**ANTARCTIC ENDURANCE 2016**

**Expedition report – SG Crossing**

**Executive Summary**

In Feb 2016 the UK Royal Navy & Royal Marines expedition ‘Antarctic Endurance 2016’ successfully completed a land crossing of South Georgia tracing the route taken by Sir Ernest Shackleton, Tom Crean and Frank Worsely 100 years ago. The crossing was completed on foot over 3 and half days by nine members of the expedition in demanding weather conditions. The crossing was part of a wider expedition mounted out of the Falkland Islands in a challenge 67 Yacht which successfully entered the Weddell Sea and crossed to South Georgia, passed Elephant Island, under sail.

**Introduction**

The following report is intended to provide a basic outline the AE16 crossing of South Georgia with an emphasis on the equipment carried, conditions encountered and environmental precautions employed. Further details are available at the expedition website [www.antarcticendurance.co.uk](http://www.antarcticendurance.co.uk) or by contacting the Exped deputy leader at [antarcticendurance16dl@gmail.com](mailto:antarcticendurance16dl@gmail.com)

**Context**

Antarctic Endurance is a UK military expedition to the Antarctic region timed to correspond with the centenary of Shackleton’s Imperial Trans-Antarctic Expedition of 1914-17. The expedition was delivered under the military Adventurous Training (AT) initiative, designed to boost personal development and enhance teamwork by exposing individuals to demanding conditions.

Antarctic Endurance 2016 had three distinct aims: To inspire Royal Navy Sailors and Marines to push their limits and explore their potential: to Celebrate the achievements of Sir Ernest Shackleton and his crew while demonstrating that those same laudable characteristics exist in todays’ armed forces: to Educate by contributing to the on-going debate around team selection and optimisation.

The expedition supporting objectives included:

* Sailing to and landing on the Antarctic Continent,
* Entering the Weddle sea,
* Visiting Elephant Island
* Sailing to South Georgia
* Crossing South Georgia on foot following the recognised Shackleton route

**Team**

The team was a mixed experience group of eight members of the Royal Navy and Royal Marines and one USN officer on exchange to the UK Military. More than half the team were mountaineering novices in the first 5 years of Service. Prior to departure a comprehensive training package was conducted in the Scottish Highlands and the Austrian Alps focusing on mountain navigation, moving together on steep snow and Ice, casualty evacuation and crevasse rescue. The participants were:

* Major Tony Lancashire Royal Marines
* Major William ‘Molly’ MacPherson Royal Marines
* Sergeant Matt Hoey Royal Marines
* Marine Matt Bower
* Surgeon Lieutenant Commander Donald Angus Royal Navy
* Sub Lieutenant Emily Kutarski Royal Navy
* Petty Officer Daniel Hill
* Able Seaman (Diver) Kris Cunningham
* Lieutenant Josh Cowart United States Navy

The safety boat and expedition yacht, Xplore, was operated by the following team for the duration of the crossing:

* Stephen Wilkins
* Commander Tim Winter Royal Navy
* Lieutenant Paul Lane Royal Navy

**Equipment**

The crossing was made on foot in two rope teams with all members wearing full personal protection equipment and carrying basic climbing equipment. Individual equipment included helmets, ice axe, crampons, alpine climbing harness, prussic, belay devices, slings and Ice screws. Two 60M ropes were employed throughout and shovels & snow probes were carried amongst the group. The team employed excellent Hilleberg tents with double poles and snow stakes proving essential in the high winds routinely encountered. Two Iridium satellite phones and Maritime VHF were carried by the team to enable a twice-daily comms schedule to be maintained with the support Yacht throughout the crossing. The expedition land phase was sponsored by Mammut who provided all personal protection clothing and expedition rucksacks.

**Crossing**

The crossing itself took just over three days and involved challenging snow conditions, high winds and limited visibility. Moving on skis in better weather could be expected to substantially reduce this time. Three nights under canvas were spent at:

* Camp 1 : Murray Snowfield – West of the Trident
* Camp 2: Northern tip of Cornwall Peaks (West of Fortuna Glacier)
* Camp 3: Western approaches to Shackleton Valley (Immediately east of Fortuna Bay)

The drop off in King Haakon Bay was completed at first light on the morning of 11th Feb by zodiac from the steel hulled Challenge 67 yacht ‘Xplore’. The yacht was then sailed round to the north-eastern side of the Island to act as a safety craft throughout the crossing; very strong SW winds forecast prevented the yacht from waiting in King Haakon Bay after the team were all ashore. The landing on a shallow beach to the NE of the bay was uneventful, however care should be taken to avoid heavy kelp concentrations and large numbers of Fur seals gathered on the foreshore at this time of year. A short walk over glacial moraine took the team to the base of the Shackleton Gap ice flow, where access to the ice was easily gained. The team roped up into two separate rope parties and donned Crampons at this point, remaining in this configuration whenever on the move until having completed the descent from Breakwind Ridge two and half days later.

The initial gentle gradient and hard ice rapidly gave way to deep snow and steeper slopes. The weather closing in from the SW necessitated precise navigation in extremely limited visibility. Whilst this is relatively straight forward using slope gradients to confirm location it is slow laborious work and consideration should be given to using GPS as a back-up navigation aid. As midday approached the wind increased significantly bringing complete ‘white out conditions’ and making progress very difficult. The decision was made to make camp west of The Trident with high winds necessitating the construction of deep tent pits and the use of double poles to reduce the risk of collapse through build-up of spindrift. Never the less repeated digging out of the tents throughout the night was required to prevent them collapsing or becoming buried.

Rising on day two, again in limited visibility the team continued across lightly crevassed easy angle terrain up to the northern saddle of The Trident. A significant break in the weather with much better visibility on the eastern side of The Trident revealed a short but steep descent down to the Crean glacier approaches. The descent was completed via the northern flank of an avalanche loaded slope and care is recommended over route finding in poor visibility. A long low angled snowfield offers easy access to the heavily crevassed Crean Glacier. The majority of the crevasses were snow filled at this time of year but many of the snow bridges were fragile and did not bear our weight, again necessitating time consuming care. As the afternoon progressed the wind again built to gale force making progress doubly difficult in deep snow. East of the Crean Glacier, shelter from a strong westerly wind is extremely limited and the team headed for the Northern tip of the Cornwall peaks to make camp for the night (it should be noted that Cornwall Peaks were marked as two different mountain ranges on the two map sheets carried by the team and for these purposes we refer to the N-S orientated range immediately to the west of Fortuna Glacier).

Day three brought a complete change in the weather with blue skies, perfect visibility and low winds making relatively swift progress over the Fortuna Glacier possible. The crevasses were in most cases covered and snow bridges robust enough to hold our weight despite at least 8 partial ‘punch throughs’. Gaining Breakwind Ridge in good weather we took a direct descent route culminating immediately to the north of the lake in Fortuna Bay. Although offering an interesting end to the crossing, this route involving almost 1000ft of front point descent is not to be recommended for large parties as it consumed a significant amount of time for a party of 9. The easier gradients to the south are likely to provide an easier descent route.

Arriving on the western edge of Fortuna Bay in darkness and increasing rain the team was never the-less treated to a feast of wildlife in the form of thousands of King Penguins and abundant seals (both Fur and Elephant). Crossing the bay in darkness meant following the pebble beach and involved a thigh deep river crossing at its Eastern edge. Care was taken to avoid overly disturbing wildlife.

Wet from the river crossing and heavy rainfall the decision was made not to attempt Shackleton Valley in the dark after a long day. Flat ground was sought for a third camp site immediately to the East of the Fortuna Bay away from the penguin and seal colonies. In the morning the final short climb up into the saddle and down to Stromness for pick-up was completed without incident.

**Environmental concerns**

Extreme care was taken to ensure the team complied with all environmental and bio-security protocols and guidance whilst in SG. Pre-departure briefings were thorough and despite a first light drop off, all kit was thoroughly cleaned and hoovered and boots disinfected in advance of each occasion of stepping ashore on SG. Nothing was left on, or removed from, the Island at any stage.

**Safety Measures**

The team included a military doctor with a full trauma med kit and casualty evacuation plans were thoroughly briefed and practiced in advance. The yacht ‘Xplore’ shadowed our progress throughout from the north-eastern shore of the Island providing three alternative emergency rendezvous options in Possession Bay, Antarctic Bay and Fortuna Bay. Careful consideration of forecast weather conditions and proposed egress points are advised as an essential component of any decision to utilise these alternate options.

**Summary Points**

Crossing South Georgia by this route is an enormously rewarding trek that is neither technical nor steep. Weather and remoteness however, make it a serious undertaking that should not be underestimated. In Feb 2016 the going under foot was much harder than anticipated and strong winds (gusting in excess of 80 knots) and very limited visibility made progress difficult for much of the crossing. Proper mental preparation, robust equipment (especially tents) and built in stores contingency (food, fuel etc.) were essential for a successful and safe crossing.