South Georgia Association Newsletter

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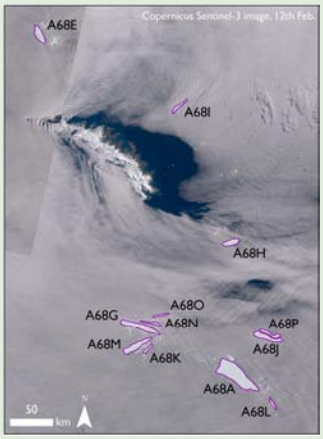
RRS James Clark Ross re-supplying the base at Bird Island in December 2019

In this extended goodbye to RRS *James Clark Ross* issue: Chris Elliott, Geraint Tarling, Jo Cox and Paul Rodhouse reflect on their time on JCR; latest on the A68 giant iceberg; fishing in the time of Covid; Ian Hart's new book on whaling; a year at King Edward Point; the Duke of Edinburgh's visit to South Georgia.

Final goodbyes to the RRS James Clark Ross (pages 6-10)



Large A68 iceberg threatens South Georgia (page 2)

A year at King Edward Point (page 4-5)

*Fishing in the time of Covid (pages **12-13**)*

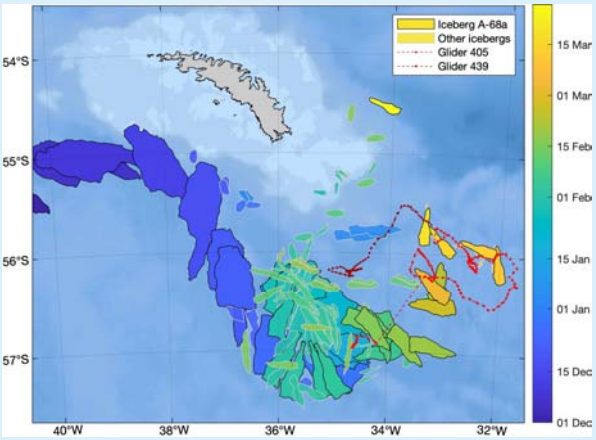
The South Georgia Association AGM will be held on Friday May 7th via Zoom.

A68: the giant iceberg that threatened South Georgia

Povl Abrahamsen, BAS

In recent months, the seas around South Georgia have seen some new visitors: iceberg A-68A and its offspring! Iceberg A-68 was calved from Larsen C Ice Shelf, on the east coast of the Antarctic Peninsula, in 2017. After slowly drifting northward, it started moving rapidly toward South Georgia in late 2020. Amid concerns that it might run aground and affect the ecosystems on the island, plans were laid to study the impact of the iceberg using robotic underwater vehicles, gliders, during a marine science cruise to the area on RRS James Cook in early 2021.

In December the iceberg touched the shelf break south of South Georgia, and a small iceberg, A-68D, broke off. But the main iceberg moved back toward the south, spinning around in the meandering currents of the Southern Antarctic Circumpolar Current Front (SACCF), which recirculates south of the islands, before moving north along the east coast of South Georgia.



Paths of the icebergs and gliders in recent months. The iceberg outlines were traced by Laura Gerrish and Povl Abrahamsen at BAS from satellite images; the latest outline is from 26 March

In January, the iceberg was still in the same area, gradually breaking up into smaller pieces. And by mid-February, there were no less than 16 named icebergs near South Georgia. But even in smaller pieces, such a large amount of melting ice can affect the seas around the islands, adding large volumes of cold, fresh water to the upper ocean. Changing the properties of the water can also impact the ecosystem around the islands, affecting the phytoplankton at the very bottom of the food chain.

After completing the annual "Western Core Box" survey of plankton north of the island, we approached the iceberg from the west on the 13th of February. Our first glimpse of the iceberg, then still around 1000 sq km in area, was in rather gloomy, grey weather.

2nd officer Declan Morrow brings RRS James Cook onto station near the edge of A-68A

The iceberg just seemed to stretch as far as we could see. From the edge of the iceberg, we took a line of casts with the ship's CTD (conductivity-temperature-depth) probe, to measure the ocean conditions around the iceberg and collect water samples for chemistry and biology, before returning to the southern edge of the iceberg the next day, where we made further measurements (this time in rather thick fog) and deployed the first of the two gliders. On the third day, we went around to the north of the iceberg to deploy the second glider near iceberg A-68P, the latest named fragment, and were treated to a sunny day with stunning views of the large icebergs, and the many smaller pieces of ice that had broken off them.

Glider 439 is deployed in front of the icebergs

While the JC211 science team is now back in the UK, and RRS James Cook is sailing north through the Atlantic Ocean with fridges and freezers full of samples to be analysed, the gliders are continuing their measurements. Each glider is about 1.5 m long, equipped with a CTD sensor and a sensor measuring chlorophyll fluorescence (a measure of phytoplankton concentrations). The gliders dive down to 1000 m, propelled by changes in their buoyancy and measuring as they go; between dives they surface and phone back to the UK by satellite, transmitting a subset of scientific and operational data, and checking for updated instructions from the glider pilots at the National Oceanography Centre, in Southampton, and BAS. We hope to recover the gliders in May and learn more about the effects of the icebergs over the next months.

Note: Laura Gerrish & Sally Thorpe (BAS) gave an SGA talk about the provenence and impacts of A68 and the talk is available on the SGA website.

SGA Initiative Fund Award aids RSPB/BirdLife International Project

Sarah Greenwood

In late 2020, the South Georgia Association awarded £750 from the Initiative Fund to RSPB/Birdlife International to assist a Japanese project to save South Georgia albatross.

The greatest threat to albatross is bycatch from fisheries. Whilst South Georgia fisheries have reduced bycatch to negligible levels, distant fisheries still impact albatross greatly. Japan's tuna fleet, which reports thousands of birds killed per year, was identified by British Antarctic Survey and RSPB as being the largest threat to South Georgia albatross. However, in Japan, few people know about albatross or bycatch because it occurs in high seas fisheries far from Japan.

A wandering albatross on Bird Island

RSPB and BirdLife International are working in Japan with the government, tuna supply chain and fishing companies to stop albatross deaths. To build pressure on stakeholders to act, the RSPB and BirdLife International are raising public awareness of the issue through social media campaigns. Direct public engagement increases knowledge of the plight of the albatross, thereby creating and raising a desire to save them, and an understanding of how that can be achieved through bycatch mitigation measures.

Using photos and video from Bird Island, plus Japanese cartoons, Bird Island albatross have been introduced to the public across all social media platforms. They have followed individual birds, held a naming and art competition, and detailed threats and conservation efforts.

The SGA Initiative Fund grants awards of up to £1,000 to support projects that will stimulate awareness of, and interest in, South Georgia and the South Sandwich Islands. Applications are welcome all year round. The Initiative Fund grant for this project will fund an intern in the BirdLife Tokyo office to continue creating social media content for the campaign and to translate RSPB's albatross blog articles for the Japanese audience.

From the BirdLife International office in Tokyo, Yasuko Suzuki, Marine Programme Officer and Hana Saito, Albatross Stories Intern tell us more:

"The word 'albatross' in Japanese means only one species, the short-tailed albatross, which mainly breeds in Japan. So, raising awareness in Japan of other albatross species in the world and the biggest threat they are facing, fisheries bycatch, is critical to protect albatrosses in the Southern Ocean."

"Since the launch of the social media campaign, Albatross Stories, in January 2019, thousands of our followers have been enjoying getting to know the amazing life of albatrosses breeding on South Georgia, through beautiful photos shared by the British Antarctic Survey and informative and fun narratives posted several times every week. Prior to the beginning of the campaign, I seldom used social media platforms. So, my learning curve was quite steep, and I felt the need to receive some help."

"Hana Saito, a university student in Tokyo, joined the Albatross Stories team in summer 2019 as an intern. Since then, she has been a great asset to the team and tremendous help in creating content that is suitable for the public to understand albatross ecology and conservation issues. Public awareness and their desire to help tackle the bycatch problem are essential in applying pressure on the seafood supply chain and the government. Hana is playing an important role in this endeavour. Through the grant awarded by SGA, Hana can continue her work with us. So, I cannot thank the SGA enough for providing the support!"

Hana adds, "Before I started this job, I did not have much knowledge about albatross or bycatch issues. I was surprised to find out that the bycatch problem threatening albatross from South Georgia is deeply related to Japanese fishing vessels, which made me realize how little I was aware of the issue. At the same time, I realized how spectacular and cute those albatrosses are and became very attached to them.

A year on South Georgia

By Meghan Goggins & Kate Owen – the King Edward Point scientists

South Georgia encompasses the essence of Antarctica, without actually being on the continent. Here we have the weather (having a 60 knot gust knock you off your feet is something you don't forget lightly!), the mountains, the snow, but most importantly the wildlife. The wildlife is the main reason we have chosen to live on this remote sub-Antarctic island, and it is what both of our roles here at KEP focus on. The position of this island allows the place to be a concentration of beautiful life, in lots of different forms. For the majority though, it is Antarctic krill that keeps this place thriving. This is where our jobs come in: to study the interactions between the wildlife and the fisheries that operate in South Georgia waters.

In addition to a mackerel icefish and toothfish fishery, there is also the krill fishery. As nearly all the animals that inhabit South Georgia depend on krill for food, it is of the upmost importance that the fishery does not increase competition. Strict quotas are set for this reason, as well as exclusion zones, both spatial and temporal, to protect the animals' feeding grounds. In order to understand the composition and abundance of organisms that are present in the waters, we also conduct plankton trawls every six weeks. This has been continued for the last 20 years, so we have a historical record of how things are changing both seasonally and annually.

Meghan's work as the fisheries biologist helps support the quotas that both CCAMLR and the government place on the fisheries to ensure these remain sustainable. We do this by processing toothfish otoliths (another name for ear bones). As you would age a tree by the number of rings it has on its trunk, you can also estimate a fish's age by the number of rings on its ear bones. In order to 'read' the otolith, you must first embed it in resin, and then cut incredibly thin cross sections so light can pass through. This then allows us to identify the different cohorts that were removed from the fishery, which feeds back into stock assessments and management.

Meghan in the lab working with otoliths

Kate's work involves monitoring the predators, Antarctic fur seals and gentoo penguins, which depend on the krill in South Georgia waters. This means looking at their numbers and breeding success each summer, including weighing a sample of the seal pups and penguin chicks. Kate also studies the diet of the seals throughout the year, collecting scats to measure the size of the krill they are eating and identifying fish from otoliths and squid from beaks. The breeding success of these animals is a good indication of how healthy the krill stocks are in the surrounding waters.

Kate with some fur seals at Maiviken in winter

It's a small team down here at KEP, and we all work together to keep the base running. A team of eleven means you end up learning skills you wouldn't possibly consider in normal daily life. We have learned to drive RIBs and jet boats from our two boating officers, put our first aid knowledge to practice in medical based scenarios by the doctors, and learnt about how we receive energy from the hydro station from the two technicians. Listening to our team talk about their work enhances your understanding daily, and brings you closer on a friendship level. We relax from our daily work duties by organising many social activities such as: volleyball, table tennis and quiz nights.

Volleyball on the veranda at King Edward Point

Midwinter's week was a truly memorable experience, and is one of the highlights of being on South Georgia. With lots of snow to ski, it had a unique Christmas feel even though it was the middle of June! We take the week off our work duties, to enjoy time together and reflect on the time we have had down here so far and what we would like to do before we leave.

The BAS mid-winter team at KEP in 2020 on the new wharf

Snowy sunset on South Georgia: looking towards Cumberland Bay West from Echo Pass.

Now, as we prepare to leave the island it is clear what we knew from the start: that it is a true privilege to work and live on this island. We have met incredible people who are experts at what they do for a living and overcome issues together as a team. There is a sense of nervousness for us all about returning to the UK, as we have never lived in a Covid world. However, working here has given us the confidence within ourselves to know we can overcome challenges and adapt to a different type of life.

The transition from RRS *John Biscoe* to RRS *James Clark Ross*

Captain CR Elliott

The highlight of my thirty-nine years marine service with British Antarctic Survey was being appointed Master of the new build *RRS James Clark Ross* and having the privilege of taking her south for her maiden voyage.

I have on occasion been asked what it was like adapting from the *John Biscoe* to the *James Clark Ross*. The difference, of course, in many ways was enormous but the basic skills required to safely navigate and conduct myself as Master were not so different. So what could be achieved with the JCR that was not possible with the old JB. Let's start with a few basic statistics:-

Captain Chris Elliott

Comparison	***James Clark Ross***	***John Biscoe***
Load displacement	7500 tonnes	2200 tonnes
Length	100 m	67 m
Beam	19 m	12 m
Max draft	7 m	6 m
Dry cargo capacity	500 t + 12 containers	250 t
Total personnel capacity	80	60
Fuel capacity	2000 t + 300 t	400 t

After the 1978/79 season John Biscoe was refitted to conduct deep-sea biological and oceanographic studies, the programme was named the Offshore Biological Programme (OBP). The experience gained over the ten seasons of conducting OBP research from the JB was of great value in the design of research facilities for the new ship.

The James Clark Ross was fitted out not only to conduct the work that had been carried out from the JB but also to undertake geophysical research. The ship was fitted with all the kit necessary to undertake seismic work and to take deep cores from the seabed. The laboratory suite was vastly more extensive compared with the facilities on JB.

RRS John Biscoe in Stanley (pic: Pat Lurcock)

The expansive deck space amidships on the starboard side and aft allowed all manner of different research devices and/or specialist container laboratories to be temporarily bolted down and connected up to hydraulic and electrical power as required. The ship was designed to minimize radiated noise to achieve best results from acoustic equipment. In this regard, as in many others, the design was brilliant as the ship proved to be exceptionally quiet.

The ship from build was fitted with a bow and stern thruster to provide a high degree of maneuverability but also to enable the ship to have dynamic positioning (DP) capability. When the ship was about three years old DP control was fitted and this greatly enhanced the ships capability to conduct various scientific operations that could not so successfully have been carried out without the DP. A few years further on the ship was fitted with a swath bathymetry system to enable seabed mapping. A further great asset for research. From the above I hope I have shown that JCR's scientific research capability was vastly in excess of the modest capabilities on the JB.

The RRS James Clark Ross leaving King Edward Point during its final season south (photo: John Dickens)

The ship also had an important logistic role. The expanding science programme out of Rothera added a logistic requirement that could not be met by the small JB. For Rothera to operate effectively it needed early in the season a large input of personnel, a considerable input of equipment and provisions, gas oil for the base generation and aviation fuel for the aircraft. JCR had the capacity to take in the necessary provisions and equipment to get the season started and a later call would provide further provisions and fuel. The JCR was fitted with bulk aviation fuel tanks, where previously aviation fuel was shipped in drums, this was fast becoming impractical with increased use of aircraft. During JCR's early season call at Rothera around 1500 tonnes in total of fuel, equipment and provisions would be discharged.

In order to re-supply the base, as described, it was first necessary to get there! JCR was designed with an immensely strong hull for working pack ice and had a useful amount of power that could be utilized to force passage in difficult ice conditions. This was aided by a system that could make the ship roll slightly thus helping to reduce friction down the side of the ship. I trust the foregoing illustrates just how capable the design of JCR has been in fulfilling her two principal roles research and logistics in the polar environment.

I hope this article gives a flavour of the transition from John Biscoe to James Clark Ross. I would like to pay tribute to so many people who had a great impact on the success of the ship. I cannot possibly list everyone but let me name a few. Richard Laws, Director BAS as JCR was conceived, Barry Heywood and Peter Barker for their scientific input during the initial period of planning, the BAS team that oversaw the build of the JCR: David Jones, Captain Nick Beer, Andy Baker and John Donnelly. Sadly with exception of Nick Beer the others mentioned are no longer with us. I must also mention all the officers and crew who not only did their job but went the extra mile to ensure the successful conclusion of each logistic and scientific tasking; the many scientists whose enthusiasm and dedication was inspirational and not forgetting the naval architects from Burness Corlet and Wartsila and the builders Swan Hunter, Newcastle.

The maiden voyage of RRS *James Clark Ross*: Baptism of fire in the pack ice

Captain CR Elliott

Having completed runs to South Georgia and Signy the James Clark Ross returned to Stanley to top up with fuel, load some commercially ship equipment and embark personnel for Rothera including the BAS Director David Drewry. Also on board were the Secretary of NERC, Ilene Buttle, Head of Life Sciences, Barry Heywood, and a few other VIPs and guests. There were two options with regard to personnel getting to Rothera, direct by ship or disembarkation at Damoy for onward flight by twin otter. The first option was preferable because the large number of personnel would require 4 to 6 flights to get everyone to Rothera. Of course, the ship at some point had to get to Rothera for the re-supply of fuel and provisions but time wise this was less crucial. The other advantage of the first option was the saving of flying hours and aviation fuel use.

With the above in mind the initial decision was to attempt passage direct to Rothera with all personnel. Pack ice was entered more or less due west from the Argentine Islands and for several hours easy progress was made but as is often inevitable a light wind set in from the north gradually tightening the pack until it was 10/10s and coming under pressure. By late afternoon the ship was beset and drifting with the pack in a SSW'ly direction. Some hours later it was observed that the course of our drift was taking the ship towards a large, grounded iceberg. The ship was heading stern first towards the berg. In order to ensure that the ship would pass to one side of the berg I started ramming the ice stern first in a long series of charges. I had to have complete faith in the strength and design of the ship, for all previous experience was to always avoid as far as possible going astern in ice. However, on this occasion the overriding priority was not to land against the berg. Luckily the progress made worked in that the ship passed the berg at close quarters but safely.

The relief of clearing the berg was soon shattered by the loss of power on one of the two main propulsion motors, thus reducing the ship to half power. For some hours the Chief Engineer, David Cutting and Electrical Officer Norman Thomas investigated the fault and discovered it in one of the plug-in boards (known as gate boards) within the large electronic control cabinets within the motor propulsion room that converted the AC supply from the alternator engine room to a form of DC for the propulsion motors. A fault of this nature had not been anticipated and we carried no spares. However, Norman was quick to realize that the bow thrust control cabinets had identical boards and by disabling the bow thrust full power was recovered to the propeller. By now it was late evening, and our lack of progress was leading to some consideration that we should return to Damoy to commence an airlift of personnel to Rothera. Firstly, of course, we had to extract ourselves from the pack. It was agreed to re-assess the situation in the morning. Throughout the night the ship made steady but slow progress towards the ice edge heading in a NNW'ly direction. Progress was assisted by the use of the ice heeling tanks causing the ship to roll slightly to ease the friction on the ship's sides. These heeling tanks used compressed air to force 300t of water from one side of the ship to the other.

At 0600 the ship reached the ice edge and I informed the Director who quickly came to the Bridge along with other senior personnel to make a decision on our next move. The weather was quiet and the general outlook not unreasonable. The Director asked that I give an opinion on how long it might take if we again attempted to proceed direct to Rothera. The Director appreciated that any answer would be little better than a calculated guesstimate and that once committed to a passage through pack the ship could become beset for some time. However, my answer was that I estimated three days to make the passage that in open water would take about 18 hours. The Director then agreed that I should proceed direct to Rothera rather than return to Damoy to commence an airlift operation. Ilene Buttle was on the bridge but had not offered an opinion, however, I could see that she was delighted with this decision and the experience it would give her.

As luck would have it my three-day estimate turned out to be spot on. Much of the time was spent at full power with the ice heeling assisting. Not forgetting that this was the maiden voyage and not quite knowing what to expect we were delighted and somewhat amazed that the ship for the most part kept moving slowly forward in 10/10s ice under considerable pressure as was evident by how quickly the ice closed in our wake. At times the ship was forced to a stand-still during which the engines were given a bit of a rest until we discerned that progress might again be made.

As we approached Jenny Island at the southern end of the Lauberf Fjord, some 12 nm short of Rothera we were confronted by a solid sheet of fast ice. However the ship made sort work of it and was moored at the Rothera jetty within two hours. Some years earlier on the John Biscoe we had met a similar situation and it had taken 5 days working the 12 nm of fast ice to reach Rothera. Admittedly the ice may have been somewhat thicker but I remain convinced that the JCR would still have passed through it easily.

Memories of the RRS *James Clark Ross*

Jo Cox, former Chief Officer on JCR

Jo Cox in the JCR's Humber

There are moments that define our lives and shape our futures. One of the most significant for me this was the 7th September 2002, when I first joined the JCR in Grimsby as a relatively fresh faced cadet. At the time I anticipated it would be a once in a lifetime adventure to sail on fascinating ship and explore the Antarctic. What I certainly didn't imagine was the start of a journey that would define my life and career.

Even at the grand old age of 30, the JCR still turns heads wherever she goes, with modern looking lines and great capability as a research and logistics platform. What people don't see are the number of lives she has changed along the way. For me she is a ship full of memories and experiences, where I have made some lifelong friends and explored both the Antarctic and Arctic.

I sailed on the JCR for 7 of my 10 years working for BAS. It was a journey that took me from Cadet to Chief Officer and ultimately on to attain my Master certificate of competence. As the years passed my love of the Antarctic and my desire to spend more time down South kept growing. In 2012 I got the opportunity to start working as Government Officer on South Georgia. A role which allowed me to use all the skills and knowledge I'd gained in my seafaring career with BAS in a shore-based role in one of the most stunning places on earth. After 3 amazing years on South Georgia, it was time to use my Master Mariners certificate, as Captain on RRS Discovery. A role that I held for 4 years, the highlights of which were taking the vessel to both South Georgia and the Falklands on her maiden port calls.

It seems that when the lure of the South hits, it is something that you really can never get over. For me, the journey and adventures continue, with my next role as Falklands Harbour Master based in Stanley beginning in June. Whilst the JCR will be a sadly missed visitor to the harbour, I very much look forward to welcoming the RRS Sir David Attenborough on her maiden port call. Who knows, she may even have a fresh-faced cadet onboard at the beginning of their own life changing adventure.

Memories of the RRS *James Clark Ross*

Paul Rodhouse, a former BAS marine scientist explains how JCR helped solve the mystery of how albatross catch squid

The arrival of the shiny new JCR provided the opportunity for new collaboration between ship-based science and Bird Island research at South Georgia. During the last research cruise of the *John Biscoe* we were sampling squid with a relatively small net, the RMT25, and catching relatively very small squid – much smaller than the squid predators at Bird Island were known to prey on. At that time John Croxall and Peter Prince were starting to put satellite tracking devices on albatrosses breeding at Bird Island and I realised that with the new ship we would be able to use tracked birds to lead us to where they were feeding on squid. We would be able to identify squid targets with the new echosounder and sample them with the sort of large-scale pelagic trawl that the JCR would be capable of deploying.

In due course satellite tagged grey-headed albatrosses led us on the JCR to positions on the Antarctic Polar Front where we found acoustic targets that were potentially squid. We deployed a commercial pelagic trawl with a mouth that spanned some 90 m and successfully caught several species of adult-sized squid. On one occasion we towed it through the night with the head rope skimming the surface. In this haul we caught some 200 kg of adult squid of the same species and size that albatrosses were feeding to their chicks at Bird Island. It solved the riddle of where and how near-surface feeding albatross prey on squid, previously known only from deep water samples, and enabled us to devise precautionary measures for CCAMR to implement if a new squid fishery should threaten the birds' food resource.

Farewell JCR and thanks for all the krill

Geraint Tarling, BAS, reflects on the JCR's contribution to marine science

On 24th March 2021, the British Antarctic Survey held a virtual farewell event for *RRS James Clark Ross* (JCR), the ship that had served it, and the wider marine science community, so well for the past 30 years. The event was attended by over 200 participants, including past captains and crew and with the present crew of the ship dialling in from just off the UK coast. Although the JCR was highly effective at transporting cargo and personnel, its principal purpose was to provide a platform from which to carry out polar science. As part of the celebrations, a short tribute was made to the breadth of its scientific achievements over its three decades of service. As Chris Elliot describes on page 6, JCR represented a major step change from its predecessor, *RRS John Biscoe*. This resulted in a vast increase in the quality and quantity of data. At its launch, the ship had some of the most modern marine technology of its age and provided a stable platform from which to deploy ever more ambitious and innovative ways of sampling the marine environment.

Geraint with a bucket of krill (and an unhappy colleague, who was hoping to catch fish). Photo: Liz White

One major step change was in the capabilities of its multifrequency acoustics systems which brought a new dawn in the observation of marine animal populations. In particular, the JCR was able to resolve swarms of krill in incredible detail and map their distributions as never before. This was put to good effect when it participated in the CCAMLR 2000 survey to carry out the first ever multinational multi-ship survey of the distribution of krill in the Atlantic sector of the Southern Ocean. The estimate of 44 million tonnes (Mt) over 2 million km^2 is still used to this day in krill management models. From further extrapolation work, the total population size of krill in the Southern Ocean was estimated to be 150 Mt, making it the largest biomass of any wild animal species.

JCR was also capable of deploying large pelagic trawls which were used alongside multifrequency acoustics in annual surveys around South Georgia to assess the status of krill. This data was related to the behaviour and population status of the many and varied predators of krill, monitored from stations such as Bird Island. These annual surveys are now continuously used by international bodies such as CCAMLR to help ensure harvesting does not have any detrimental effects on the wider ecosystem. Midway through its scientific career, a swath bathymetry system was installed on the JCR which revolutionised its ability to map the seabed in unprecedented detail. This revealed a number of interesting bathymetric features around South Georgia and its relationship to the undersea mountain range of the Scotia Arc. Swath data was also important in defining benthic habitats which were related to camera and trawl surveys that described the tremendous diversity of life on the South Georgia shelf seabed, equivalent to that found in species rich sub-tropical regions such as the Galapagos.

The JCR also provided a platform from which to make some of the first deployments of technologies that will, no doubt, become increasingly important in the science operations of its successor, *RRS Sir David Attenborough*. It was from the JCR that *ROV Isis* made some of its landmark dives to previously unobserved habitats below 3000 m. JCR also launched *Autosub* to carry out some of the first ever under-ice missions, discovering populations of krill many tens of km in from the ice-edge. The new fleet of autonomous underwater vehicles, including the world famous "Boaty McBoatface" can also thank the JCR for taking them to their far-flung Southern Ocean launch sites.

Probably the biggest legacy that the JCR will leave is the innumerable scientific collaborations it facilitated, of which many will extend far beyond the life of the ship itself. All will testify to the cooperative atmosphere and camaraderie they experienced on board. This very much reflects on how well-equipped and well run the vessel was throughout its period of service. It was a ship that was much loved and it delivered over and above whatever its scientific ambitions originally were.

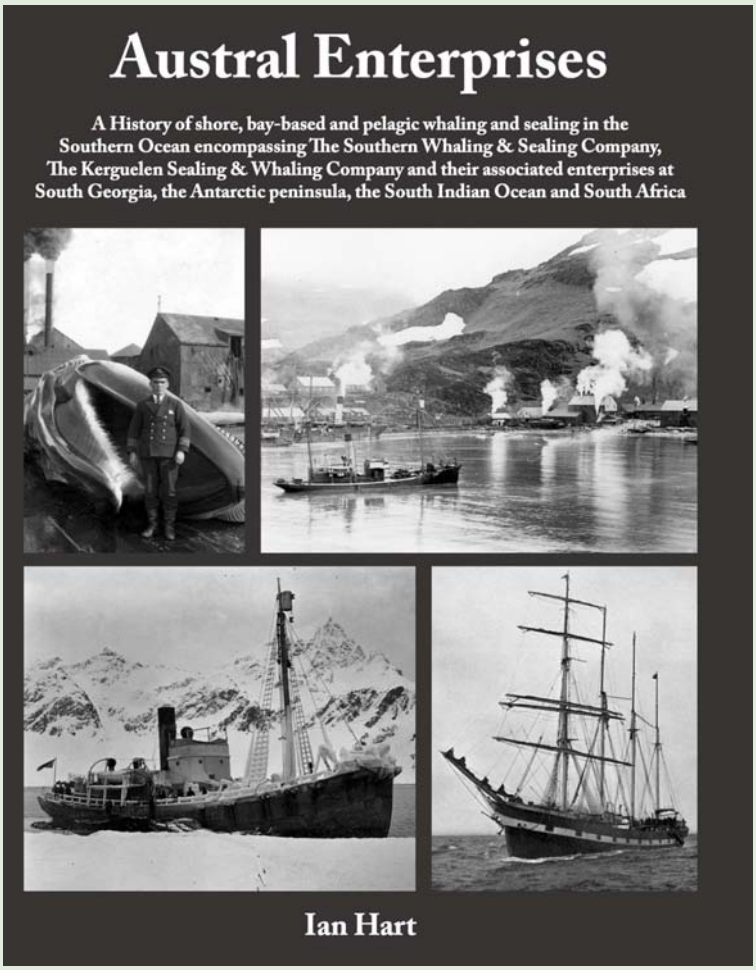
Deploying a mooring from JCR

Book Review: *Austral Enterprises by Ian Hart*

***A history of shore, bay-based and pelagic whaling and sealing in the South Ocean encompassing The Southern Whaling and Sealing Company, The Kerguelen Sealing and Whaling Company and their associated enterprises at South Georgia, the Antarctic peninsula, the Southern Indian Ocean and South Africa;* published 2020 by Pequena Press.**

By Stephen Palmer

This copiously illustrated A4 format book is the latest major publication by the historian Ian Hart about whaling and sealing in the Southern Ocean and at South Georgia. Hart's other books are: *Pesca; a history of the pioneer of modern whaling* (published 2001); *Whaling in the Falkland Islands Dependencies 1904-1931* (published 2006); *Antarctic Magistrate* (published 2009).



ISBN ***978-0-9552924-3-9; 380 pages: £30.***

Austral Enterprises is a beautifully printed and meticulously researched book, with hundreds of excellent images, and many appendices and tables – which when with combined with the clear and comprehensive text, recounts an important part of the history of the Southern Ocean and South Georgia.

The Introduction to *Austral Enterprises* Ian Hart clearly describes the purposes of the book: 'There have been a number of publications in recent years which have focussed on twentieth -century whaling modern whaling in the Antarctic. However, none to date has focussed on the important British whaling operations that were conducted by the Southern Whaling & Sealing Company of North Shields, its partners Irvin and Johnson of Cape Town, Southern Whaling's successors Lever Brothers of Liverpool … In time these commercial developments had a profound effect both on the stocks of whales in the Southern Ocean and the price and availability of whale oil in the marketplace in the period between the two World Wars.'

The book is divided into three parts: the first period covers Southern Whaling's activities to 1919; the second part covers Lever Brothers involvement between 1919 and 1941; and the third part is concerned with the period covering Irvin and Johnson's activities at South Africa, the peri-Antarctic islands and the Southern Ocean to 1941.

One of the more remarkable images in the book is that of Ernest Swinhoe's South Georgia Exploration Company's camp which was established on the west side of King Edward Cove in August 1905, and of particular interest to the reviewer was the detailed description of the whaling operations conducted at Prince Olav Harbour – the text is accompanied by many outstanding photographs.

This is an excellent book; well worth the money and it greatly rewards the reader. It is also a significant contribution to the recording of the history of man's involvement in the Southern Ocean.

Fishing in the time of covid: A 5-month trip to South Georgia and South Sandwich Islands onboard of a toothfish fishing vessel

by José Queirós

José with a large Patagonian toothfish

It all started early in February 2020 when we heard that the Nordic Prince was on route to Stanley from the Ross Sea and I was to fly to the Falklands Islands to join her for a trip to the South Sandwich Islands. The Nordic Prince is a toothfish longliner, operated by Argos Ltd, and licensed to fish in South Georgia and the South Sandwich Islands. It was supposed to be a short trip of approximately 3 weeks for the toothfish season around the South Sandwich Islands. However, it ended up a 5-month trip fishing around both the South Sandwich Islands and South Georgia.

This trip was part of my PhD to study the food web structure of the Southern Ocean deep-sea ecosystems. The objective of the trip was to collect data on both Antarctic and Patagonian toothfish and other bycatch species such as grenadiers and eel cods. For that, the main tasks onboard were to collect biological data, muscle and stomach samples of the different species that will be further analysed at the laboratory.

I boarded the Nordic Prince on the morning of 25th of February 2020 and we sailed at lunch time in direction of King Edward Point (KEP), South Georgia. The first days onboard a new vessel are always challenging, meeting the crew, getting used to the routine onboard, doing the safety drills, unpacking the material and understanding the functioning of the factory where we are going to work.

The Nordic Prince in Cumberland Bay

Onboard we were 25 crew members from 10 different countries (4 continents!). Different cultures, different habits and different languages are always one of the main challenges that we can face onboard. The main languages onboard were Spanish and English. Luckily, besides the captain on the South Georgia trip, I was the only crew member that spoke both languages (relatively) fluently and because of that I worked as a translator a lot of times! The first stop was at KEP for a pre-season inspection. Each vessel in the fishery has a set quota of toothfish to catch and must comply with regulations set by both CCAMLR and GSGSSI and the inspection at KEP is to ensure that the vessel can comply with those regulations.

The two fishery observers and I were able to go ashore and visit the laboratory and the staff working during the winter, but also spent some time enjoying the landscape, the seals and the king penguins at the beach before starting work. When fishing, our daily routine was very simple, we fished all day, and the crew rotated in two shifts of 6h, with the 3 meals happening at the change of shift.

Undertaking science on fishing vessels presents some challenges that we are not used in our usual scientific routine. Firstly, our work is dependent on the crew; if they go the factory to process the fish we go to sample, but if they want to wait, we need wait. Then, despite the factory being prepared to have observers on board, we didn't have the perfect conditions to work as we would on a dedicated scientific vessel. Finally, but perhaps most importantly, we need to remember that the goal of the ship is to fish and make money, so we worked in all sea conditions and if we didn't fish, it meant less money and more days to return home for the crew and their normal good humor disappeared.

After finishing the South Sandwich Islands season, we sailed back to Stanley to unload. At this stage everyone was happy because we were going to return home. Especially the crew that was onboard since November 2019. Once unloaded, the ship was due to sail to South America and the crew would fly to their homes. However, during our season at South Sandwich Islands the Covid-19 outbreak happened in Europe and South America. All countries closed their borders with all flights cancelled. This setback changed the plans, for me and for all the crew. Instead of returning home, we stayed onboard, anchored in Stanley Harbour, waiting for the South Georgia season that would start one and a half months later (May 1st).

During this waiting period, all days were very similar: everyone inside their cabins and trying to find things to do. The company sent us books, puzzles and chocolates to raise our spirits. Everyone was tired and wanted to return home It was a very difficult month to the crew, but it finally finished, and we sailed again to South Georgia. This time, due to Covid-19 we didn't have an inspection at KEP, but instead were subjected to a rodents inspection in Stanley with the rat-dog and during the season we were visited by the Fisheries Patrol MV *Pharos SG* and overflown by a RAF aircraft.

The SGSSI patrol vessel MV *Pharos SG*

An overflight by an RAF patrol aircraft

The South Georgia fishery has a much larger catch limit than the South Sandwich Islands and each vessel had a much larger quota, and we knew that we would spend around 3 months fishing. The routine was the same, however the crew was more tired and less happy than at South Sandwich Islands. With the Covid-19 pandemic continuing we didn't know if, even if we finished fishing early, we would be able to return home.

The season went smoothly and by the middle of June we thought that we could finish before the 15th of July. The 15th of July is seen as an important date for the fishery as, after this day the catch rates usually decline (when toothfish are spawning) and catching the last of the quota can take much longer. On board everyone knew that we could do it, and at least try to return home. However, a new setback! One of the crew members had a health issue and we were forced to return to Stanley to disembark him. After spending 3h at Stanley we returned to South Georgia, however more than 10 days were lost. Now the crew knew that we would not finish before the 15th of July, and the happiness disappeared again. Nevertheless, we kept up the work until we finished the trip early in August. Arriving at Stanley, it was time to return home and the happiness onboard was again on top!

A wandering albatross cruising past the vessel

The grenadier or rattail, Macrourus caml*, one of the main bycatch species in both South Sandwich Islands and South Georgia toothfish fisheries.*

I would like to give a huge thanks to both captains (Kim and Leif), all the crew members and observers onboard the Nordic Prince for the great welcome, all the help during the work, all the things they taught me and all the great stories. Huge thanks also to Andrew Newman for helping me when on land and for handling with the company owners my stay onboard during the quarantine and South Georgia season. Special thanks to Argos Ltd for allowing me to board on their vessel to do my science and to gather more and more stories and fantastic memories from the Southern Ocean.

To all on board a sincere Thank You! Takk skal du ha! Gracias! Dankie! Spasibo! Terima kasih! Obrigado!

Prince Philip at South Georgia

Following the death of the Duke of Edinburgh, Bob Burton provides an account of HRH's visit to South Georgia

January 6, 1957 was a historic day in the annals of South Georgia. It opened with the arrival of the Royal Yacht *Britannia*, bringing Prince Philip, Duke of Edinburgh, to Leith Harbour. On his way home from Melbourne at the conclusion of the 1956 Olympic Games, HRH toured many of the lesser parts of the Commonwealth. These included seven Antarctic bases and the whaling stations on South Georgia. The royal visit to South Georgia was preceded by a huge clear-up of rubbish and the painting of buildings at King Edward Point. Grytviken was similarly tidied up and repainted, with some buildings changing from a boring brown to a brighter white with red trim. And a bar was installed in the manager's villa! HRH went ashore first at Leith Harbour where he inspected the whaling station before being taken to Husvik and then on to Grytviken aboard the whalecatcher Southern Jester.

Prince Philip meets the two doctors at Leith Harbour

Nochart Nilsen, the gunner/skipper dressed incongruously in a lounge suit, said 'I don't care if I miss a blue whale today. He [HRH], too, is a seaman, and it will be a great honour to have him on board my ship.' On the way Nochart demonstrated the harpoon gun by 'harpooning' a drifting packing case and scoring a direct hit, much to his relief. When the royal party landed at King Edward Point, a 21-gun salute was fired from the harpoon guns of four pensioned-off whalecatchers anchored nearby. Normally HRH received 19 guns but the whalers could not believe a man was worth two less than his wife, even though she was the Head of State.

Prince Philip inspects the harpoon equipment on Southern Wilcox.

All adjourned to the Administrative Officer's house for afternoon tea, combined with drinks and protracted socialising which cut into the official timetable as Prince Philip mingled freely, chatting to everyone.

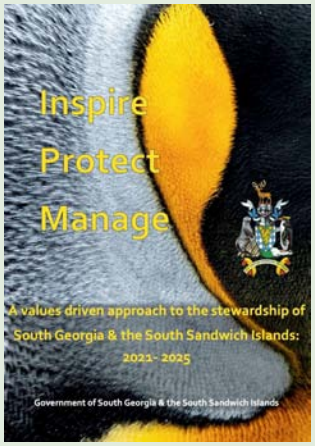
A trip across the cove brought the royal party to the whaling station where they were shown around. It was recorded as a delightfully informal visit with the duke showing a great interest in all aspects of the grisly business of rendering giant mammals into oil and 'guano'. Finally, as *Britannia* left South Georgia, she met up with *Southern Wilcox* and HRH transferred to her to witness the chasing and harpooning of two whales.

Gun salute in King Edward Cove

Photos are courtesy of John Alexander (upper) and South Georgia Museum

South Georgia Government News

GSGSSI New Strategy "Protect Sustain Inspire" Published

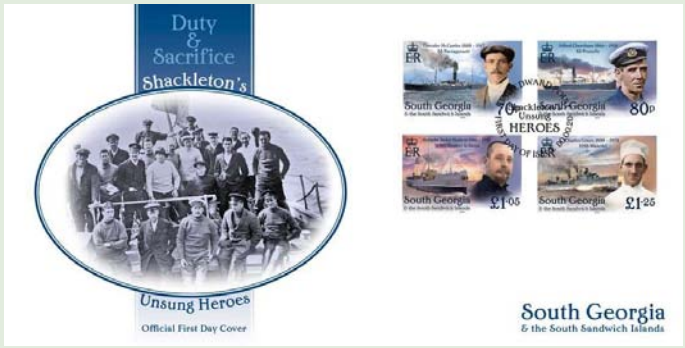


GSGSSI have published their new strategy for the next five years entitled "Inspire, Protect, Manage". The document, which is available from the GSGSSI website, sets out the Government's approach to the next five years. The vision of "Sustainable environmental recovery through world-class precautionary management", together with four guiding values: Environmental Protection, Evidence-Based Decision Making, Sustainability and Openness will guide the Government in its assessment of current and future activities. Minister for the Polar Regions, Lord (Tariq) Ahmad of Wimbledon, said: "Through this approach, South Georgia & the South Sandwich Islands will continue to be a beacon of conservation management, informed by the UK's world leading scientific expertise."

HMS Clyde and HMS Forth Stamps

The transition from HMS Clyde to HMS Forth is marked with a set of SGSSI stamps issued in December 2020. At 81 m in length HMS Clyde was launched in 2006 and served as the South Atlantic patrol vessel until 2018, when she was replaced by HMS Forth. HMS Clyde has been decommissioned and transferred to the Bahrain Navy.

Shackleton's Unsung Heroes



The story of Shackleton and his men will be familiar to most readers, but whilst much interest has focussed on Shackleton, Worsley, Wild and Crean, many others played a significant role in this epic story of survival and four are commemorated on a new set of SGSSI stamps. The stamps feature Timothy McCarthy, Alfred Cheetham, Huberht Hudson and Charles Green.

McCarthy was an able-seaman who accompanied Shackleton in the James Caird journey, but was killed in the war, just three weeks after his return. Cheetham was 3rd Officer on *Endurance* and had previously served on both *Discovery* and Terra Nova expeditions but was sadly killed during the first world war when SS *Prunelle* was sunk by a U-boat. Hudson, a Royal Navy officer, served as a mate on *Endurance*. On returning from the expedition, Hudson served in the first world war on the Q-ships but died during action in the second world war. Green, a baker by trade, joined *Endurance* in Buenos Aires when the original cook was fired. On his return, Green served on HMS *Wakeful* in WW1 and as a Fire Watcher in Hull during WW2. Green was one of the last members of the *Endurance* crew to pass away, at the age of 85 in 1974.

Ban on the Use and Carriage of Heavy Fuel Takes Effect

As part of the enhancements to the Marine Protected Area (MPA), GSGSSI have amended legislation to prohibit the use and carriage of heavy fuel in the South Georgia waters. The Heavy Fuel Oil (Prohibition Of Carriage And Use) Ordinance 2019, prohibited the use and carriage of heavy fuel in the South Sandwich Islands region of the MPA and this amendment, which came into force on 31st December 2020, extended that prohibition to the entire MPA. Heavy fuel is defined as fuel oil having a density at 15 C higher than 900 kg/m^3.

Obituary: Hans-Kjell Larsen

Hans-Kjell Larsen, born on 11 February 1931 and died on 29 October 2020, was a major figure involved with South Georgia and other Antarctic regions as well as his distinguished architectural practice in Norway. This is a direct consequence of his grandfather's many activities during the historic phase of Antarctic explorations. Following two voyages of Jason then the arduous Antarctic expedition, Carl Anton established Grytviken in South Georgia beginning a long family association with the island. My first meeting with Hans-Kjell, in Sandefjord, in 1980, showed this interest and he worked productively on several South Georgia projects. These included the museum at Grytviken, the beginning of the South Georgia Association, and subsequent historical conferences and symposia. For the 75th anniversary of the whalers' church, established by his grandfather, he visited the island as a guest of the government. The church, with care of whalers' graves, featured strongly in his interests.

In 2013, on the church's centenary he generously transferred all family rights to the government being assured that it was in safe hands as the only historical building on South Georgia preserving its original function. In 2018 Hans-Kjell, with his son Kim presented a bronze bust of Carl Anton to the Scott Polar Research Institute, cast from the same mould as those in Grytviken and in Norway, thus reinforcing the century of association. Hans-Kjell is survived by his wife Julie, with son Kim and daughter Sophie. Kim has visited the Antarctic which perpetuates the family interest.

R.K. Headland

South Georgia Association News

SGA Annual General Meeting

The 2021 SGA Annual General Meeting will be held remotely at 7 pm on Friday May 7th using the platform Zoom. The meeting will include a message to the SGA from His Excellency Nigel Phillips, Commissioner for South Georgia & the South Sandwich Islands.

SGA Online Meetings

During the on-going pandemic, the SGA have continued to host a series of online seminars highlighting subjects of interest to member and the wider community. The most recent meeting featured a talk by Laura Gerrish and Sally Thorpe, BAS on the provenance and potential impacts of the A68 giant iceberg and was joined by over 300 people. A recording of the talk can be viewed at https://southgeorgiaassociation.org/sga-video-recordings/#a68atalk. Given the success of the online talks, these are likely to continue beyond the end of the pandemic and the next talk is scheduled for May and will feature a talk from Marcus Brittain (University of Cambridge) about the archaeological excavations of sealers sites on South Georgia.

Editor's Note

The enclosed model of RRS *James Clark Ross* comes from a drawing by Dave Adam and was digitised by Povl Abrahamsen (BAS) – thanks to both. Thanks to the contibutors to this edition, notably Chris Elliot, Jose Queiros, Paul Rodhouse, Geraint Tarling, Jo Cox, Meghan Goggins, Kate Owen, Bob Burton, Bob Headland and Stephen Palmer and to John Dickens for the use of his photos of JCR. Thanks to Bob Burton & Fran Prince for their proof-reading and fact checking. The South Georgia Association newsletter is produced twice a year, in April and November. Contributions should be submitted, at least one month before publication, to the editor: Martin Collins (e-mail: only1martincollins2@gmail.com).

The South Georgia Association

12 months ended 31 December 2020

Receipts and Payments

		12 months ended 31 December 2020	*12 m/e 31 Dec 2019*
		£	£
Receipts	Membership Subscriptions for 2020-26.	**3,327**	*2,997*
	Spring Meeting and AGM.	**-**	*740*
	Meeting with Devon & Cornwall Polar Society, Plymouth.	**-**	*3,935*
	Morag Campbell Legacy.	**-**	*500*
	Albatross brooch sales.	**-**	*50*
	Donations received.	**17**	*60*
	Bank interest received.	**23**	*52*
		3,367	*8,334*
Payments	Newsletter printing and postage.	**706**	*216*
	Spring Meeting and AGM.	**-**	*3,051*
	Meeting with Devon & Cornwall Polar Society, Plymouth.	**-**	*3,840*
	Morag Campbell award and engraving.	**19**	*16*
	Initiative Fund. South Georgia Archaeological Project.	**-**	*500*
	Website hosting	**65**	*37*
	Other: stationery, committee travel.	**180**	*153*
	Licence. Zoom account	**144**	*-*
		1,114	*7,813*
Surplus/(deficit)		**2,253**	*521*
Brought Forward at 1 January 2020.		**26,471**	*25,950*
Carried forward at 31 December 2020.		**28,724**	*26,471*
NatWest Bank at 31 December 2020.	Current Bank Account	**1,145**	*715*
	Reserve Bank Account	**27,579**	*25,756*
		28,724	*26,471*

Of the balance of £28,724 at 31 December 2020:
£5,556 was membership subscriptions for 2021-26, received in advance.
£6,675 was the remaining unspent balance of the Morag Campbell £10,000 legacy.
This leaves £16,493 of "free " funds.

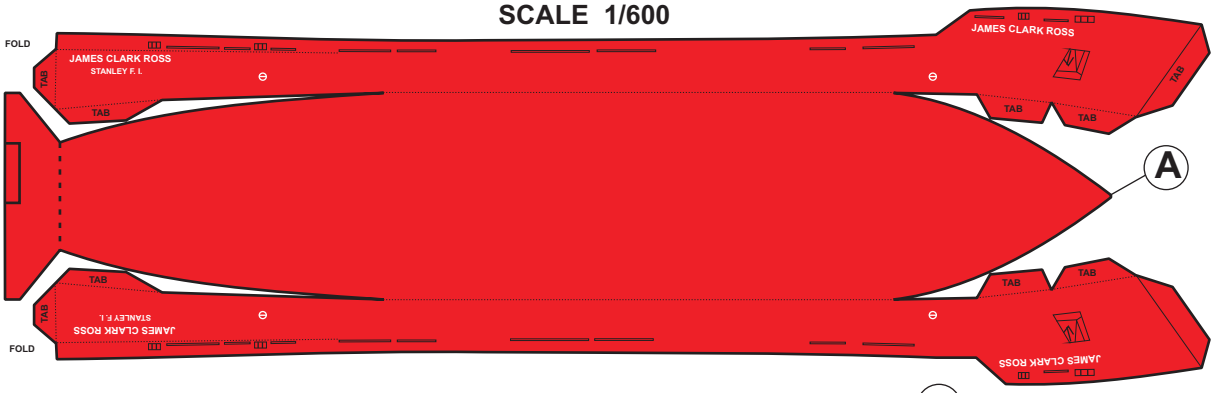
Morag Campbell spend so far is £3,325: die and ten medals £3,279, engraving £46.

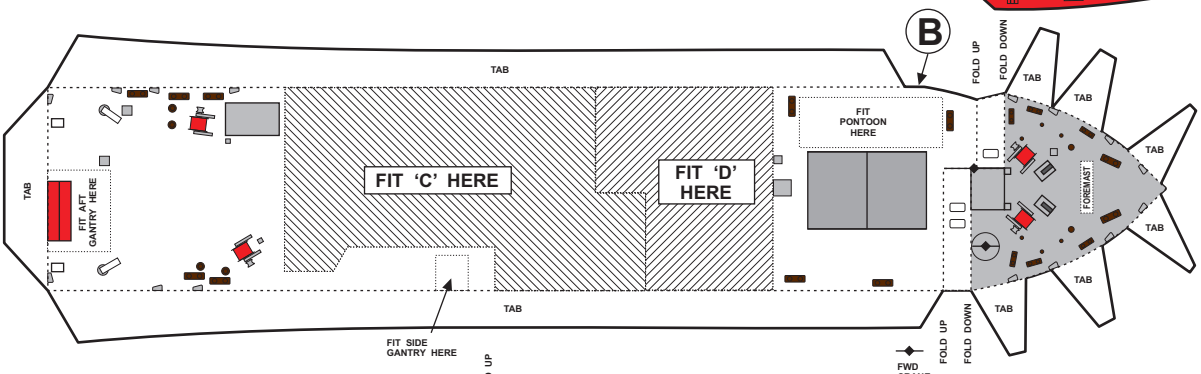
John Owen
Honorary Treasurer
3 March 2021

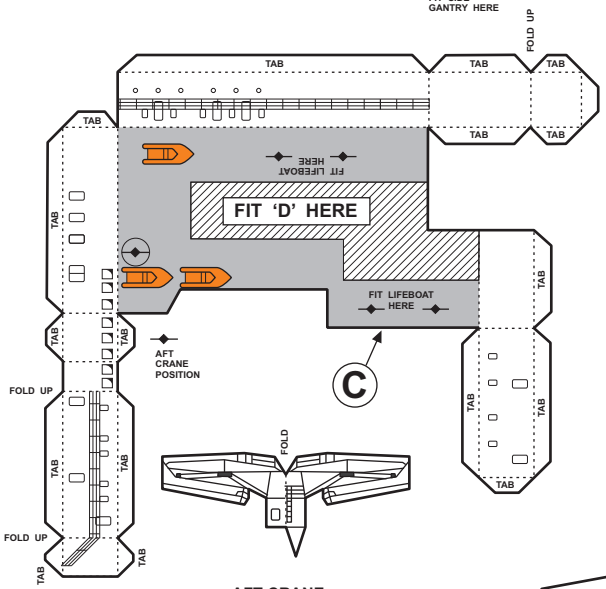
Stephanie Prince
Auditor
3 March 2021

RRS JAMES CLARK ROSS

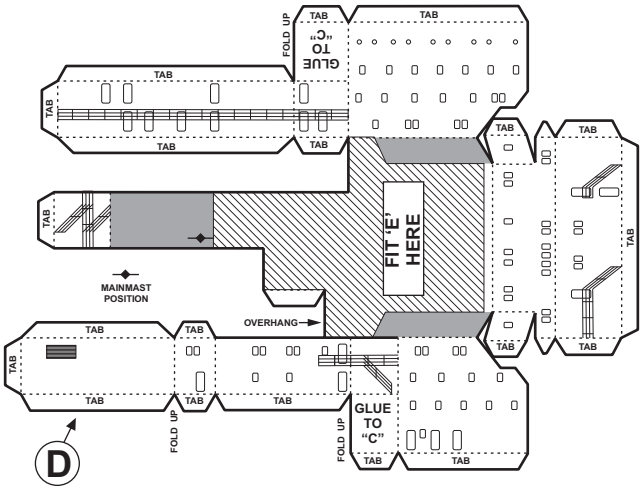
SCALE 1/600

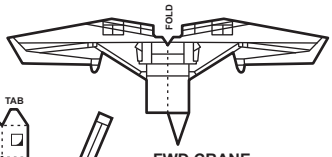




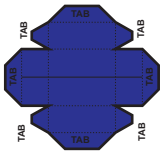


AFT CRANE

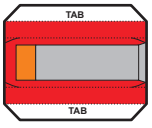




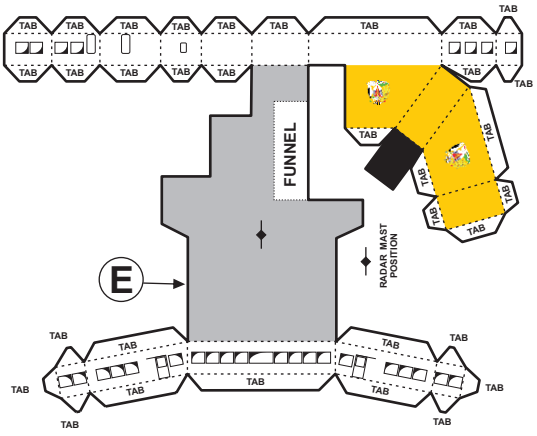
FWD CRANE

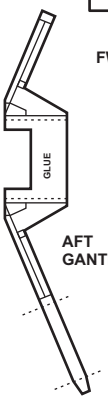


CONTAINERS



PONTOON

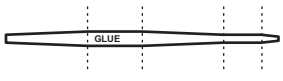


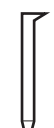


AFT GANTRY

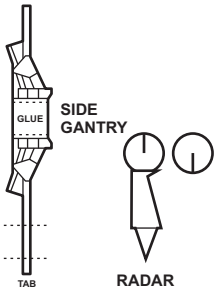
LIFEBOAT

LIFEBOAT





MAIN MAST



SIDE GANTRY

RADAR MAST

DESIGN BY D. ADAMS
DIGITIZED BY P. ABRAHAMSEN