A-M in 1977. The numbers show the position of the star pickets.



The 1977 *Zeewijk* expedition

The 1977 expedition to the site had the following aims:

1. to carry out swimline searches on the inside of Half Moon Reef to locate and map wreckage and debris washed over the reef;
2. to record and survey concentrations of wreck material and to determine the extent and pattern of this material on the inside reef;
3. to continue the mapping and plotting of the *Zeewijk* main site started in the first season;
4. to carry out systematic soundings on the western, northern, and eastern sides of the island to try and locate the launching place of *Sloepie*;
5. to dig 1m² test holes at 10m intervals on the southern and northern end of the island to try and locate *Sloepie*'s shipyard and the *Zeewijk* survivors' campsites;
6. to establish a series of profiles of Gun Island to get an overall picture of the topography of the island today;
7. to make a geological survey of the island to establish its structure, the extent of mined and non-mined areas on the island, and, if possible, to note the possible changes the island has undergone since 1727;
8. to make a biological survey of the flora on the island to establish which edible plants were available for the *Zeewijk* castaways 250 years ago.

Underwater survey

The 1977 expedition continued the underwater surveys on the outside and inside of Half Moon Reef that were initiated in 1976. The techniques used for plotting, recording and recovering were the same as the previous year (Ingelman-Sundberg 1976).

To enable offshore controls in the new survey areas and of the different concentrations of wreck material on the inside of the reef, nine reference points were established at sea. Six of the survey markers (star pickets with bamboo canes and flags) used during the 1976 expedition were re-erected in their original previously plotted positions, and, in addition, three new star pickets (4, 5 and 6) were put up 250m east and parallel to the first two lines of survey markers (Fig.1). In this way the new line of star pickets formed a rectangle with the second line of survey markers. Using a theodolite the new star pickets were

GUN ISLAND

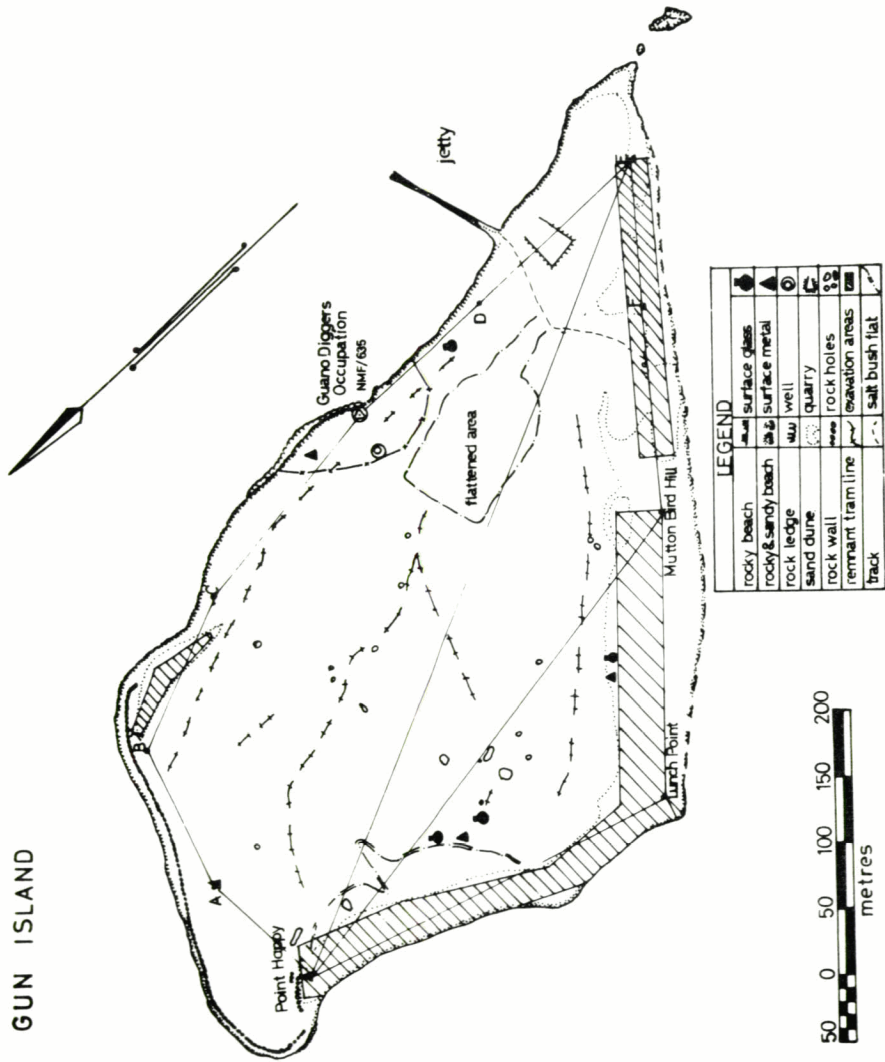


Figure 2 Map of Gun Island showing topographical features, testhole excavation areas, the national mapping survey station NMF/635 and the baseline reference points Muttonbird Hill - Lunch Point.

then positioned and plotted in relation to the baseline (Muttonbird Hill - Lunch Point) on Gun Island (Fig.2). Underwater survey areas and wreck material concentrations situated over $\frac{1}{2}$ km from the reef could thus be located and plotted by taking two horizontal sextant angles between any three reference points in the new rectangle.

The mapping of wreck debris on the inside reef

During the 1976 expedition major wreck material concentrations, a cannon, glass, ceramic and chain plates, were found 800m from the *Zeewijk* main site on the inside of Half Moon Reef, lying on a sandy bottom at a depth of 1.5-2m (area C, Fig.3).

To establish the extent and pattern of the wreck debris in this area, five 50 x 100m underwater survey areas were laid out on the bottom according to Figure 1. The areas were buoyed out and located by taking sextant angles on the star pickets. Swimline teams swam in tracks of 2m intervals plotting the x and y coordinates and type of every artefact found.

Altogether 1662 fragments of glass, stoneware, porcelain and ivory were raised. A test excavation around the cannon and chainplates did not reveal any further finds.

Swimline searches on the inside reef

The inside of Half Moon Reef between the top of the reef and Gun Island covers an area of 4km². Down-current from the *Zeewijk* main site, the wreck debris is scattered in roughly a 300m wide area towards Gun Island.

To establish the extent of this material and to try and locate new major wreck material concentration, systematic swimline searches were carried out from the underwater survey areas down-current towards Gun Island. In addition swimline searches were carried out from star picket 12 to the northern edge of and parallel to the reef. The searches were 30m wide with a diver positioned along the line at every 3m. A boat on the surface mapped the course of the swimline by dropping buoys with sinkers at regular time intervals, or when the course of the swimline changed, or when any finds of significance were encountered. These buoys were later positioned by taking two horizontal sextant angles from the star pickets and/or the nearby islands.

Result of the swimline searches

From 30m south to 30m north of star picket 5, an area 60 x 1300m was covered by swimline searches down-current towards Gun Island (Fig.1).

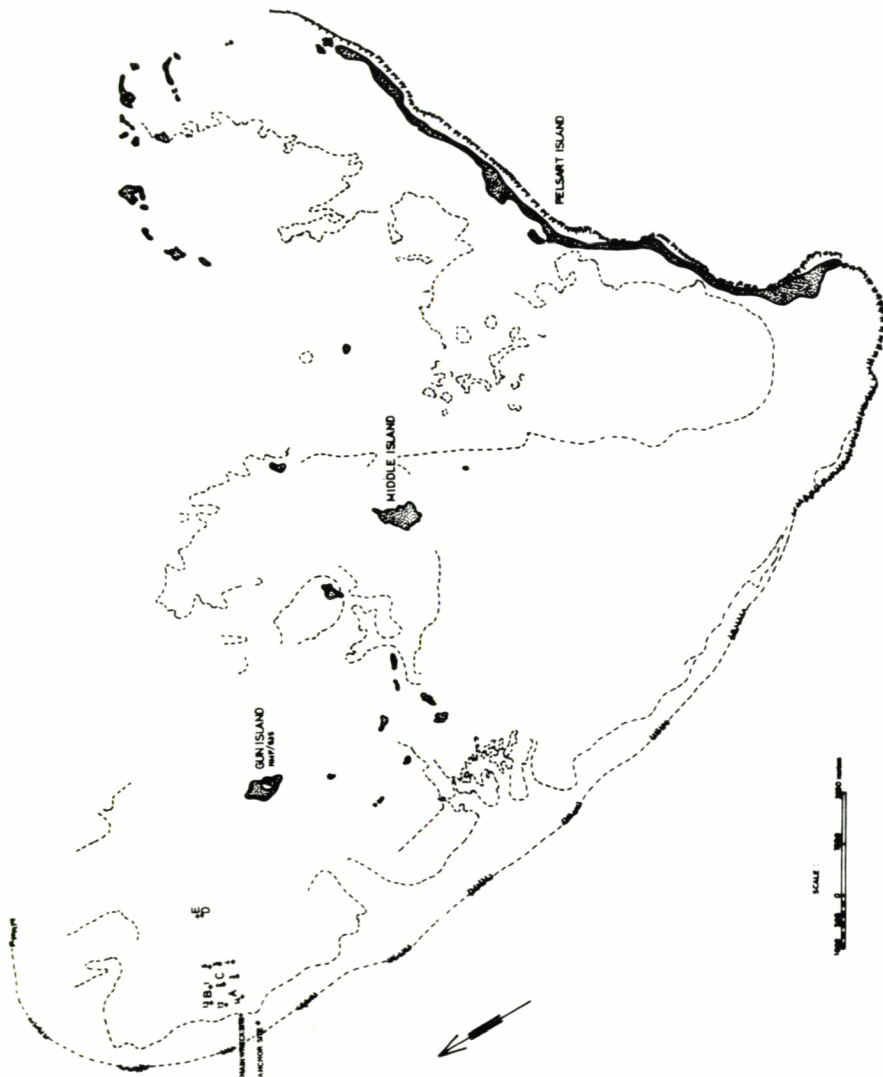


Figure 3 The *Leewijk* site and Gun Island mapped on the Australian Admiralty Chart. The wreck material concentrations are marked A-E, whereas the numbers show the position of the star pickets.

An area approximately 40m wide in the middle yielded a considerable amount of glass and ceramic material, mainly onion and case bottle fragments, wine glasses, tumblers, porcelain and sherds from stoneware jugs. At 800m from star picket 2 and 45m north of area D, a timber area (Fig.3) was encountered. The timbers consisted of an area of outer planking 7 x 10m. So far it is not known whether more timbers may be covered by sand. Nearby there are more timbers and finds of chainplates and a rudder pintle (area D, Fig.3).

East of the timber areas the wreck debris ceases altogether. No finds were encountered and ½km east of the timber area the swimline search was halted.

The material recovered between the outer line of star pickets (4, 5 and 6) and the timber area indicates that part of the stern has been washed over the reef. A further investigation of this area is planned for a forthcoming expedition to establish the extent and identity of the parts of the ship which have come to settle here.

Survey of the *Zeewijk* main site

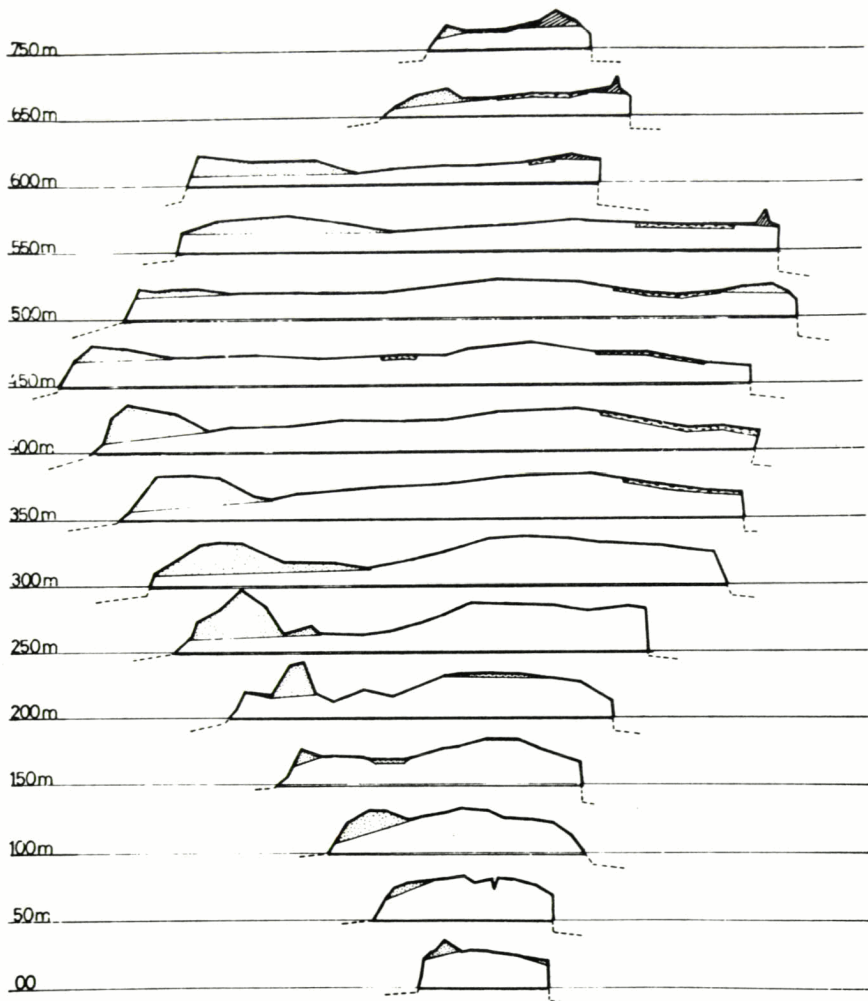
As during the 1976 expedition, the rough seas on the outside reef made any work on the *Zeewijk* main site extremely difficult. It was only possible to dive on the wreck site on two days during the whole expedition. To reach the wreck when the rough seas prevented swimming from the inside reef through the breakers onto the main site, a fisherman agreed to drop equipment and divers on the wreck site from a jet boat.

A set of buoys attached to a main rope with weights dropped from the jet boat, formed a buoy bank which enabled the divers to buoy out the cannon and anchors on the main wreck site. An area 1.5 x 2m was investigated with picks and hammers to establish the depth and extent of wreck material in the coral and limestone bottom. Because of the strong rip and breakers, it was not possible to create any photomosaics of the wreck site.

Result of the survey of the main site

During the 1977 expedition, 17 cannon and seven anchors were located. Seven cannon were located during the 1976 expedition and nine cannon were located earlier on the inside reef (five of them raised in the 1950s and 1960s). Altogether 31 of the *Zeewijk*'s 36 iron and bronze guns have been located.

The test excavation carried out to a depth of 35cm revealed a large number of artefacts; wineglass stems, buttons, coins and



**GUN ISLAND SURVEY
1977**

limestone 
 rock 
 sand 

scale 1:1000
1:100

Figure 4 A series of 15 profiles of the island showing geological and topographical features.
 Scale 1:1000 Horizontal
 1:100 Vertical

bottle fragments. This indicates that there may be a great amount of wreckage buried on the bottom. It is planned to improve the access to the wreck by using a jet boat, which can drop divers directly onto the wreck site. In this way it is hoped to carry out further excavation work on the site in a forthcoming expedition.

Land survey

During the 1976 expedition, Gun Island was mapped and topographical features and areas of archaeological interest were noted. During the 1977 expedition, a series of 15 profiles were established over the island (Fig.4). The lines ran west-east at 50m intervals and an average of 316 readings were taken. The aim was to get an illustrative outline of the island to establish the location of mined and non-mined areas on the island and indicate sheltered spots which could have been used as campsites by the *Zeewijk* survivors. The profiles also served as baselines for the geological and biological survey of the island.

Land excavation

The 1977 expedition continued the test holes excavation initiated the season before (Ingelman-Sundberg 1976:29). This year a series of 1m² test holes was dug at 10m intervals at the northern, eastern and southwestern end of the island.

The first series of test holes ran from Lunch Point to Point Happy. Of 195 holes dug, 45 contained glass, bone, ceramic and metal objects. These productive holes were concentrated in three main areas with sterile ground in between. At the southwestern end of the island a series of 46 holes were dug from Muttonbird Hill to George Point and in addition, on the eastern side of the island a series of 12 x 20-50cm deep test holes were excavated. The holes were all sterile, except for two at the southwestern end which contained seal bones. A 1 x 5m test trench was dug at Muttonbird Hill where the sand went deeper than the average of 60-80cm reached in test holes in other areas. Guano and/or rock was encountered at a depth of 1.70m but the area proved to be archaeologically sterile.

The 'Sloepie' project

One of the aims in the *Zeewijk* project is to locate the *Sloepie*'s launching place and remains of its shipyard.

Previous researchers have suggested different places for the site, Stokes (1846:150) states it was on a nearby islet

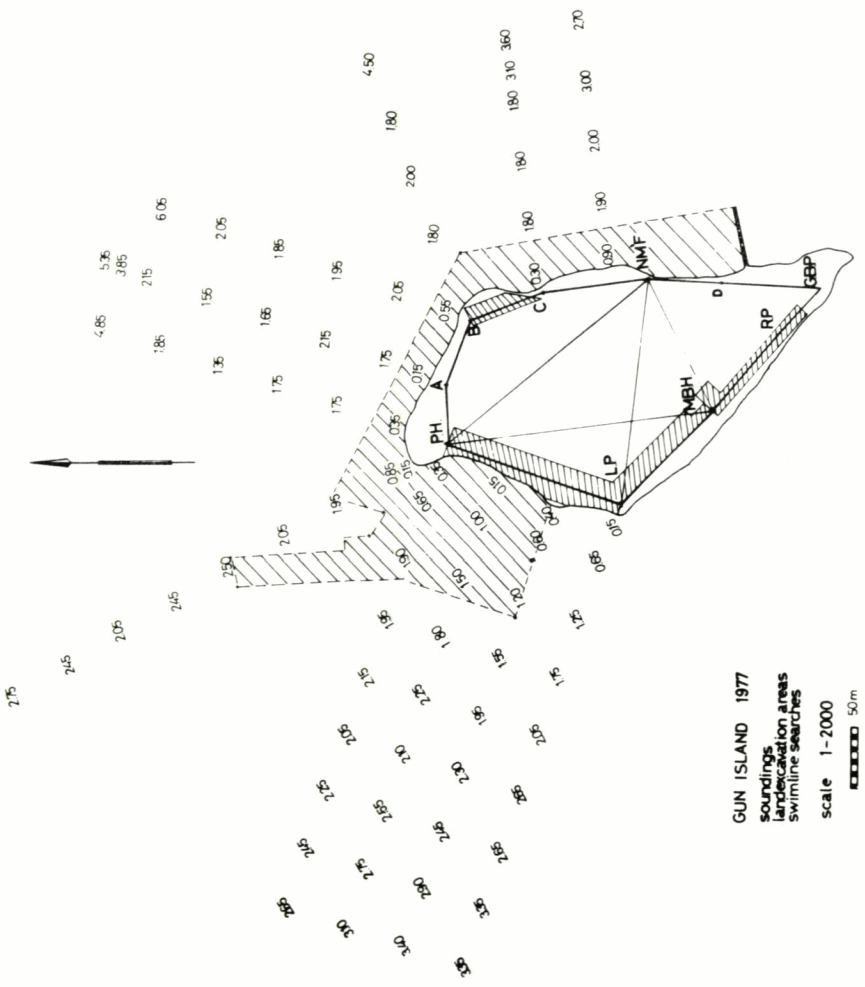


Figure 5 Map of Gun Island showing testhole excavation areas and the swimline searches and soundings outside the island.

ESE of Gun Island; O'Loughlin (1969:11) believed it was on the western side of Gun Island, whereas Edwards (1970) reported it was on the eastern side. Preliminary investigation carried out during the 1976 *Zeewijk* expedition suggested the spot was on the northwestern side of the island.

During the 1977 expedition two suggested alternatives were investigated: the eastern and northwestern end of the island.

Theory I : According to Edwards (1970), *Sloepie's* launching place was on the eastern end of the island where a portion of the cliff has fallen into the sea forming a natural and convenient slope into the water. The arguments that this is the launching place are:

1. it is noted on the *Zeewijk* survivor's map as the location for *Sloepie's* launching;
2. where the cliff has fallen, the break has been filled in with stone packing;
3. iron nails have been found in the area.

Close examination shows that the records of both the skipper, Jan Steyn, and second mate, van der Graeff, do not always describe the spot as indicated on the map. For example, the ship's journal relates how part of the *Zeewijk* crew found wreckage from another ship on the western end of Pelsart Island. Yet, nowhere on the maps are there indications of wreckage found on the western side. Instead the text on the maps mentions wreckage on the eastern side of the island. This could indicate that texts on the maps are not reliable indicators of exact locations of events or features.

During the course of the expedition, the packing on the eastern side was dug out. Underneath the area of stone packing (about 1.6m high and 2.4m wide) 19th century artefacts were found. It is not likely that this 19th century glass and iron material had fallen through the stone packing, thus indicating that the packing might originate from the guano diggers' activities in the 19th century. A surface investigation of the area revealed 19th century glass, nails, and iron fragments. In addition to the land investigation a 90m x 400m swimline search was carried out in the shallows outside the assumed launching place. The only finds were 19th century bottle fragments.

The ship's journal notes that the castaways warped their boat in shallow water. First, they placed the boat in 4ft of water (0.28m), then in 6ft of water, and finally, a quarter of a mile off the island, they anchored her in 9ft of water. On the basis of this information a series of soundings was made on the northwestern, northern and eastern end of the island. Eleven sounding tracks were established from the baselines on the island out at sea. Reading of the depths were taken every 10m to 800m (half a mile) from the shore. A tide gauge was established and related to the national mapping survey mark station NMF/635. Readings were taken three times daily during the expedition. Soundings were then related to the mean value and soundings were

plotted to mean sea level as well as to low and high water mark. Three lines of soundings were carried out at the eastern end of the island in order to compare the depths at the assumed launching place with the depths given in the ship's journal (Fig.5).

The sounding profiles show there is no slope from 4ft to 6ft and then to 9ft of water. At a point 280m offshore the depth already exceeds 9ft. This suggests that according to the ship's journal the eastern side of the island was not the place for the launching of *Sloepie*.

Theory II : The northwestern corner of the island has been suggested as *Sloepie*'s launching place for several reasons:

1. the spot is closest to the *Zeewijk* wreck site, convenient for the loading and unloading of timbers from the wreck;
2. it is sheltered from the prevailing winds in the area;
3. the spot is convenient for launching a vessel on rollers and then into deeper water (van der Graeff, 26 March 1728: 93);
4. the ship's journal (3 March 1728) relates how the ship was taken around the NW corner of Gun Island to avoid a small reef which extends westward of the NW corner of the island.

To test this hypothesis, further excavation, soundings and swimline searches were carried out.

Test excavation

A 1 x 60m long test trench was dug along the beach at the northwestern corner of the island, while the test hole excavation from Lunch Point to Point Happy covered the area higher up.

Along the shoreline 269 fragments of nails and iron fragments were encountered. In addition three 18th century glass fragments were found. In many cases it is difficult to establish the age of the nails and iron fragments and it is likely that some of the material stems from the guano period or more recent wreckage in the area. Further inland, the test hole excavation revealed 18th century glass and ceramic pieces as well as nails and iron fragments, found in context with datable 18th century material. In test hole no.188, pitch was found at a depth of 20cm in association with iron nails, barrel hoops, 18th century bottle fragments and fragments of a wine glass.

Swimline searches

Swimline searches were carried out parallel to the base line from Lunch Point to Point Happy. Altogether a 45,000m² long area

was covered outside the northwestern side of the island. Opposite the test excavation area and 80m from shore, two mast caps and an 18th century stoneware sherd were found.

Soundings

Five lines of soundings were carried out every 100m from Lunch Point to Point Happy running from the shoreline 800m out at sea (Fig.5). The sounding profiles show a depth curve corresponding to the information given in the ship's journal.

At this stage it is too early to state where *Sloepie* was launched until all the suggested alternatives have been checked and *Sloepie*'s shipyard has been found. However, from the information gained so far it seems that the northwestern end of the island, not the spot indicated on the map, is the *Sloepie* launching site. It is hoped that further land excavation will indicate whether the find spots on the northwestern end of the island are remains from the *Zeewijk* survivors' campsites and/or *Sloepie*'s shipyard.

Geological survey

The geology and geomorphology of Gun Island were investigated by mapping along lines 50m apart and perpendicular to a base line from point E (1976 surveying) to Point Happy. This work was carried out along the 15 survey lines used for the cross-section profiles of the island. In addition the wells on the island were inspected and the water tested. A more detailed report will be published separately by J.S. Moncrieff. Suffice it to say here that the island is consolidated coral limestone partly covered with sand, guano, soil and a thin crust of shelly limestone. The water in well 20 (the only one filled with water during the course of the *Zeewijk* expedition) contained water of 4000mg/l total dissolved solids. Drinkable water is 3000mg/l total dissolved solids.

Biological survey

During the biological survey a total of 21 5 x 5m quadrats revealed a total of 23 species. Samples were taken covering the flora of the whole island. Four to five species are suspected to have been introduced after the *Zeewijk* wreck, probably by the guano diggers. The majority of species are indigenous and were on the island at the time of the *Zeewijk* disaster. One of these is edible and is found on the southern and western parts of the island.

A more detailed report on the biological aspects will be published separately (M. Staniford).

Conclusion

As a result of the 1977 *Zeewijk* expedition it was possible to further map and plot the scattered *Zeewijk* wreck. On the outside reef 17 cannon and seven anchors were located on the main site. On the inside reef between the outer line of star pickets and Gun Island and around the island itself, 162,000m² were covered by swimline searches. As a result of the swimline searches part of the *Zeewijk* structure was encountered in the timber area near Area D. It is believed this area might contain material from the stern section of the ship. An area of 50,000m² around Area C was surveyed. Artefacts found were raised and plotted. Altogether 1739 finds were registered from the underwater survey.

On land 162 1m² test holes were dug at 10m intervals on the northern, eastern and southwestern end of the island, indicating three areas previously occupied by the *Zeewijk* survivors. An attempt to locate the *Sloepie*'s launching place was initiated and two of the suggested alternatives were examined - the eastern and northwestern end of the island.

The present plan is to continue the project as follows:

1. continue the mapping of the main site;
2. continue the inside reef survey and (a) excavate a 50m² area around the timbers encountered in the vicinity of Area D, (b) try to gain further information about the distribution of wreck material;
3. begin detailed land excavation in the productive test areas to establish whether the finds originate from actual campsites or 19th century spoil areas from the guano industry;
4. carry out land surveys on the nearby islands to determine the *Zeewijk* survivors' activities in these areas;
5. continue the investigation of possible areas for *Sloepie*'s launching place;
6. with the help of 18th and 19th century archival material, to look for the activities of both the *Zeewijk* survivors and of guano diggers on the island.

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References

- de Heer, C. *The Wreck of the East-Indiaman Zeewijk at the Abrolhos Island in the year 1727. A short translation of the ship's journal with a short introduction and notes*
- Lort Stokes, J. 1876 *Discoveries in Australia.* London, vol.II
- Ingelman-Sundberg, C. 1976 The V.O.C. ship *Zeewijk* 1727 - report on the 1976 survey of the site. *Australian Archaeology* 5
- Ingelman-Sundberg, C. 1977 *The Relics of the Dutch East-Indiaman Zeewijk foundered in 1727.* In press