

ENVIRONMENTAL INSPECTION, GOUGH ISLAND WILDLIFE RESERVE,  
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SUMMARY OF RECOMMENDATIONS

- As a precaution, pest control should be carried out in the PWD store.
- The immediate area surrounding the PWD store should be swept regularly to remove loose sand and propagules. Weeds in the paved area should be treated with an effective weed killer.
- The question of the effective use of rat-guards on ship's lines in port requires attention.
- An effort should be made to reduce the size of the proposed new helipad structure at Gough; air force personnel should be consulted as to their minimum requirements for safely handling cargo, personnel and the aircraft. A small, removable wind-sock should be installed.
- Although the single-line aerial running W-E from a mast near the south corner of Gough House to another mast north of skivvygat is still used periodically, this aerial is a high priority for removal.
- The scaffolding supporting the water-tanks should be replaced with a low maintenance structure similar to that used for the telecommunications dish.
- All wood-framed catwalk units should be replaced systematically with galvanized metal-framed units.
- If sandblasting of the fuel tanks takes place the tanks should be tented to prevent the spread of abrasives and fragments of paint, rust and metal into the surrounding vegetation. These materials must be collected and returned to South Africa.
- The options for a fixed, more durable ship-to-shore fuel pipe need to be investigated further.
- A spill tray should be mounted below each of the generator engines to catch spillages of oil and fuel.
- Only washed potatoes should be imported to reduce the risk of introducing nematodes to the island.
- Steps should be taken to ensure there are sufficient containers to remove all wastes from the island.
- Rope ladders used at several locations on the island should be maintained in a good condition to prevent personnel using routes that may lead to erosion.
- New team members should be instructed on the biota of the island during their training in Pretoria or before their departure from Cape Town by conservationists and/or biologists with experience of the island.

## INTRODUCTION

I visited Gough Island during the relief voyage of the South African naval supply ship *SAS Drakensberg* during September - October 1996 to carry out the sixth annual Environmental Inspection on behalf of the Tristan da Cunha Government and the United Kingdom Foreign and Commonwealth Office.

To relieve the Gough 41 team the *SAS Drakensberg* was chartered by the Department of Environmental Affairs and Tourism (DEAT) as the *S.A. Agulhas* experienced mechanical problems causing several delays. The *SAS Drakensberg* sailed from Cape Town on the evening of 27 September and arrived off Tristan da Cunha on 1 October where she off-loaded passengers and cargo. Whilst at Tristan da Cunha I had the opportunity to discuss matters regarding the implementation of the Management Plan (Cooper & Ryan 1994) with the Administrator, Mr. Brendan Dalley. The Tristan Agricultural Officer, Mr. Derrick Rogers, joined me as co-Environmental Officer. The *SAS Drakensberg* sailed from Tristan da Cunha on 4 October arriving at Gough Island on 5 October, off-loading all personnel and some cargo. More cargo was off-loaded on 6 October and numerous containers with waste were shipped back to South Africa. The *SAS Drakensberg* sailed for South Africa on 6 October.

The *S.A. Agulhas* arrived at Gough Island on 14 October when more cargo was off-loaded. Due to adverse weather it was decided that no fuel would be pumped shore and she sailed from Gough Island on 15 October to deploy several weather buoys in the South Atlantic, returning on the morning of the 15th when the pumping of fuel began. Support personnel and the outgoing team were airlifted from the island on the afternoon of the 19th and we sailed for Tristan da Cunha on our return voyage to Cape Town. On 20 October I had a brief discussion with the Administrator informing him of my impressions about the activities on Gough Island. We sailed from Tristan da Cunha on the 22nd docking at Cape Town early on 27 October.

## WAREHOUSES IN SOUTH AFRICA

Unannounced inspections of the stores and warehouses at Paarden Island, Wingfield and 'A' berth were carried out before loading began.

### *Paarden Island: Department of Environmental Affairs and Tourism (DEAT) depot*

At this depot food, bedding, clothing and machinery (for Antarctica) are housed. Considering the inadequate facilities the depot is well maintained and clean. No signs of rodents were observed. Most of the 21 bait stations strategically placed in the store by the SWAT Pest Control company were seen. A copy of the SWAT Co. service report dated 29 August 1996 is attached. I observed no signs of rodent activity anywhere in the stores.

I was satisfied with the manner in which the food was repackaged. An effort is clearly being made to reduce the amount of packaging materials to a minimum. The containers in which the supplies are shipped were all stacked inside the store and were found to be generally clean inside and out. I was assured by Mr. Oosthuysen that all containers would be pressure-hosed before loading.

### *Wingfield: Public Works Department (PWD) depot*

The depot and its surrounds are described by Wace (1996). At the time of my inspection all the containers and other materials that included wood and metal beams due for shipment to Gough Island were housed on a concrete floor inside the store. Although the containers were dusty outside there were no obvious signs of soil or propagules attached to them. I was assured by Mr. Parker that the containers would be hosed down before being shipped to the harbor. The store itself was found to be reasonably tidy and although no rodent control is carried out in this store I did not find any evidence suggesting these animals to be present. However, as a precaution it is **recommended** that pest control be carried out in this store.

Paving outside the store was found to be sandy with weeds growing between the concrete slabs and in cracks. It is **recommended** that the immediate area surrounding the store be swept regularly to remove loose sand and with it possible propagules. It is furthermore **recommended** that weeds in the paved area be treated with an effective weedkiller.

#### *'A' berth dock warehouse*

On the day of departure I visited the 'A' berth dock warehouse from where cargo destined for Tristan da Cunha was loaded. The warehouse was found to be reasonably clean. No rodent control system was found to be in place but the personnel assured me that no rodents had been observed in the store during recent years. Three crates of live chickens and three bags of chicken food destined for Tristan da Cunha also was stored here. No sign of recent activity at this likely food source was observed which suggests that the warehouse was indeed free of rodents.

#### *SAS Drakensberg at 'A' berth*

Before sailing from Simonstown I spoke to Captain Myers by phone inquiring about a rat-free certificate for his vessel. No certificate could be produced but he assured me that his vessel was free of rodents. On the outgoing voyage I spoke to several crew members inquiring about rodent activity on the ship; all assured me that the vessel was free of these animals. A small amount of chicken food was spilled in one of the cargo holds. I inspected this spill as well as the bags containing the food several times but did not notice any rodent activity at this likely food source.

I furthermore requested Captain Myers to ensure that ratguards be fitted to the securing lines whilst docked in Table Bay harbor. Although he agreed to do so it was not done, presumably because the securing lines had to be doubled. This appears to be a common practice in Table Bay harbor due to tidal action and the frequent adverse weather conditions.

## THE METEOROLOGICAL STATION

An initial inspection of the station and surrounds was carried out by the Voyage Coordinator, the Tristan Agricultural Officer, the leader of the Public Works team, the leader of the outgoing meteorological team, the ship's doctor and myself. The buildings and surrounds were found to be extremely tidy and it was apparent that a significant effort had been made to keep the base in this condition.

The team said that they managed to keep mice out of Gough House and had not seen any evidence of rats. One of the team members evidently trapped and destroyed more than 240 mice outside the buildings during the year.

Twenty-six persons remained on Gough Island for the duration of the takeover (5 October - 19 October) and were affiliated as follows:

South African Department of Environmental Affairs and Tourism (DEAT) .....	1
South African Department of Public Works .....	6
South African Air Force Radio Technicians .....	2
Outgoing Meteorological Team .....	7
Incoming Meteorological Team .....	6
Minister of Religion .....	1
Chef .....	1
Environmental Inspectors .....	2

Three further members remained on the island from 14 to 19 October. They were affiliated as follows:

South African Department of Environmental Affairs and Tourism .....	2
South African Weather Bureau .....	1

A number of members from the South African Air Force team came ashore for short visits. Whilst most of the visitors remained at the station, a small group was escorted on a walk to the Admirals by one of the outgoing team members, none slept ashore.

### *The environment around the buildings*

A closer inspection of the logistics zone confirmed my initial view that the environment had been well looked after. A small amount of unused metal, old roof sheets, pipes, old catwalks and rotten wood beams had, however, accumulated under the emergency base. There was no evidence of oil leaks from the generator huts or fuel stores but a cracked stopper in the sewage/water overflow system below the balloon hut caused a slow leak of mostly clean water into the surrounding vegetation. The vegetation, however, appeared not to have been adversely affected. The stopper was immediately replaced.

No new introduced plant species were observed. I asked the Gough 42 team to continue removing especially *Sonchus oleraceus* and *Stellaria media* plants from the area around the base.

## EXISTING STRUCTURES

### *Helicopter Pad*

The helicopter pad will need to be refurbished as soon as possible as the wood is very slippery when wet and had become a danger to both the helicopter and personnel whilst working on the structure. It is **recommended** that the air force personnel be consulted as to their minimum requirements needed for safely handling cargo, personnel and the aircraft. I also **recommend** that an effort should be made to reduce the size of the structure when being rebuilt. Having had discussions with the pilots it is **recommended** that a small removable wind-sock be installed at the helicopter pad to indicate the direction and wind strength at the site.

#### *Upper Magnetometer Hut foundations*

The site is now completely overgrown with several native and alien plants species. No sign of any of the weedy species introduced in the sand used for constructing the foundation was observed.

#### *Aerials*

The necessity for maintaining all the aerials in the logistic zone remains a somewhat controversial issue. Following the recommendations made in the previous report the V-beam system has been dismantled and removed. The radio technician of the outgoing team was adamant that the single-line aerial running W-E from a mast near the south corner of Gough House to another mast north of skivvygat is still being used periodically. Should this aerial prove to be superfluous during the next year it is strongly **recommended** that it be removed during the 1997 takeover.

Flags were to have been fitted to the aerial stays but no small clamps were available to do so. Small Crosby-clamps are needed for this task and should be supplied and fitted during the 1997 takeover.

#### *Water-tank structure*

The water-tank structure is an unsightly and unstable entanglement of pipes that was further strengthened during the past takeover. It is **recommended** that the scaffolding be replaced with a neat low maintenance structure similar to that used for installing the telecommunications dish.

#### *Catwalks and staircases*

The wooden frames of numerous catwalk units were found to be badly rotten and presented a danger when not careful. It is **recommended** that all wood-framed catwalk units be replaced systematically with galvanized metal-framed units which in the long term would save costs and present less of a danger to personnel. Broken catwalk units and several staircases were fixed or replaced during the takeover.

#### *Fuel tanks*

Concern was initially expressed as to the condition of the fuel tanks as several showed signs of corrosion. It had, however, been determined that the tanks are still in an excellent condition but needed some maintenance. It was suggested by the leader of the PWD team, Mr. G. Rocha, that the tanks be sandblasted and painted with a cold galvanizing paint to prevent further rust. An area 1 m<sup>2</sup> had been properly prepared and painted as a trial. If sandblasting is to take place it is **recommended** that the tanks

be tented to prevent any of the material necessary to carry out the task ending up in the surrounding vegetation. As much as possible of the stripped paint, rust and sand must be collected and returned to South Africa for proper disposal.

#### *Generator room*

It was evident that small amounts of oil and fuel are periodically spilled on the generator room floor. It is **recommended** that when the generator engines are replaced, which I understand is to take place within the next two to three years, the floor be covered with a suitable material that can be cleaned should a spill occur. At the same time a spill tray should be mounted below each of the engines.

### IMPORTS OF CONSUMABLES

#### *Food*

The following fresh foods were off-loaded: potatoes, onions, garlic, baby marrows, pumpkins, cucumbers, tomatoes, oranges, apples, pears and paw-paws. Following the recommendations of previous reports, no fresh leafy vegetables were imported. Apart from the cucumbers that arrived mushed (probably due to freezing) and the unwashed potatoes, all the fruit and vegetables appeared clean during inspection. It is **recommended** that care be taken to import washed potatoes only to reduce the risk of introducing unwanted nematodes to the island.

Eggs and properly packed frozen meat also came ashore. Only deboned chicken was imported to reduce the risk of introducing avian diseases. All other foodstuffs arrived properly packed in koskassies.

#### *Fuel*

Polar diesel fuel was pumped ashore on 18 October. No breakages occurred in the floating fuel line, but a few minor leaks occurred at the couplings ashore. Containers were placed under the leaks. Having completed pumping the 121 000 liters of fuel, approximately three liters of fuel was measured in the drip containers. I estimated that less than 500 ml of diesel was spilled on the rocks and pools on the cliff. No spillage into the sea could be noticed from the cliffs. I **recommend** that the ideas put forward by Wace (1996) with regards to a fixed more durable fuel pipe be investigated further.

### WASTE MANAGEMENT AND POLLUTION

#### *Solid wastes*

Waste bins were set out outside the kitchen, in the bathroom, games room and elsewhere on the base, segregating biodegradables, glass, plastic, metal and burnables. These segregating bins were appropriately used during the take-over period. All metal cans were crushed using an electric compactor. The compacted tins as well as plastics were packed in unused koskassies and were stored outside the emergency base. The koskassies that accumulated during the year were all packed into 'Waste-tech' like containers. Glass was dumped directly into one of the containers. All the accumulated waste was shipped back to South Africa. Biodegradable waste is still being dumped into skivvygat. Burnables are

disposed of in a closed incinerator, the ashes being collected, properly packed, and returned to South Africa.

Other solid wastes generated are small amounts of aluminium oxide pellets periodically used in the generation of hydrogen. These pellets were also stored in plastic bags inside koskassies and returned to South Africa.

All the scraped building material accumulated underneath the emergency base was removed, bundled and returned to South Africa. I gave permission to construct a small open incinerator on the site of the now removed open incinerator to burn a small amount of wood offcuts, because all the available containers were full. The fire was guarded whilst burning continued and surrounding vegetation wetted to prevent any possible damage. This temporary open incinerator was removed after the task has been completed. However, I **recommend** that steps should be taken to ensure there are sufficient containers to remove all wastes from the island.

#### *Liquid wastes: sewage, waste water and oil*

The systems whereby sewage and waste water effluent is being piped into skivvygat remains unchanged. The end of the line had been extended down the hole for more than four meters as was recommended by Wace (1996). During strong winds, however, a small amount of gray water is still being blown out of the hole. The alkaline potassium hydroxide sludge, photographic chemicals and old oil were found to be properly containerized and returned to South Africa.

## THE ENVIRONMENT AWAY FROM THE LOGISTICS ZONE

### *Tracks to Seal Beach and the Admirals*

These tracks were barely visible on arrival but are certainly the most heavily used during take-over periods. I advised the incoming team to avoid eroded paths and to seek alternative routes where possible. It is **recommended** that the rope ladders used at several locations on the island be maintained in a good condition to prevent personnel using routes that may lead to erosion.

### *Tracks to South Peak*

I walked up South Peak via Ruin Ridge and returned via the 'Golden Highway'. I found the path up Ruin Ridge not as badly eroded as certain parts along the 'Golden Highway.' Although both paths were little used by the Gough 41 team, little recovery took place. It was suggested to the incoming team that Ruin Ridge rather than the 'Golden Highway' should be used when they go hiking. It was further suggested that alternative routes be sought in areas where the path is badly eroded.

### *Marine*

I did not see any pollution at Seal Beach, the Admirals or at Sophora Glen. The Gough 41 team, however, reported plastic bags originating from a Tristan Investments vessel on the beach at Capsize Sands. No oil polluted birds or seals were observed during the year by members of Gough 41.

Mr. D. Ball (radio operator) contacted eight vessels near Gough Island during the past year. These were all passers-by. Conversations between two vessels, presumably of oriental origin, were overheard on 12 May, possibly seeking shelter in the lee of the island. An effort was made to establish communications with these vessels but received no reply. The vessels apparently had departed by the morning of 13 May.

#### RESEARCH ACTIVITIES

Long-term monitoring for Mr. J. Cooper on the breeding dynamics of the Yellow-nosed Albatross *Diomedea chlororhynchos* colony west of the base continued. This project will be continued by Mr. P. van der Wal of the Gough 42 team. Several breeding birds in this colony were ringed during the take-over period. Eight Wandering Albatross *D. exulans* chicks in the monitoring colony on Tafelkoppie were ringed. This ongoing project is also supervised by Mr. J. Cooper.

One hundred Subtropical Fur-seal *Arctocephalus tropicalis* pups on the beaches in Transvaal Bay were weighed 30, 60 and 100 days after birth as an ongoing project supervised by Dr. M. Bester of the Mammal Research Institute, University of Pretoria. A count of Southern Elephant Seals *Mirounga leonina* on the eastern coastline was also conducted for this body.

Nine *Phyllica arborea* and one *Sophora microphylla* samples were prepared by me for Mr. J. Richardson. Mr. Richardson is a Ph.D. student at the University of Edinburgh but is conducting his research into the biogeography of these plants at the Royal Botanic Garden, Kew.

The necessary permits for all these projects were obtained from the Administrator, Tristan da Cunha.

#### CONCLUSION

I visited Gough Island for the first time in 1979. After an absence of 16 years I was pleasantly surprised to see how little things have changed on the island. Also no marked alterations of the vegetation surrounding the structures within the logistics zone could be detected. It is quite clear that the teams are aware of their responsibilities on the island. I also have to congratulate the Department of Environmental Affairs and Tourism for their efforts in trying to fully implement the Management Plan and the many recommendations made annually by the Environmental Inspectors. It is important that this vigilance be maintained. Team members are mostly not scientifically trained and have no or little knowledge on the natural biota of the island. I therefore **recommend** that they are instructed on the biota of the island by conservationists and/or biologists well-versed in the biology of the island during their training in Pretoria or before their departure from Cape Town. In addition, a short lecture stressing the conservation importance of the island should be made to personnel visiting for the take-over period.

#### ACKNOWLEDGMENTS

I am grateful to Dr. P.G. Ryan, Secretary of the Gough Island Wildlife Reserve Advisory Committee, for inviting me to undertake the inspection. I am also grateful to members of the relief party at Gough Island for their assistance, in particular Mr. Sam Oosthuysen of the South African Department of Environmental

Affairs and Tourism, Mr. G. Rocha and his team of the Department of Public Works, and members of the Gough 41 and 42 teams for their cooperation.

#### REFERENCES

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