



South Georgia By Kayak

Irish Expedition

November/December 2019

Report

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Supported By:

East Coast Sea Kayak Club
Shearwater Sea Kayaking
Ardmore Adventures
Shackleton Museum, Athy

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Endorsements

Shackleton Museum, Athy, Ireland – **Margaret Walsh, Curator**, and Board

International Sea Kayak Guide Association – **Jeff Allen, Director**

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Dr. Rob Scanlon, who wrote the Medical Plan and provided our medical kit, but had to sign out of the Expedition due to injury.

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Justine Curgenvén, for the initial idea and a timely intervention

Ezequiel Sundblad, Skipper, and Santiago Sundblad, Crew, Ypake II, who put themselves on the line and got us there and back.

...and those who could not go, but supported the Expedition in concrete ways:

Willie Collins, Leon Conway, Sue Honan, Mick Carroll, John Lawlor, Rob Doyle, ...

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1 Introduction

For many reasons this expedition might not have happened, but it did; and looking back from the strictures of Covid lockdown, we can reflect on how fortunate we were that it did happen, the privilege of our time in the Southern Ocean, and our experience of the unmatched natural environment that is South Georgia.

The idea for this expedition was born in Antarctica, on a previous sailing/kayaking expedition in 2017, (on S/Y Spirit of Sidney with skipper Ezequiel (Zeek) Sundblad, crew Santiago Sundblad, and kayak leader Justine Curgenven). In the relatively sheltered conditions of the Antarctic Peninsula, an expedition to the more exposed coast of South Georgia was mooted, and the germ of an idea took hold to mount an Irish expedition that would celebrate the unique traditions that link Ireland and South Georgia also

A phone-call to Zeek was sufficient to secure his boat S/Y Ypake II and kayaks, and thus began a journey over the following 18 months for a sailing/kayaking expedition to South Georgia in the autumn of 2019.

Despite many twists and turns on the way, we succeeded, and spent 11 glorious summer days in the wilderness that is South Georgia. The experience of close encounter with the massed bird- and sea-life that abounds there is unforgettable. It exposes the fragility of the global environment, the naivete and innocence of wild-life, and the dependence of all life on active human stewardship of our planet.

1.1 Expedition Planning

Trip planning took 18 months was an intense and rewarding part of the experience. The Irish dimension, which in addition to exploring the natural habitat would also explore the close historical and cultural links between Ireland and South Georgia, proved decisive in the end.

1.2 Team

The challenge was to attract an Irish team that had the kayak skills for the exposed conditions of South Georgia and who could also afford the time and the expense. It took a year to fill-out the trip, and the last place was filled 6 weeks before departure. There were quite a few who wished to go, were supportive of the trip at various stages, but who for one reason or another had to sign-off. Their valuable inputs are acknowledged. The final Team CVs are listed Appendix 1.

1.3 GSGSSI Planning and Approval Process

IAATO approval is a pre-requisite for a sailing vessel to enter South Georgia waters and is an exacting process. A serious setback occurred when Ypake II was unable to secure IAATO approval within the requisite time window. GSGSSI has a process for direct approval, and we determined to go this route.

A detailed Expedition Plan was prepared by the Team (this Report copies much of the original Plan material) with the objective of establishing the bona fides of the Expedition. The Plan was reviewed by GSGSSI, with feedback on gaps and conditions/suggestions to address them. The principal objection was that our Plan did not fully align with the strategic objectives of the GSGSSI Development Plan and this was a condition of approval.

Exploring the Irish Shackleton connection with South Georgia enabled us to meet this condition and added to the interest of the trip. We met members of the Shackleton and Crean families and found our way to the Shackleton Museum in Athy, Ireland. We attended the Shackleton Summer School and met a host of South Georgia enthusiasts, including Robert Burton, scientist and author and a mine of invaluable information, who gave us a project to count Weddell seals in Larsen Harbour. At every stage we met support and encouragement.

In the end, we created a joint educational outreach project with the Shackleton Museum which GSGSSI were happy to approve in line with their Development Plan. We recognise the support of Margaret Walsh, Curator, and the Board of the Museum for their support. We were on our way.

We wish to also to recognise the members of GSGSSI who guided us through the planning stages and during our visit. We met unfailing professionalism, demanding standards, and support. The world is fortunate that South Georgia is in the hands of such a dedicated team. Particular thanks to Ross James, Visitor Manager, without whose guidance the trip would not have happened, and Crag Jones of the External Advisory Panel.

1.4 General Planning

The remainder of the planning comprised the myriad details required to get an Expedition together. Particular items worth commenting on are:

Season	There is no 'right' time to visit, as wildlife cycles are constantly changing throughout the austral summer. We chose November/December, when elephant seals are quiet on the beaches, but fur-seals and penguins are active. The main whale season is after Christmas, but we saw abundant whales (hump-back).
Air Travel	The choice was Santiago de Chile > Falklands or RAF Brize Norton > Falklands via Azores. We went with the RAF, more expensive but a direct route. Recommendation: Advance the approval process (Application and RAP) to give sufficient lead time for travel planning and booking.
Kit	Endless debate about weather/conditions, clothing (dry-suits essential), equipment, safety, communications, emergency food, etc. We experienced settled summer weather for virtually the whole time in South Georgia and did not, in the end, use items of kit for more extreme conditions. Packing allowance was hand-luggage, 1x large kit-bag each, with a communal sports bag for medical kit, paddles etc.
Risks	See detailed Kayak, Biological and Medical Plans and evaluations below.

1.5 Expedition Objectives

The Expedition objectives are listed below and, with the exception a couple of locations (e.g. King Haakon Bay, Royal Bay) were all achieved.

Kayaking South Georgia	Kayaking provides a unique way to experience the natural environment at close quarters and the Team have paddled in diverse global locations. South Georgia, remote and exposed, presents unique challenges to kayakers, and unparalleled rewards in terms of access to unique pristine environments wildlife heritage sites.
South Georgia Wildlife and Conservation	The Expedition team included a number of wild-life and conservation professionals, with objectives to experience the unique wildlife of water, earth and sky in South Georgia, Falklands and Southern Ocean and life inside the Antarctic Polar Front.
South Georgia History	Explore the history of exploration and also the commercial exploitation of whaling/sealing and the transformation of South Georgia, under British administration, into a world natural conservation site.
South Georgia Irish Connections	The Team drew inspiration from the Irish connections with South Georgia, and the engagement of Ernest Shackleton and Tom Crean in particular. Objectives were to visit sites associated with them, including Stromness, Grytviken and King Haakon Bay.
Shackleton Museum Educational Outreach Programme	The Expedition Team committed to a joint project in partnership with the Shackleton Museum, Athy, Ireland, to create an educational experience for schoolchildren as part of the Museum's educational outreach programme. This is on-going.
Wildlife Survey	After a chance meeting with Robert Burton, scientist and author, at the Shackleton Autumn School, Athy, the Team undertook to survey Weddell Seals in and around Larsen Harbour.

1.6 Expedition Outline

The Expedition Team comprised 7 sea kayakers, all with extensive experience of kayaking in remote ocean locations in testing conditions, including polar.

The final Expedition schedule was:

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Nov 19			13 Flight	14 Flight	15 Falklands	16 Falklands	17 Passage
Nov 19	18 Passage	19 Passage	20 Passage	21 Passage	22 Passage	23 Passage	24 Passage
Nov 19	25 South Georgia	26 South Georgia	27 South Georgia	28 South Georgia	29 South Georgia	30 South Georgia	31 South Georgia
Dec 19	2 South Georgia	3 South Georgia	4 South Georgia	5 Passage	6 Passage	7 Passage	8 Passage
Dec 19	9 Passage	10 Passage	11 Passage	12 Passage	13 Passage	14 Flight	15 Flight

The SGBK Expedition to South Georgia focused on the northern coastline, and this was traversed in full.

1.7 Sponsors

The Expedition members represented East Coast Sea Kayaking Club (ECSKC), Shearwater Sea Kayaking, Ardmore Adventures and West of Ireland Sea Kayaking Association (WISKA), and extended the outreach of these organisations to include kayak exploration in the Southern Ocean. These organisations operate to the highest sea kayaking skills and safety standards and are affiliated to, and insured by, Canoeing Ireland, the governing body for kayaking in Ireland.

East Coast Sea Kayaking Club (ECSKC) is the largest sea kayaking club in Ireland. Shearwater Sea Kayaking and Ardmore Adventures are professional sea kayak service providers providing sea kayak skills development. Member of these organisations have mounted recent wilderness sea kayaking expeditions to global locations including Antarctica, Greenland, Haida Gwai, Norway, Brittany, Galicia, Scotland, Wales, Crete and Croatia.

The Expedition was sponsored by The Shackleton Museum, Athy, Ireland, and endorsed by International Sea Kayak Guide Associations (Jeff Allen).



South Georgia By Kayak Expedition, Dublin, 14 November 2019

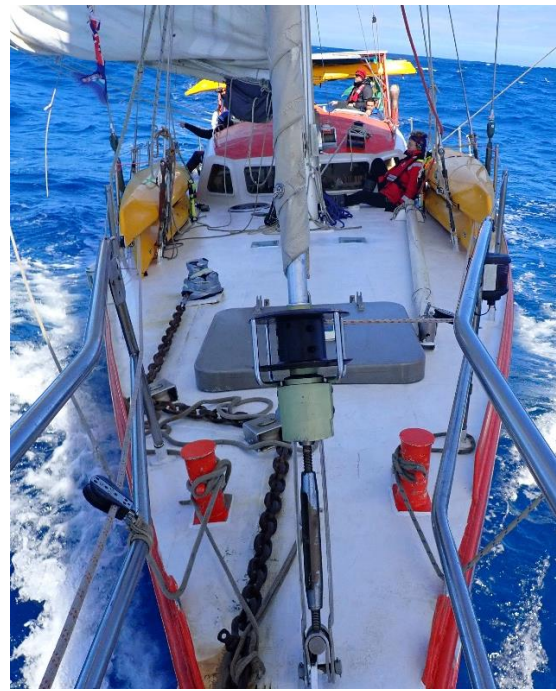
L-R: Paul Murphy, Sean Pierce, Eileen Murphy, Lonan Byrne, Ronan O'Connor, Emma Glanville, Margaret Farrell

2 SOUTH GEORGIA BY KAYAK - EXPEDITION DIARY

2.1 Falklands



Ypake II at anchor in Port Stanley



On passage to South Georgia, Margaret on deck

2.2 On Passage - Falklands to South Georgia

Eileen Murphy

Sun 17th Nov- Sun 24th Nov

Sailed on board Ypake II from Port Stanley to Grytviken. On Day 5 of the passage (21st Nov), one of our team members, Margaret Farrell sustained a bad wrist injury during a knock down.

Following the incident, all of our options were discussed and we came to the decision to continue on to Grytviken in the hope that there may be a chance of receiving medical attention there or even of evacuation back to the Falkland Islands. She bore her injury, which turned out to be a fracture, with great positivity and composure. She may not have been able to kayak with us, but she made up for the lack of exercise on the water by swimming daily.

We had so many objectives in our trip plan but realized that we could not possibly achieve all of them. The sailing trip had taken 3 days longer than expected and we would have to budget for the same on the return journey. We would have to leave South Georgia by December 5th latest to allow us time to get back to Port Stanley in time to catch flights home. This meant that we would have 11 days in South Georgia. We would work within the confines of the weather and the capabilities of the yacht to achieve as many of our objectives as possible.

2.3 Kayaking in South Georgia

The map shows the itinerary followed by the Expedition and the harbour mooring and kayak landing points. The green trace shows movement east from Falklands to reception at Grytviken, to Drygalski Fjord, and the red trace the journey west from Drygalski to Grytviken to Rosita Harbour in the north and home. We covered the coast to the full extent of our permit with the exception of King Haakon Bay, which we had to forego due to lack of time.



Sun 24th Nov Arrival in South Georgia

Great excitement after a long crossing – our first view of South Georgia. In beautiful weather we traversed the north coast, passing Willis and Bird Islands, heading for check-in at Grytviken. With lenticular clouds hanging in the evening sun, we were satisfied to have arrived at last, and anticipating what the days ahead would bring.

Mon 25th Nov A Day in Grytviken

Arrival by yacht in Grytviken at 4am. It was amazing to come up on board in the morning and witness the sheer magnificence of our surroundings. We were overjoyed to be finally on dry land and awe struck to be in this amazing historic sheltered amphitheatre dominated by the rusting hulk of the old whaling station. It was a beautiful clear day with the light reflecting all around us. To cap it all, we could see a pod of humpback whales blowing and feeding in the heart of Cumberland Bay.

Our Skipper registered Ypake II with the authorities and Emma Jones, Government Officer, came on board to check the vessel for compliancy and to complete immigration procedures. We watched the Biosecurity video which is mandatory viewing for all visitors. We checked out the possibility of access to x-ray or medical attention for Margaret but, unfortunately, her injury was not deemed serious enough. Early evacuation was also ruled out as there were no free places on any craft due to leave in the next week. As a result of her injury, Margaret would not be able to take part in the kayaking element of

the trip which was very unfortunate for her. Wherever possible, we tried to organize our daily itinerary in such a way that she could join us on land on the RIB.



Morning arrival in Grytviken – calm after the storm.

We spent our time in Grytviken soaking up the special atmosphere, visiting the Museum, Church and Graveyard, King Edward Point, and exploring the surrounding hills. It was our first experience of being so close to the elephant and Fur Seals. We had received a lot of advice from Kicki Ericson on how to behave in their presence. This advice was to prove invaluable for our forthcoming adventures. Kicki and partner Thies Matzen had spent many years living in South Georgia on their yacht and studying the behaviour of these animals at close quarters.

Tues 26th Nov Grytviken to Cobbler's Cove

An early start in warm sunshine had us preparing our sea kayaks and kit for our first day on the water in South Georgia.

We paddled from Grytviken to Cobblers Cove in perfect calm conditions. We crossed Cumberland Bay in total awe of our surroundings and in total disbelief of our luck with the weather. We landed for lunch near Cave Point.



**Elephant Seal guest
for lunch**

**Emma in Cumberland
Bay**

This was the first of many landings on beaches inhabited by Fur Seals. These landings were to become one of the main daily challenges. We successfully used the tactics and advice given to us by Kiki and Thies again and again.

After lunch, we kayaked between Right Whale Rocks and Barff Point and “hugged” the coast staying inside West and East Skerry as we made our way slowly down to Cobbler’s Cove. It was a most enjoyable paddle with plenty of photo opportunities. Someone commented that it was like a “visual melting pot of the best of Greenland, Norway, North Donegal, Antarctica and the Zoo”.



Ronan in Cumberland Bay

We encountered our first iceberg and at Rookery Point paddled close to the Macaroni penguin colony. Meanwhile, Margaret had stayed on the yacht which was following us south and had a wonderful whale watching afternoon close to the right Whale Rocks. As we entered Cobbler’s Cove, we noticed the yacht was slow to come in from the open sea. It had hit an isolated rock in 75m of water just outside the Cove which resulted in damage to the keel. As it could not be retracted fully, mooring places had to be carefully planned.

We stayed overnight on the yacht at this beautiful sheltered Cobblers Cove, with the constant sounds of restless seals in the background.

Wed 27th Nov Cobbler’s Cove to St. Andrews Bay

We motored from Cobblers Cove to Clark Point just north of St. Andrews Bay. What a wonderful sight! The mist began to rise as we kayaked into the western corner of St. Andrews Bay revealing the mighty trio of peaks, Nordenskold, Mount King and Mount Brooker. King Penguin colonies lined the shoreline as we made our way carefully towards our landing spot. Margaret and Santi arrived by RIB and joined us for lunch close to the colony of King Penguins. The Fur Seals were not so abundant here. The

Elephant Seals higher up on the beach were totally relaxed as we made our way carefully around them to the hut in the outwash plain. Some of the team took off their dry suits at this point as temperatures were in the low teens and our plan was to walk up the valley and explore this moon like landscape of morainic debris before heading back to the kayaks. Our exploration was cut short as many of the team were unable to cross the glacial river without the protection of their dry suits, so it was back to sea earlier than planned. A French cruise ship had just arrived in the Bay and many of its passengers were starting to disembark on the beach. We had a quick conversation with a photographer from National Geographic and then kayaked along the entire shoreline of the beach enjoying the sights and sounds of the densely packed Fur Seals, elephant seals and penguins. Finally, we headed back out to sea and made a direct line crossing towards Ypake II.

As there was a strong north to north-east wind forecast for that night and the following day, we motored from St. Andrews Bay to Moltke Harbour in Royal Bay where we would have shelter from the wind and be in a safe location the following day.



Paul in St Andrew's Bay

Thurs 28th Nov Moltke Harbour, Ross Glacier, Royal Bay

It was a grey overcast day as we kayaked from Moltke Harbour into the head of the bay towards the Webb and Ross Glaciers. The ice pack started to thicken as we paddled. It was so atmospheric with thunderous crashing sounds erupting frequently from the Hindle Glacier to our south. The area was thick with fog and menacing sounds. Emma and Eileen decided to stop on the island and avoid going any closer to the head of the glaciers. There were no Fur Seals on this island so a stress-free landing and enjoyable coffee break was had by all before heading back to the comfort of the yacht for lunch.

After lunch, we were in the middle of launching the kayaks when a burning smell was detected in the front section of the yacht. All hands were on deck quickly to quench what could have been a trip-ending

fire scenario - an hour earlier, we were all out either in our kayaks or on the RIB. See Section 5 Incidents.



Eileen and Leopard Seal in Royal Bay

In the afternoon, some of us went across Royal Bay towards Will Point to whale watch. Eileen, Emma and Margaret went into the beach at Whale Valley and walked up to the Gentoo Penguin Colony. We stayed overnight on the yacht in Moltke Harbour. We relaxed over dinner discussing plans for the following day. Drygalski via Gold Harbour was the plan.

Fri 29th Nov Moltke to Drygalski Fjord and Larsen Harbour

We departed Moltke Harbour at 4am. We had hoped to stop at Gold Harbour but wind conditions were unfavourable, so we continued south, arriving in Drygalski 1 pm approx.



Approaching Drygalski Fjord - Sean and Emma

The scenery on the passage south was stunning with icebergs and snow-covered glaciated peaks dominating the horizon. As we rounded Cooper Island, the north westerly wind whipped up the seas and it was a big battle to get into the shelter of Drygalski Fjord. We spent the afternoon sea kayaking along the sheltered northern shore from Hamilton Bay westwards. The rocks here are from Gondwana. We enjoyed a lazy lunch in a magical setting amongst the Gentoo Penguins.



Lunch in Gondwana (Drygalski Fjord, north shore)

Eventually, we crossed the Fjord and entered Larsen Harbour where the yacht had moored at the bend deep in the heart of Larsen. We spent the night on the yacht here in this beautifully sheltered and remote location. We were probably at our most relaxed here singing well into the night. Can't help wondering whether this remote Fjord had ever heard a rendering of a traditional Irish song?

Sat 30th Nov Larsen, Drygalski, Brandt

We kayaked right into the “bowels” of Larsen Harbour. It was a calm cold, wet and foggy day.

Margaret joined us in her kayak for the morning. It was sufficiently calm to do this safely with Paul towing her so she could avoid using her wrist and arm on one side.

We lunched close to where the yacht was moored on the north shore close to the big bend and counted 31 Weddell Seals in the vicinity. In the afternoon, we kayaked out of Larsen into Drygalski and then into Brandt Cove where we went close to the head of the Phillipi Glacier. The air was pierced by the sound of explosions within the ice. The ice was growling, rumbling and crashing everywhere. It was time to get out of there!

We overnighted again in the solitude of deepest Larsen.



Margaret in Larsen Harbour

Sun 1st Dec Larsen to Grytviken

Departed Larsen at 3.30am. Again, we had hoped to make a landing at Gold Harbour, but our Skipper decided it was not safe, so we motored all day back to Grytviken where we arrived 4pm.

It was disappointing not to get to Gold Harbour but whale watching as we made our way north again was fantastic. **See Section 4.** At Grytviken, we enjoyed another trip to the Museum and shop. Over dinner, we had a long discussion about plans for the following days as our time on South Georgia was now starting to run out. We would need to start the trip back on Thurs 5th Dec., so we now had 3 activity days left. How could we best utilize them? The Shackleton Walk was always one of our objectives and especially now as it was something that Margaret could partake in.

Mon 2nd Dec. Grytviken to Fortuna Bay to Prince Olav Harbour

Early 4am departure from Grytviken and we were anchored in the head Fortuna Bay by breakfast time at 8am. One of our ambitions had been to complete the Shackleton Walk from Fortuna into Stromness but a compromise was reached whereby we would go as far as the high point overlooking Stromness and return to the yacht anchored in Fortuna. Time was becoming very tight and we hoped to be in the shelter of Prince Olav Harbour before darkness.

We went ashore on the rib in two groups. The Fur Seals were so densely packed along the beach at Fortuna and they were now guarding pups which made for a challenging walk from the beach onto the hillside. Terminal, medial and lateral moraines, sub glacial rivers, kettle holes were all in abundance in this area...a perfect lesson in fluvio-glacial geography. We followed the route past Crean Lake to the high point overlooking Stromness. What a spectacular and historic spot. We stopped awhile taking in the view of Stromness. What elation Shackleton, Crean and Worsley must have experienced at this same spot after their heroic escape from Elephant Island? We were delighted to be following part of their journey. Crean had returned from this expedition to Ireland and led a relatively quiet life in rural Kerry. He had never received any recognition for the part he played in this amazing story of survival and endurance. We were honouring him in a small way by just being here. As the Shackleton Museum, in Athy, Co. Kildare where Shackleton was born, had endorsed our expedition, it was important to us to reach this spot.



Crean Lake



Lonan looking down on Stromness

We were back at the yacht and ready to depart by 3pm. We motored from Fortuna Bay to Prince Olav Harbour enjoying some whale sightings on the way. As we crossed Possession Bay, the wind had whipped up to gale force south westerly with fierce katabatics rushing down the Bay. We found a nice sheltered anchorage for the night in Prince Olav Harbour, in full view of the old rusting whaling station.

Yet another atmospheric spot with the cries and moans of Fur Seals from the nearby beaches and the fierce down-blasts of wind vying with each other for top spot!

Tues 3rd Dec Circuit of Prince Olav Harbour

Finally, we experienced the renowned South Georgia winds. We paddled close to shore staying as much out of the wind as possible. We paddled around into Elephant Lagoon. There were Fur Seals everywhere and the wind was blowing hard with intermittent rain and sleet. With heads down, 3 of the group paddled around to Black Head and just peeped into Possession Bay. The wind was a fierce 50 knots. We turned back to the safety of the yacht and called it a day early in the afternoon. It was too windy to head for the Bay of Isles and Rosita harbour, so we spent another night dining to the sounds of Fur Seals in full protective mode. Lonan sang some lovely traditional songs and finally played his tin whistle - "A dark horse indeed".



Looking - but not landing (Prince Olav H.)



Albino Fur Seal (Prince Olav H.)

Wed 4th Dec Prince Olav Harbour to Rosita Harbour

Early 4am departure from Prince Olav Harbour and we were breakfasting at 8am in the shelter of Rosita Harbour. This would be our last day of activity and a chance to visit Salisbury Plain and witness at first hand the huge colonies of King Penguins. The weather was in our favour with light westerly winds. We crossed from Rosita Harbour to Dot Island and then headed in towards the Salisbury Plain beach. Initially, a landing looked impossible as the density of Fur Seals was overwhelming. Finally, Paul took the initiative and made the first landing. We came in together and formed a unit as we protected ourselves with our bodgers and paddles from the advances of the Fur Seals. Yet again, Kicki's advice worked. We made our way safely as a unit of 6 individuals up the beach and into the King Penguin colonies. It was incredible to be here in the midst of this city of King Penguins and their young. We felt so honoured and privileged to be able to experience at first hand this wildlife spectacle.

We spent the afternoon in Salisbury Plain savouring every moment. Finally, we returned safely to our kayaks on the beach through the Fur Seals. What a relief! In all our landings and launches on Fur Seal beaches, we had worked together protecting each other and learned to live in harmony with the Fur Seals who, after all, own this remarkable place. Once back on the water, we headed directly back to Rosita Harbour via Tern and Albatross Island. We arrived back at the yacht in time to sort our gear and strap down the kayaks for the big trip back across the Southern Ocean. Our final night in South Georgia was spent moored off Rosita Harbour. Wine was drunk, songs were sung and sleep came quickly for the last time on the trip to the omni-present sounds of grunting moaning Fur Seals.



Lunch on Salisbury Plain – Seán, Emma, Ronan

2.4 Passage to Port Stanley

Thurs 5th – Thurs 12th Dec

The passage back to Falklands was relatively uneventful.

A frisson of excitement was caused by a last incident when water was observed coming through the duck boards in the galley. A quick flurry of investigation pointed to the cause – human error with a tap. Relief and some colouring of the atmosphere followed.

There were two storms, each approx. 50kn and lasting 24 hours, now more tiring than interesting! The procedure adopted was to hove-to and wait out the peak. The passage lasted 8 days.

We arrived in Port Stanley late Friday evening. We meet Thies and Kicki again and bragged of our bodging skills. Time for a last meal on board, a midnight shower in the Star of the Sea seaman's mission, pack and bed.

Margaret, Sean and Eileen were staying an extra few days bird-watching in Falklands, and Margaret finally getting attention in hospital for her wrist.

In the morning - good-byes all round, and a taxi to RAF, Mount Pleasant for the flight home.

3 Kayaking in South Georgia

3.1 Kayaks

Kayaks were supplied by Ypake II and were by Atlanti-kayak, model Boreal. They are an expedition-class sea kayak c/w plastic hull, length 5.03m, rudder, 3 x watertight compartments with bulkheads and hatches (incl. day-hatch), key-hole cockpit, spray deck, full safety deck-lines. The kayaks were fit-for-purpose and served the expedition well in all conditions met.

7-off kayaks were carried on deck on passage from Falklands to South Georgia and back. 4x kayak were lashed to gunwales, and 3x were lashed to the rear rib davits. The rib itself was carried below decks on passage.

As yacht equipment, the kayaks were subject to the full Ypake II bio-security programme and were cleaned in Falklands prior to transport on-board to South Georgia.

3.2 Kayaking Kit

The Team carried the following kit:

- Kayak as a group, with line-of-sight within the group at all times
- Rescue Kit – tow rope/short tow (all), compass (all), whistle (all), lights/strobe (all), GPS/EPIRB/PLB (multiple)
- Short Wave Radio (all)
 - Communication within group
 - Communication with yacht/rib
- SAR
 - Thermal/Electronic Flare (all)
 - EPIRB x 3/InReach x2 (Ypake II has InReach)
 - SATphone (one)
- Navigation – charts, maps etc.
- Medical Kit (multiple)
- Spare paddle (multiple)
- Boat Repair Kit (multiple)
- Survival
 - Kisu 8x (x2)
 - Emergency rations - freeze dried meals for 7x days, (all)
- Personal Kit: Full dry suits with hoods, pogies, heavy duty footwear with extra grip, PFD, spray-deck.

3.3 Kayak Entry and Exit

While in South Georgia, kayaks were stored on-deck and on the roof of the main cabin. Ypake II has a lowered back deck, less than 1m off the water, and the rib was used as a platform to enter and exit kayaks on the water.

3.4 Team Coordination

Team recruitment was an elongated process and evolved over a 12-month period. Throughout, there was an emphasis to ensure that the Team as a whole would operate collaboratively with a give-and-take attitude. This was helped by various Team members knowing each other on previous expeditions. This cohesion proved itself throughout the planning process, with team members working together to solve problems and make decisions, and carried into the Expedition itself, enabling the Team to effectively meet the various challenges and incidents that arose. There was good humour, a lot of laughs and singing, and while there were no doubt frustrations and disappointments, in the month away there was not a single row in the Team.

The Team met each day over dinner or breakfast to plan the (next) day's activities. As experienced paddlers, the Team operated on the water essentially as a group of peers and kept largely together or paddled in small groups. There were no kayaking incidents on the water, the only rescue occasioned by a kayaker seal-launching for fun off an ice floe!

Kayaking off a yacht requires two daily plans – the kayak plan and the sailing plan. For the most part they dovetail, and at times there can be conflict, where constraints on the yacht and its safety (e.g. weather, anchorage) will take precedence. Zeek and Santi were creative and generous in facilitating the kayak plan, often sailing from the early hours to leave us in position to achieve that day's objective.

3.5 Camping

The Team was determined to include camping on the island as part of the experience and applied for the required Remote Access Permit (RAP). The approval process is run by the External Advisory Panel (led by Caradoc 'Crag' Jones) and is designed to protect the island environment. The EAP process was exacting and constructive and the RAP permit was approved.

3.6 Fur Seals

Fur Seals were the dominant wild-life on the beaches during our stay, and there was virtually no beach or landing spot where they were not in residence. Populations were dense, with spacing at times down to some 4m-5m, calving/ rearing was on-going, and males exhibited territorial and aggressive behaviour. Seal bites are severe and highly infectious, and we carried iodine and a toothbrush for immediate disinfection at all times.

We had to contend with fur-seals any time we came on land – whether for lunch or sight-seeing. It was imperative that we coped with them, or else be forced to limit our activities.

In the Falklands we met Thies Matzen and Kicki Ericson, who had spent nearly 3 years in South Georgia on their yacht Wanderer III. Kicki gave us a tutorial on bodging, based on 'seal psychology', which allowed us to manoeuvre with confidence among fur-seals:

- Fur Seals respond aggressively to challenge, and as far as humans are concerned these are height and eye-contact. We can't alter our height, but we can avoid eye contact.
- On land, seals are highly territorial. A bodging pole is used to establish territory (not hit seals!). Waving a bodging pole around as we walk increases our territory to the circle described by the pole and keeps the seals at that limit.
- Recommended action therefore is: walk calmly, avoid eye contact, and wave bodging pole in a circle around to establish territory.

This procedure worked very well and enabled us to achieve our objectives. Younger seals could be persistent and were inclined to 'try it on'. In exceptional circumstances, it was not unknown for an aggressive seal to get a poke of a bodger.

We treated fur-seals with great respect and no bites were received over the course of our visit.

On the water fur-seals behave very differently and are not aggressive, even in beach shallows. They were constant companions, and quick to react with a splash when surprised (just like at home).

3.7 Kayaking Risks in South Georgia

All of the Team are experienced sea kayakers, trained to operate in sea-conditions generated by winds up to F6, gusting higher. Team members are trained in incident management and in various techniques of self- and group-rescue. The primary incident management skill is anticipation and prevention.

Particular risks kayaking in South Georgia on are:

3.7.1 Glaciers

We encountered glaciers and associated brash ice in Royal Bay, Drygalski and Brandt Fjords, and Larsen Harbour. The risks are collapse of the glacier face and calving of ice floes, generating waves liable to swamp kayakers. The glaciers on South Georgia are relatively low in height and the risk of a major calving event is minimal. Maintaining a safe distance of 100m was sufficient to mitigate.

In a number of locations there were hanging glaciers, with the possibility of ice blocks falling from a considerable height. Again, avoidance was observed and there were no incidents.

3.7.2 Katabatic/Orographic Winds

Orographic winds are a characteristic weather feature of South Georgia. Westerly winds squeezed by high mountain passes are pushed down ice-laden valleys and produce strong winds that create exposure for kayakers, particularly on the north coast on open crossings across the harbours and bays. Wind velocities can rise from 15kn to over 60kn in the space of minutes. Katabatics are also a feature and are less severe.

With the good weather we had generally during our stay, we experienced high winds of this type, and not the most severe, on one day only in Fortuna Bay.

3.7.3 Weather Close-out

In order to survive a weather close-out event, we carried full survival, medical and repair kit at all times, and freeze-dried meals for up to 7 days.

We organised our kayaking in day-long trips, returning to Ypake II each evening. This limited the planning horizon and meant we could use more accurate short-term weather forecasts. Weather was unusually settled during our visit and we experienced no threat due to weather.

The above precautions are more necessary as kayaking is organised into longer journey times away from the lifeline of the mothership.

4 Wildlife Surveys

4.1 Kayak Survey of Weddell Seals in Larsen Harbour, Drygalski/Brandt Fjords South Georgia, 30th November 2019.

Seán Pierce

4.1.1 Introduction.

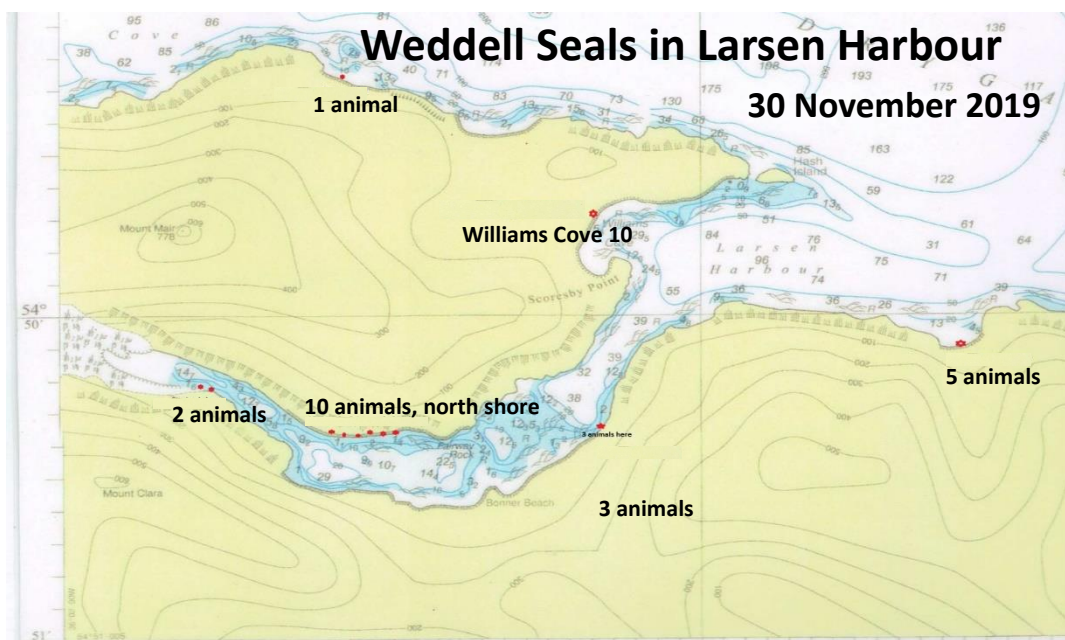
Members of the Expedition met up with Robert Burton, scientist and author, at the Shackleton Autumn School in Athy, Co. Kildare in October 2019. As part of that meeting and discussion it was suggested that any field data of the numbers of Weddell Seals seen on our expedition would be valuable to the on going scientific research of that species on South Georgia. The population of Weddell Seals on South Georgia lies at the northern end of their breeding range.

4.1.2 Methods

Our group arrived in Drygalski Fjord on the 29th November 2019. We kayaked the outer edges of the Drygalski Fjord and stayed on board the yacht Ypake 11 overnight on the 29th and 30th November 2019 in Larsen Harbour. We recorded no Weddell Seals on the eastern beaches of the Drygalski Fjord.

On the morning of the 30th November our group of 7 sea kayakers explored the entire Larsen Harbour area checking all the beaches on both its southern and northern shorelines. Our survey of Larsen Harbour was completed by 1300 hrs. The southern shore was worked from our mooring site off Bonner Beach and the harbour survey continued in an anti clockwise direction along the northern edges to the harbour entrance.

We kayaked from Larsen Harbour to Brandt Fjord during the afternoon of the 30th November 2019. We followed the southern shore of the Drygalski Fjord and also followed the souther shoreline of Brandt Fjord. All beaches were searched en route but we did not manage to survey a large beach on the northern edge of the entrance to Brandt Fjord.



4.1.3 Results

Our group found a total of 30 Weddell Seals in Larsen Harbour. No Weddell Seals were found on Bonner Beach. The first sightings were on a small beach on the south shore of Larsen Harbour very close to the head of the Larsen Glacier.

The majority of the animals were found along the northern beaches between the Larsen Glacier and Williams Cove. Our count totalled 20 animals on the northern beaches. 9 Weddell seals were found along the southern shore of Larsen Harbour between the Larsen Glacier and the entrance to Larsen Harbour. 1 Weddell seal was located on a storm beach on the southern shore of Drygalski Fjord roughly mid-way between the entrances of Larsen and Brandt Fjords. See map.

Some photos of the Weddell Seals in Larsen Harbour on 30th November 2019 are below.



South Shore Larsen Harbour



Williams Cove, Larsen Harbour



Williams Cove, Larsen Harbour



Drygalski Fjord, south shore.

Survey Team

Seán Pierce
Lonan Byrne
Ronan O Connor
Margaret Farrell
Emma Glanville
Eileen Murphy
Paul Murphy

4.2 Whale Sightings, Dryjalski Fjord to Grytviken South Georgia, 1st December 2019

Seán Pierce

Field notes on passage on board the yacht Ypake11.

- Weather: Warm, bright day with sunshine.
- Sea conditions: Relatively calm, slight swell.
- Wind: Light Ne wind, Force 3.
- Visibility: Excellent.

A day spent watching whale watching. A total of 100 + Humpback Whales recorded between Coopers Island and the entrance to Cumberland Bay. A number of tail fluke photos obtained. Animals were all observed actively feeding. A few were seen “broaching” but unfortunately at a distance.







Survey Team

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Lonan Byrne
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Eileen Murphy
Paul Murphy

5 Incident Management

A number of incidents were experienced which related more to the time on passage rather than the kayaking in South Georgia, which passed without incident. The incidents listed below were each potentially serious, were dealt with and enabled the expedition to continue, but not without impact on the Team.

Storms

Outward

A heavy storm was predicted for our crossing from Falklands to South Georgia, with winds forecast at 50kn winds lasting 1 day. The storm we encountered was 70kn winds and was much more extensive, lasting three full days. This allowed a massive build-up of steep waves, estimated at up to 12m in height. The response was to run with the wind with reefed sails, initially south for a day before entering the calm centre, and then north for another day as we encountered high waves again on exit. At its height Ypake II was being violently slammed, at times broadside. Zeek and Santi were in grave mood, and it was a baptism of fire for the less experienced sailors.

On 25th Nov the boat took a very large broadside hit and with a mighty crash went over on its port side, mast in the water - knockdown. Everything and everyone in the boat that was not secured was catapulted across decks and to the port-side walls. The boat righted itself, mast and main hatch intact, and in the stunned silence we tried to comprehend what had happened. Checking Team and crew determined that one Team member was injured with a suspected fracture of the wrist. This was a major injury and is described below.

There was widespread scattering of personal effects and equipment and all galley crockery was broken, for instance, cutlery was propelled with force across the boat, and the cooker was torn from the gimbals and hit the far wall.

The action of the skipper in controlling the boat and preventing a recurrence was highly skilful, and in the succeeding hours we cleaned up and made ship-shape again.

The storm added two days to our passage from Falklands to South Georgia, a total trip of 8 days.

Homeward

Two storms were encountered on the homeward journey, both less severe than above i.e. 24-hour storms, up to 50kn.

To avoid any possibility of recurrence of knockdown, the procedure adopted was to hove-to at the height of the storm until it passed. The home journey took 9 days.

Injuries

Wrist Fracture

In the knockdown, people were also thrown about and one Team member (Margaret) suffered what later transpired to be a fractured wrist. We were two days out from South Georgia and the plan agreed was to continue to our destination and look for medical assistance and a passage home for Margaret, if possible. The wrist was splinted and strapped.

In South Georgia, we learned there was an X-ray machine, and a supply ship returning to Falklands the next day. We were advised that these facilities were restricted under contract for the use of base personnel at King Edward Point and, with regret, permission was ultimately refused on the basis that the injury was not life-threatening. This was a sober introduction to the realities of the remoteness of South Georgia and Margaret faced another three weeks on board Ypake II in splint and strapping before finally getting remedial treatment in hospital back in Port Stanley.

Margaret rose to meet this challenge. She swam every day, joined the team in the rib on the beaches, and experienced all that South Georgia had to offer. And she had one calm day's kayaking in Larsen Harbour, towed by the Team.

Ankle Sprain

A simple fall resulted in a bad ankle sprain for Seán on the very last day. As well it didn't happen earlier.

Fire

On the afternoon of 28th Nov, in Royal Bay, a smell of burning was detected. Prompt action by Santi located and extinguished an electrical fire in a voltage regulator device due to over-load.

Team and crew evacuated to the afterdeck. A headcount showed a team member was missing, asleep throughout the incident!

Corrective action was to fit a spare regulator and power was quickly restored. Preventive actions include improvement of circuit protection and re-location of the regulator to a more fire-proof location.

Collision (Underwater Obstruction)

On the evening of 25th Nov, while motoring slowly in calm waters to an anchorage point in Cooper Bay, the keel of Ypake II hit a submerged rock and came to an abrupt stop. All precautions were being taken, with crew in the bow on radio to the skipper, while most of the Team were in kayaks on the water.

The rock was a sharp pinnacle and the depth under the boat went from 40m to 4m within the space of a few meters. The rock only showed on the electronic chart when looked at with maximum magnification only.

The keel on Ypake II is a lifting 4m keel and the retaining pin, a steel bar 5cm x 30cm, was bent and jammed. The keel housing wasn't breached and the boat remained water-tight. The keel could not be lifted for the rest of the trip, and while it had the potential to limit access to shallow waters, this was not a problem for the remainder of the trip. It was subsequently repaired in Falklands.

Engine Fuel Blockage

There was a fuel blockage due to dirt ingress in the main fuel tank which caused the engine to cut out intermittently. It manifested itself early in the trip and was recurring throughout the Expedition. The source was a mystery as the tank had been scoured and cleaned and the boat fully re-fuelled in Falklands. A running repair was made in South Georgia, creating an interposing header tank, but this was only partly successful. The cause was ultimately found in a small reserve tank feed, feeding the main tank, but not in use.

Apart from the injuries above, this was the most impactful incident. It created uncertainty, with engine outages of 10 minutes requiring a bleed and restart which could happen at any time. It was stressful for skipper and crew, who had to manage this in addition to watches and the usual tasks of sailing in open waters.

Elephant Seal Encounter

In shallow water in Larsen Harbour, alone in a kayak, an elephant seal surfaced close by. It reacted aggressively, baring teeth. Drifting within arms-reach, the seal balked at a bodging paddle action (no contact). Not to be out-done, the seal made a lunge and attacked the bow of the kayak, leaving a good set of teeth marks in the hard plastic. Over quickly as started.

Kayak Damage

The nose of the one of the kayaks was bent out of true during the large storm. It was readily repaired in Grytviken by heat treatment and was fit for purpose.

Acknowledgement

The Team wish to recognise the skill and ingenuity of skipper Zeek, and the calm competence of crew Santi in the face of all challenges. The commitment of both in dealing significant difficulties was essential to the Expedition meeting its objectives.

6 Biosecurity Plan and Review

Paul Murphy

6.1 Biosecurity Protocol Approach

The approach adopted in this Biosecurity Protocol was aimed at ensuring the expedition avoids all risks of introducing or resulting in the spread of non-native of fauna or flora to South Georgia or between the various parts of the island which the team plan to visit. The protocol also ensured that the risk of transfer of disease pathogens was also minimized. The protocol covers three main elements as follows:

1. Pre-departure from Ireland. Ensuring that all equipment is clean and free of soil, seeds, invertebrates and organic matter prior to departure from Ireland.
2. Joining the yacht Ypake II in the Falkland's. Ensuring that all equipment is clean and free of soil, seeds, invertebrates and organic matter prior to boarding the yacht Ypake II in the Falklands. Ypake II has a specific biosecurity protocol (attached as Appendix 1) and the team will be required to operate in full compliance with this.
3. Landing on South Georgia. Ensuring that there is no transfer of soil, seeds, invertebrates, rodents and organic matter from the yacht to South Georgia or between the different locations on South Georgia which the team land on.

6.2 Pre-departure Measures

- Where possible, new clothing and equipment, especially coats, over-trousers, boots and socks to be utilised for the expedition. Where used clothing and equipment is being utilised, these are pre-treated by washing and careful cleaning to ensure it is free from all seeds, soil or organic material.
- Particular attention required for equipment containing Velcro, fastenings, seams, folds, pockets, day sacks, camera bags, tripods and walking sticks. Boots to have open treads which are easy to clean.
- A vacuum cleaner to be used to remove dirt from the inside of pockets, bags, nooks and crannies. A needle will be used to pick out seeds stuck in Velcro or in seams.
- No fresh produce or poultry products to be taken by any expedition members.
- Once equipment is packed, bags to be stored in a clean area (not in a shed or garage to reduce the risk of invertebrates (including earwigs) or mice crawling inside). There is a recognized potential high risk of accidentally taking on earwigs in Stanley, which are a relatively new arrival in the Falklands. Particular high-risk vectors are locally grown produce, and clothing, boots or luggage that has been sitting around in someone's house or shed. This requires a thorough pre-departure inspection of all personal baggage and equipment immediately prior to boarding the yacht.

6.3 Joining the yacht Ypake II in the Falkland's

Prior to boarding the yacht Ypake II in the Falkland's, the packing guidelines as detailed above for pre-departure measures to be repeated. Ypake II's Biosecurity Protocol (attached as Appendix 1) to be adhered to in its entirety. All footwear to be cleaned manually before washing in Virkon prior to embarkation.

- All luggage and equipment to be brought on-board including daypacks and camera bags will be thoroughly inspected and cleaned.

- Special attention to be paid to Velcro, footwear, gaiters, pockets, turn-ups in trousers and hoods of jackets (pockets to be turned inside out or vacuumed).
- Daypacks and camera bags to be brushed out and vacuumed to remove soil, seeds and organic material.
- Kayaks to be transported on board Ypake II on purpose-built cradles and are and will be cleansed in Falklands in accordance with the Ypake II bio-security programme prior to transport on-board to South Georgia.

6.4 Landing on South Georgia

- Clothing inspections and boot washing overseen by the appointed Biosecurity Officer for the expedition team.
- All external surfaces of footwear washed prior to going ashore and again when returning to the ship. Boots cleaned to remove dirt and seeds and then dipped in Virkon, with Virkon being allowed to dry.
- All boats and tenders to be thoroughly inspected for rodents, invertebrates and organic material before embarking passengers, and again when departing shore to return to the ship.
- No loose cargo to be landed (such as loose items in open bags or nets). All cargo to be inspected, boxed and sealed before landing.
- Bags and other equipment to not be left open and unattended ashore.
- Particular care taken with any items left on the ground including day sacks or camera cases where they may pick up soil, seeds and invertebrates which could be transferred between sites.
- Fresh fruit, vegetables, meat, eggs and unpasteurised dairy products not to be taken ashore.
- Any foodstuffs that are brought ashore to be in robust and fully sealed boxes made from and either plastic, metal or wood.
- As different areas of South Georgia are biologically unique specific care to be taken not to move material between regions. Moving between different regions of the island preceded by the following measures:
 - Boot washing facilities to be cleaned and refilled for each new landing or every time personnel move between regions.
 - All personnel inspect clothing, luggage and equipment between landings and repeat cleaning procedures to minimize the risk of intra-regional transfer.
 - All personnel check clothing and equipment for invertebrates and rodents after being on board a vessel that is not their usual base.
- For overnight camping on the island the following additional biosecurity procedures to be undertaken:
 - Tents to be dry brushed inside and out to remove soil, seeds or invertebrates. If needed a damp cloth or hose should be used on heavily soiled areas. Pegs to be scraped clean, washed and then dipped in Virkon.
 - Field and kayak clothing and equipment to be thoroughly cleaned before being used in different areas of South Georgia.

6.5 Biosecurity Review

The biosecurity measures were found to be readily implemented with little effort and provided a high degree of confidence in avoiding the risks of unwittingly introducing or resulting in the spread of any alien species in this unique environment. The legacy of accidental and intentional introductions of alien species on the South Georgia environment however was evident in the vegetation communities at the various whaling stations and in places such as St Andrews Bay where the dominant species included Annual Meadow Grass and Mouse-eared Chickweed. These species rapidly colonise the outwash plains left from retreating glaciers which receive high nutrient inputs from penguin guano and seal dung.

The phenomenal efforts involved in eradicating rodents from the island by the GSGSSI appear to have been successful and merit the high levels of vigilance required to avoid any unintentional re-introductions. This eradication programme will have massive benefits for the diverse range of breeding birds on the island, all of which by necessity nest on the ground rendering the eggs and young vulnerable to predation by rodents.

Throughout the expedition, it was satisfying to note that there were no accumulations of debris or other rubbish on any of the beaches, which is such a familiar sight in almost all other parts of the globe. The rusting remains of the various whaling stations along the northern seaboard have been reclaimed by the wildlife of South Georgia and now provide shelter and breeding habitat for Elephant Seals, Fur Seals and a range of bird species.

The measures adopted by the expedition were successful in avoiding any environmental impacts on the ecology of the island in accordance with the time-honoured objective of *“take nothing but photographs and leave nothing but footprints”*.

7 Medical Plan

Dr. Robert Scanlon, MD

The risks of the trip are compounded by the inherent difficulty in evacuation and getting any care more than advanced first aid onboard in the South Georgia area and the ocean between the Falklands and the South Georgia Islands. Medical facilities available in South Georgia are contracted for the benefit of government employees and are only available to visitors for life threatening emergencies.

Risk assessment and injury prevention are key to avoid placing the group and potential rescuers in a risky situation. This includes pre-trip medical questionnaire, vaccination (tetanus and influenza), dental check-up and ensuring travellers bring enough personal prescription medication for the trip, to be carried on the flight.

Rob is medical GP and was a member of the Expedition until forced to cancel due to injury. He equipped the Expedition medical kit and remained in the role of home-based backup. Rob's own assessment was he could only work as a GP and would need land-based support for managing more serious injuries.

Ronan O'Connor is a trained paramedic and took over the role of medical support on the Expedition, which he fulfilled calmly and confidently.

7.1 Medical Illnesses

Infections, gastro-enteritis, seasickness, dermatological problems, ENT, migraine, psychiatric problems etc: Please see below Medical Risk Assessment table and list of medications/equipment in Expedition inventory.

7.2 Trauma

Minor Injuries

Small lacerations, cooking burns, contusions, tendonitis, minor limb, ENT or eye injuries, back pain.

The list of equipment/medications means that these can be dealt with on-site.

Moderate and Severe Injuries

These injuries have a smaller likelihood of occurring but if they do, will have a very large impact on our trip and likely will require evacuation.

Many of our group are REC3 – REC 5 (Rescue Emergency Care) certified. This includes management of hypothermia, cold injury, drowning and near drowning.

7.3 Seal Bites (unusual site-specific risk)

Immediate irrigation and debridement of necrotic tissue. No primary closure due to high infection risk. Treat with oral metronidazole and doxycycline. (1)

Paddles may be used as 'bodgers' to ward off aggressive/curious seals from damaging people and equipment.

Reference:

1. Kouliev T, Cui V. Treatment and prevention of infection following bites of the Antarctic Fur Seal (*Arctocephalus gazella*). *Open Access Emerg Med.* 2015;7:17–20. Published 2015 Apr 2. doi:10.2147/OAEM.S75442

7.4 Incident Management Requiring Evacuation

Managing incidents is training that all have practiced as part of kayak training in Ireland and most of the group are certified kayak leaders and well versed in assigning roles and managing communications when things go wrong.

Managing an injury/illness will always entail initial stabilisation of the patient and the wound/injury, pain relief and secondary survey.

If evacuation is required, immediately inform GSGSSI Officers at King Edward Point and agree an evacuation strategy based on medical emergency, treatment facility and shipping position options. Also immediately inform Insurers.

If Ypake II is in the closest position to return the injured person to safety, evacuate the injured person back to Port Stanley ourselves.

If we are not able to provide the most rapid transfer back to safety, arrange evacuation via IAATO/other shipping to Port Stanley or Ushuaia. Be prepared for evacuation to take typically 3 days.

Indemnity

Personal medical insurance through Trailfinders for all members of the trip, including cover for repatriation.

7.5 Medical Equipment and Medications - see Appendix 2.

7.6 Medical Plan Review

The main medical incident was a fractured wrist sustained by Margaret during the knockdown on passage to South Georgia. This is dealt with in Section 5.

Facilities to x-ray and evacuate were available in South Georgia under contract, but with deep regret on the part of the authorities, they could not make these available to the Expedition because Margaret's injury was not life-threatening. Margaret spend another 3 weeks on board with a fractured wrist.

This highlights the extreme isolation of South Georgia (there is no airstrip on the island and it is outside helicopter range). The only evacuation to Falklands is by boat and 3 days minimum should be allowed.

8 Conclusions and Recommendations

8.1 Summary

The Expedition was successful, in the following terms:

- Undertaking the GSGSSI approval process without IAATO approval raised the bar in terms of securing planning and approval. Once we established the bona fides of the Expedition and established our commitment to supporting the South Georgia Development Plan objectives we had the unfailing help and support of all we dealt with at GSGSSI. We are deeply appreciative and in conjunction with our sponsors The Shackleton Museum, Athy Ireland, we will continue to promote South Georgia and what it stands for in global conservation and historical/cultural terms.
- The Expedition Objectives listed in the Introduction were achieved.
- This was a kayak expedition. There are few, if any, more remote or exposed locations for kayaking than South Georgia and very few kayak expeditions are fortunate to undertake the challenge. The outcome stands for itself.
- Choosing the right boat, skipper and crew was always key to the success of the Expedition. No one on the Expedition had ever been to South Georgia before, including skipper and crew Zeek and Santi Sundblad. The expedition was a challenge for them and for Ypake II as much as for the Expedition Team. There was incident on this trip. Zeek and Santi were skilful and resolute in meeting the challenges we faced, helped us meet our Expedition objectives, and sacrificed personal comforts to do so. The boat had been through a major re-fit prior to this trip and the Expedition was a significant test of its systems and capabilities. While some improvements will be made after this trip, Ypake II proved itself sea-worthy in the extreme conditions we encountered, including a knockdown in 70kn winds. We are grateful for a safe passage and return.

8.2 Recommendations

8.2.1 Schedule

The schedule for the whole trip is as shown:

	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Nov 19			13	14	15	16	17
			Flight	Flight	Falklands	Falklands	Passage
Nov 19	18	19	20	21	22	23	24
	Passage	Passage	Passage	Passage	Passage	Passage	Passage
Nov 19	25	26	27	28	29	30	31
	South Georgia	South Georgia	South Georgia	South Georgia	South Georgia	South Georgia	South Georgia
Dec 19	2	3	4	5	6	7	8
	South Georgia	South Georgia	South Georgia	Passage	Passage	Passage	Passage
Dec 19	9	10	11	12	13	14	15
	Passage	Passage	Passage	Passage	Passage	Flight	Flight

Total time on expedition was 33 days. The original plan was to spend 28 days on the boat, 13 days on passage (6 days out, 7 days return) yielding 15 days on South Georgia. The actual outturn was 17 days on passage, leaving just 11 days in South Georgia.

This was a tough schedule and put pressure on our time in South Georgia. In fact, while we lost time on passage, we were hugely fortunate to have settled weather throughout our time in South Georgia and were able to use every day to explore on land or sea.

We covered virtually the whole north coast of South Georgia, but did sacrifice desirable objectives e.g. Gold Harbour, Elsehul, King Haakon Bay, and some of the birdlife in Bay of Isles. We didn't camp on the island due to lack of time.

We did however achieve our main objectives, starting with a tour of Grytviken, its iconic church, and commemoration of Shackleton at his grave. Highlights were Elephant Seals in St Andrews's Bay; glaciers, leopard seals and whales in Royal Bay; Fur Seals in Prince Olav Harbour; King Penguins in Salisbury Plain; we thought Drygalski was beyond our reach, but we did reach it and spent 2 days there, a highlight amidst icebergs and glaciers, counting Weddell Seals in Larsen Harbour, and Margaret got to paddle there. We must include a magnificent day on the Shackleton Walk via Crean Lake, peering down over Stromness, our homage in particular to Shackleton and Crean.

For future expeditions, look carefully at the schedule. Ypake II targeted 7 days passage at an average speed of 6kn. Some boats take a more aggressive line and target 5 days on passage, always weather permitting. Else budget more total time away.

We'd have prized more time, and yet are so grateful for the time we had. Unfinished business.

8.2.2 Season

We spent from 24 Nov to 5 Dec in the waters of South Georgia. A dominant feature of our time there was the ubiquitous presence of Fur Seals on the beaches. We had to reckon with the presence of Fur Seals always and while it didn't prevent us from doing anything, we were on their beaches and we had to contend with them.

Earlier in the season might be a better tie to go, with Elephant Seals rather than Fur Seals on the beaches, but they more would be more easily accessible.

APPENDIX 1 Expedition Team

This was an Irish expedition, with Expedition members based in Ireland and representing a number of Irish sea kayaking amateur and professional organisations including East Coast Sea Kayak Club (ECSKC), Shearwater Sea Kayaking, Ardmore Adventures, and West of Ireland Sea Kayaking Association (WISKA). All Expedition members are experienced sea kayakers and are certified to the highest levels by Canoeing Ireland (CI), British Canoe Union (BCU), and Remote Emergency Care (REC First Aid). All of the group are well known to each other, have significant previous experience of extended exploration in remote ocean wilderness regions, and have been variously on previous expeditions together. Individual profiles are below.

Lonan Byrne, Expedition Leader

DOB	17.08.52
Career	Engineer, business owner
Special Interest	Southern Ocean
Skills	Kayaking, diving, sailing, hill-walking, wilderness 1 st aider, kayak incident management
Certifications	British Canoe Union (BCU) 4* Sea Kayak Leader Canoeing Ireland (CI) Coastal Navigation Remote Emergency Care REC 3 First Aid
Expeditions	South Georgia Irish Atlantic Coast Wales, Brittany, Sicily Antarctica 2017 (28 days kayak expedition on Spirit of Sydney, skipper Ezequiel Sundblad)
Open Water	Atlantic: Fastnet Rock/Cape Clear, Skellig Michael, Inishtrahull, Achill-Clare Is, Inishark/Inishbofin/Inishturk/Clare Is., Brittany: Belle Ile, Isle de Molene.
Sailing	Open ocean sailing Ushuaia to Antarctic Peninsula (crew)

Eileen Murphy, Kayak Leader

DOB	30 June 1957
Career	Owner Shearwater Sea Kayaking, sea kayak skills training, certification and expeditioning
Special Interest	Wilderness Exploration
Skills	Sea kayaking, mountaineering, rock-climbing, skiing, wilderness 1 st aider, kayak incident management
Certifications	CI Level 5 Sea Kayak Proficiency CI Level 4 Coach International Sea Kayak Guide Assoc - Coastal Guide and kayak Incident Management CI Advanced Coastal Navigation Mountain leader Rock-climbing Instructor Scottish Winter Mountaineering 1994, IMC Ice Climbing Training 1994, IMC REC 4 First Aid
Expeditions	South Georgia Irish Atlantic Coast, Scotland, Wales Greenland, Iceland, Norway, Crete, Corsica Climbing Alps, Russia
Open Water	See below

Seán Pierce, Kayak Leader

DOB	5.11. 1958
Career	Owner Shearwater Sea Kayaking: sea kayak skills training, certification, expediting
Special Interest	Birdlife and wildlife expert
Skills	River and sea kayaking, mountaineering, wilderness 1 st aider, incident management
Certifications	CI Level 5 Sea Kayak Proficiency CI Level 4 Sea Kayak Instructor CI Advanced Coastal Navigation REC 4, Advanced Wilderness First Aid
Expeditions	South Georgia Irish Atlantic Coast Scotland, Wales Greenland, Iceland, Norway, Crete, Corsica
Open Water	Sean Pierce/Eileen Murphy <ul style="list-style-type: none"> • Solo Circumnavigation of Ireland 1998 (Sean) • Iceland North West Fjords June 2003 (Sean) • Crossing of Irish Sea June 2003 (Sean) • Greenland Cape Farewell July 2004 (Sean) • Solo Circumnavigation of Ireland 2005 (Eileen) • Norway Lofoten Islands & Maelstrom Crossing June 2006 (Sean, Eileen and Paul) • Hebrides Scotland 2007 Staffa & Mull Island Groups (Sean & Eileen) • Outer Hebrides Scotland June 2008 Open sea to Mingulay and Barra west coast (Sean & Eileen) • Outer Hebrides Scotland June 2009 including crossings to Shiantis, Monach Islands (Sean & Eileen) • West Coast of Crete October 2009 Camping Expedition (Sean & Eileen) • East Coast of Crete June 2010 Camping Expedition (Sean & Eileen) • Crossing White Sea Russia June 2011 June Camping Expedition (Sean & Eileen) • Circumnavigation of Corsica 2012 (Sean & Eileen) • Hebrides Scotland 2013 Crossings to Treshnish, Coll Ulva (Sean & Eileen) • Pacific coast of Kamchatka, Russia 2014 (Eileen & Sean) • Hebrides, Scotland Summer Isles and Handa 2015 (Eileen & Sean) • Hebrides, Scotland Iona, Staffa 2016 (Eileen & Sean) • Outer Hebrides, Barra, Mingulay, and Uists 2017 (Eileen & Sean) • Pacific Coast of Sakahlin, Russia June 2018 (Eileen & Sean) • Winter Circumnavigation & Camping Maddalena Islands Sardinia 2018 (Eileen & Sean) • Norway North West Coast Robbensoya to Sommaroy June 2019 (Eileen & Sean)

Margaret Farrell, Kayak Leader

DOB	1 July 1959
Career	Social Worker
Special Interest	River and wilderness sea kayaking
Skills	White water and sea kayaking, mountaineering, trekking, wilderness 1 st aider
Certifications	CI Level 4 Sea Kayak Proficiency Canoeing Ireland (CI) Advanced Coastal Navigation REC 3 First Aid
Expeditions	South Georgia Irish Atlantic Coast Wales, Scotland Greenland, Alaska, Sweden, Corsica, New Zealand, Haida Gwai Trekking in India, Nepal, Alps, & Peru
Open Water	30 year's kayaking in open waters in above locations.

Paul Murphy, Ecologist

DOB	24-6-1963
Career	Owner, EirEco Ltd, Environmental and Ecological Consultants
Special Interest	Global and local environment/ecology
Skills	Kayaking, rock-climbing, mountaineering, alpine and ski mountaineering, scuba diving, sailing, first aid
Certifications	Level 4 Sea Kayaker PADI Dive Master Powerboat Level 3 Day Skipper Cert REC 3 First Aid
Expeditions	South Georgia Irish Atlantic Coast Scotland, Wales, Norway Sailing Spain, Norway
Open Water	Multi-day kayaking in exposed coasts of Lofoten Islands Norway, Isle of Skye, Hebrides, North Wales, and Ireland. Multi-day open ocean sailing passages from Faro (Spain) to Galway (Ireland), Galway (Ireland) to Svolvær (Norway), Galway (Ireland) to Camarinas (Spain).

Emma Glanville, Conservationist

DOB	24-10-73
Career:	National Park Ranger, Irish National Parks and Wildlife Service
Special Interest	Conservation, education
Skills:	Kayaking, sailing, rock climbing, mountaineering, first aid, mountain biking, orienteering, skiing, snowboarding
Certifications	CI Level 4 Sea Kayak Proficiency, Canoeing Ireland (CI) Advanced Coastal Navigation, Mountain skills, Mountain leader training, occupational first aid, RIB coxswain.

Expeditions **South Georgia**
 Kayaking - Atlantic coast Ireland, Scotland, Norway, Ibiza, Malta.
 Hillwalking – Ireland, Scotland, UK, Patagonia, Italy, Spain.

Open Water Lives Ireland West Coast. 15 years kayaking in open waters in above locations.

Ronan O'Connor, Kayak Leader

DOB 01.10.79

Career Owner Ardmore Adventures

Special Interest Coastal & River Exploration, Marine Wildlife

Skills Kayaking, sailing, hill-walking, wilderness first Aid,
 Marine incident management, Lifesaving & Marine Rescue

Certifications International Sea Kayak Guide Assoc. - Advanced Coastal Guide
 Canoeing Ireland - Level 5
 Canoeing Ireland - Sea Kayak & River Kayak Instructor Trainer & Assessor
 REC - Wilderness First Aid Trainer
 WEMSI - EMT
 Sailing Ireland - Sailing & Powerboat Instructor
 RYA- Day Skipper Licence
 RYA - Yachtmaster Shorebased
 Water Safety Ireland - Rescue Boat Driver Trainer
 Water Safety Ireland - Lifeguard Trainer & Assessor
 Rock Climbing Instructor

Expeditions **South Georgia**
 Irish Atlantic Coast, Croatia, Nepal

Open Water Crossing North Channel Scotland to Ireland
 Dalmatian Coast Islands
 Molat - Olib (Croatia) 15km Open water night Kayak

APPENDIX 2 Medical Equipment and Medications

Medical Equipment

The list below has been compiled after getting the list of equipment on the vessel and adding what I feel we also require, in conjunction with the “Guidelines for Provision of care in South Georgia”

Equipment with (B) means that equipment is confirmed as already being on the vessel.

Diagnostic

- Stethoscope (B)
- Sphygmomanometer (B)
- Low reading thermometer
- O2 saturation monitor
- BP cuff
- Urine dipsticks
- Glucometer
- Ophthalmoscope/ otoscope with tongue depressors
- Fluorescein eye drops

Medications

Antibiotics

Sufficiently broad spectrum to cover skin, ENT, urinary and chest infections and animal bites (flucloxacillin, phenoxymethylpenicillin, ciprofloxacin, cefalexin, metronidazole, doxycycline, antibiotic and steroid eye and ear drops.

Anti-emetics

Scopoderm patches, cinnarizine cyclizine oral and IM/SC, prochlorperazine oral and IM and ondansetron IM.

Domperidone and loperamide in case of gastroenteritis outbreak.

Oral rehydration sachets in case of prolonged vomiting.

Anxiolytics

Diazepam, quetiapine

Other Medications

- Omeprazole
- Aspirin 300mg
- Furosemide
- Prednisolone
- Salbutamol
- Adrenaline 1:1000 IM

Antivirals

Valaciclovir tablets (shingles or herpes labialis)

Analgesia

Both oral and IM injections, sufficient to last 10 days in case of long evacuation: Paracetamol, diclofenac, codeine, tramadol. Tetracaine eye drops, pregabalin (neuropathic pain)

Trauma Management

- Wound irrigation fluid (B)
- Hydrogen peroxide (B)
- Steristrip
- Scalpel
- Sterile needles and syringes (B)
- sterile/non sterile gloves (B)
- Sutures: 3/0 (B), 6/0 , non-absorbable
- Suture kit, sterile scissors, forceps holders (B)
- Compeed
- Absorbent/non adherent base dressings: jelonet, melonin,
- Impregnated dressing: inadine
- Dressing bandages (B)
- Gauze (B)
- Trauma dressing
- Triangular bandages
- Sling (B)

- Chlorphenamine IM
- cetirizine
- Local anaesthetic
- Topical iodine
- Friars Balsam
- Salbutamol
- IV fluid and giving set
- Tropicamide and eye anaesthetic drops
- Topical steroids.
- Haemorrhoid suppositories and cream
- Limb splint inflatable (B)
- SAM splints (B)
- Finger splint (B)
- Eye pad (B)
- Spinal board (B)
- Head Blocks
- Cervical collar (B)
- Vacuum mattress (B)
- Hypothermia blanket (B)
- Heat packs (B)
- Flammazine cream
- O2 and O2 mask (B)

Medical Risk Assessment

Risk type	subtype	setting	likelihood	severity	Proactive (modify risk)	reactive (treat post risk)
infectious	gastroenteritis (viral, giardia, bacterial)	all	frequent	medium	hygiene	symptomatic or specific medications (ciprofloxacin, metronidazole)
infectious	coryza	all	frequent	low	hygiene	symptomatic treatment
infectious	cellulitis/LRTI/UTI/pharyngitis	all	occasional	low	n/a	specific antibiotics
infectious	influenza	all	occasional	medium	vaccination	symptomatic treatment
environmental	ultraviolet	all	frequent	low	sunscreen, sunglasses	symptomatic treatment
environmental	seasickness	all	frequent	medium	patch, tablets	symptomatic treatment and SC antiemetics/ rehydration if needed
environmental	hypothermia	all	frequent	high	appropriate dress	rewarming, CPR and evacuation if serious
environmental	mammal bites	kayaking	occasional	medium	avoidance	thorough irrigation, antibiotic prophylaxis (specific infections)
environmental	drowning	all	rare	high	training on board, equipment	rescue, evacuation
traumatic	finger injuries	sailing	occasional	medium	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	falls	sailing	frequent	medium	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	crush injuries	sailing	occasional	high	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	dislocations	sailing	rare	high	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	fractures	sailing	rare	high	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	scalds	sailing	occasional	medium	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	burns	sailing	occasional	medium	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	head injury	sailing	rare	high	training on board, equipment	local treatment, advice from expert if required, potential evacuation
traumatic	blisters	kayaking	frequent	low	experience, technique	local treatment
traumatic	tendonitis	kayaking	occasional	low	experience, technique	symptomatic treatment and antiinflammatories, rest
traumatic	back pain	kayaking	occasional	low	experience, technique	symptomatic treatment and antiinflammatories, rest
traumatic	fractures	kayaking	rare	high	experience, technique	local treatment, advice from expert if required, potential evacuation
traumatic	dislocations	kayaking	rare	high	experience, technique	local treatment, advice from expert if required, potential evacuation
traumatic	head injury	kayaking	rare	high	helmet	local treatment, advice from expert if required, potential evacuation
psychiatric	anxiety	all	rare	medium	group dynamic awareness	discussion, medication if needed (diazepam, pregabalin)
psychiatric	psychosis	all	rare	high	group dynamic awareness	medication (quetiapine)
group	interpersonal problem	sailing	frequent	medium	group dynamic awareness	resolution seeking
group	interpersonal problem	kayaking	frequent	medium	group dynamic awareness	resolution seeking
medical	migraine/headache	all	occasional	low	hydration	analgesia
medical	dehydration	all	rare	low	hydration	hydration
medical	cardiac	all	rare	high	pretrip questionnaire	local treatment, advice from expert if required, potential evacuation
medical	resiratory	all	rare	high	pretrip questionnaire	local treatment, advice from expert if required, potential evacuation
medical	gastrointestinal	all	rare	medium	pretrip questionnaire	local treatment, advice from expert if required, potential evacuation
medical	deep vein thrombosis	all	rare	high	precautions on flight	evacuation
medical	nose bleeds	all	rare	low	pretrip questionnaire	local treatment

APPENDIX 3 S/Y YPAKE II

Selected information relating to skipper, crew and yacht is included below.

Ezequiel Sundblad, Skipper

DOB 05.06.68

Career Yacht Master Offshore, Mountain Guide, IAATO Expedition Leader for Peninsula & South Georgia, business owner.

Special Interest Sailing, Climbing, wildlife, ocean wildlife conservation.

Skills Sailing, mountaineering, kayaking, boat building, mechanic & electronics

Certifications IAATO Expedition Leader for Antarctica Peninsula, South Georgia and Ross Sea
Yacht Master Offshore / STW95, Glaciers National Park Mountain guide,
First Aid Red Cross.

Experience Learn to sail at the age of 14, on Beagle Channel and Magellan Strait since 2002

Solo delivery of S/Y Quixote from Ushuaia to Buenos Aires

2017 Skipper S/Y Spirit of Sydney for 2 trips to Antarctica, January and February. Each trip was four weeks. 3000 nm miles in Drake/Antarctic experience as Skipper in polar region. No incidents.

2008 built first boat YPAKE and sail with family of 5 for seven years from Patagonia up to Norway and back. Sail the Atlantic, the North Sea, Baltic sea, Mediterranean. Over 50.000 nm S/Y YPAKE Patagonia to Norway and back.

Skipper of 44' S/Y ALCIONE of Rome along Italy/Corsica/Sardinia

Currently living aboard S/Y YPAKE II between Brazil, Falkland Islands & Tierra del Fuego for 8 months each year. Living on board, I am well prepared to maintain and repair almost most of the problems can happen aboard during a trip. All the previous activities along my life prepare me for job as Skipper of YPAKE II.

Work in tourism gained experience on dealing with people/expectations

First aid from Military Blue Helmets to Red Cross and Andean Climbing Clubs

Experienced in boat engine maintenance/repair and electrics/electronics.

1991/92/93 work in Yacht Chandlery selling/installing/maintaining boat electronic equipment.

Use and Maintenance course on Refleks Heaters at factory in Denmark.



Santiago Sundblad, Crew

Owner Ypake I, and lives on board

15 years sailing, ocean racing and expedition experience in Atlantic, Mediterranean and Southern Oceans and Antarctica



S/Y YPAKE II

Small Vessel YPAKE II was built in one of the most famous Chilean shipyards ACENAV in Valdivia Chile on the year 2002. Designed from Horacio Ezcurra and build under Bureau Veritas standard. The boat was specially created to operate in Polar region with shallow waters, strong winds and ice conditions.

LOA 18mts

LWL 17mts

Width 4.85mts

Moulded depth is 2,2mts, Depth Keel Up 1 mts, Depth Keel Down 4.5mts

Gross Tons 24d, Net Tons 19

Engine IVECO AIFO 6 cylinders diesel 130hp

Fuel Capacity 4000

Water Maker 100 lts/hs, Water Capacity 1000

Engine range 4000nm at 5kts

Sails 140sq.mts

Heater Refleks 61MFS with water coil and radiator

Boat equipped with state of state of the art electronics (see below)

Very strong hull with 8mm steel on the bottom, and 16mm steel all around the keel box, 6mm on the sides and 3mm deck.

Comfortable Pilot House which allows internal control of sails from sheltered position.

Reliable diesel engine is six cylinders with no turbo and no inter cooler to keep it simple and for easy maintenance.

Windows are replaced by bullet proof glass of 5 layers, 3 of 6mm glass with 2 plastic layers of 1.5mm in the middle to create a 21mm glass very strong, insulated with 10mm polycarbonate inside to avoid extra losses of heat.

The hull is 75mm insulated with high density polyethylene Pink Panther.

We carry all necessary spares likes extra alternators, engine starters, fuel and oil filters, engine and rigging spares.

Detail Ground Tackle

S/Y YPAKE II has 3 anchors:

- 50kg Original Bruce from Belgium on bowsprit with 12mm x 100 mts chain, linked by 16mm x 3mts chain.
- 50kg Original CQR on stern mount with 6 mts 13mm chain and 400 mts of propylene 16mm rope.
- 75kg Admiralty Anchor with 16mm chain and 100 mts of 20mm Nylon rope.
- 4 rolls off 200mts each with 16 mm Polypropylene ropes.
- Bow Anchor Windlass 24v 3000 watts.
- Stern Lofrans Tigres Windlass 12v 1500 watts.

Main anchor mode is to set the Bruce and this anchor works very well in almost all types of bottom, from weed, kelp, sand, mud or rocks. In case of a gale expected sometimes we attach the Bruce then 2mts of

chain with a swivel and put the CQR in the line and then the rest of the chain with this system of 2 anchors we pass winds up to 85kts in Bermuda and in Kikamuit river Rhode Island during the passing of a Tropical Storm.

The tracer helps to keep the anchor low on flat rocky bed bottoms, something useful in Antarctica.

The 75kg Admiralty anchor is in case of really bad gales and is our last hook.

The advantage of a Lifting keel sailboat is we can search for low waters protection and have better protection. Also we can in shallow water put the keel down to stop the boat when we are setting lines ashore and when finish lift it up.

The very strong hull and a 16mm steel crash box on the keel allow us to use this technique we learn from Skip Novak on both Pelagic and Pelagic Australis.

Last ten years living aboard anchoring 80% of the time from Norway to Antarctica teach us something about anchoring/ We still learn new things every day, but we are confident in our system.

S/Y YPAKE II Navigational AIDS

The small vessel YAPKE II has a variety of options to navigate on South Georgia waters. including five GPS systems and three chart plotters to help the navigation.

Equipment includes:

- 1 Furuno 4kw radar with 32nm range.
- 1 Raymarine C70 GPS-ChartPlotter
- 1 Garmin GPS-Map 76CSx portable floating.
- 2 Dell Notebooks with OpenCPN with charts for South Georgia.
- 1 Furuno GP-31 GPS
- 1 Furuno 4kw Radar 32nm range.
- 1 AIS VHF Navicom RT-550AIS Marine Radio
- 1 Kenwood Marine SSB with automatic antenna tuner.
- 1 EPIRB Mc Murdo FastFind
- 1 Inreach two way satellite communication with GPS and Tracking enable.
- 1 SPOT satellite tracker
- 1 Iridium Sat Phone.
- 2 Boat magnetic Compass
- 1 Electronic compass.
- 1 Raymarine depth sounder.
- 1 Raymarine Log.
- 1 Raymarine Windvane.

Paper Charts aboard, 3597 South Georgia, 3592 Stewart Strait, 3587 Harbors and Anchorages in South Georgia, 3585 Prince Olav Harbor and Approaches.

Sailing protocol is lower all lights on night to avoid birds collision, during the day keep a sharp watch for whales to avoid any impact, sail and motor at low speeds, keep a safe distance from any wildlife onshore.

Keep noise at lower possible levels to avoid disturb wildlife, for example going at idle speed motoring near wildlife.