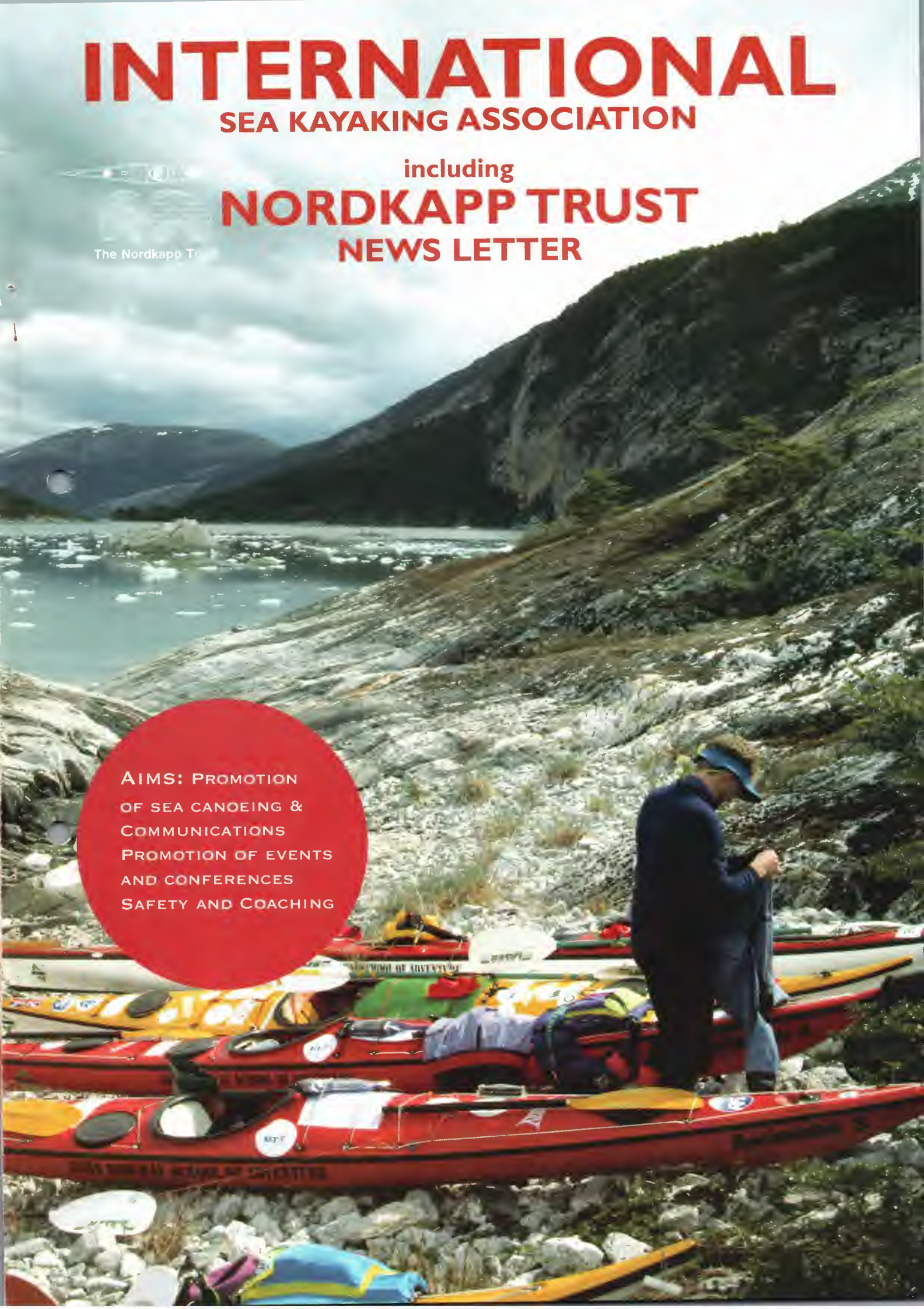
INTERNATIONAL
SEA KAYAKING ASSOCIATION

including

NORDKAPP TRUST
NEWS LETTER



AIMS: PROMOTION OF SEA CANOEING & COMMUNICATIONS PROMOTION OF EVENTS AND CONFERENCES SAFETY AND COACHING

THE NORDKAPP TRUST

The Trust was set up in the U.K. by Frank Goodman, Nigel Dennis and John Ramwell.

In 1997 Stan Chladek joined the team with the view of helping to develop a North American arm of the Trust.

The Trust decided to form a network of centres that would agree to set standards of equipment and instruction. The Trust monitors all awards and indemnifies BCU Coaches when working for the Trust in the US. The idea was developed and the following Premier Centres were set up to run BCU coaching and trust coarses:

NORTH AMERICA:

MAINE ISLAND KAYAK CO, ATLANTIC KAYAK TOURS, SWEETWATER KAYAKS AND GREAT RIVER OUTFITTERS.

GREAT BRITAIN:

A.S.S.C.

Tom Bergh, Bill Lozano, Dave Ide and Scott Williams joined to form a working committee in the US.

Bill Lozano accepted the position of Trust Secretary and we have now developed further having three levels of centres.

- Premier Centres.
- Trust Centres.
- Associate Centres.

This enables Centres to join the Trust at any level and with Trust help and support grow and develop into Premier Centres.

The Trust also offers self employed Coaches the opportunity of joining as Pro members, this will enable them to take advantage of buying into the Trusts Insurance scheme, offering liability cover.

The Trust has decided to use the British Canoe Union Coaching scheme, but also recognises that there is a demand for instruction in other areas of sea kayaking ie., Traditional methods (Inuit), Guiding and Expeditioning etc.

The following courses and awards have been developed by the Trust:

- The Rough Water award. (None tidal advanced)
- Inuit awards
- Navigation awards to include an advanced award.

TO FOLLOW:

- Expedition and Guiding awards.

TRUST AIMS:

The aim of the Trust is to promote safe sea kayaking worldwide using a high standard of guides, expedition leaders and coaches. This is being achieved through Trust appointed sea kayaking centres on an international basis.

The Trust also works hard in developing and running sea kayak events.

Events currently being run in North America & Great Britain. Plans are developing for future events in Newfoundland, Israel and Germany.

We aim to locate our Centres in prime kayaking areas. All will have unique areas of operation to offer sea kayakers at every level from instruction to expeditioning.

FOR FURTHER DETAILS PLEASE CONTACT:

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INFORMATION AVAILABLE ON:

EXPEDITIONS.
GUIDED TOURS/HOLIDAYS.
INTERNATIONAL SYMPOSIUMS.
TRUST CENTRES.
PRO-MEMBERS.
TRUST COURSES & AWARDS.
BCU COACHING COURSES.

Ocean Kayaker

Issue # 37 November, 2000

incorporating the 'International Sea Kayak Association and 'Nordkapp Trust' Newsletters

editorial

by John Ramwell

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For years I have 'banged on' about the lack of opportunities for young people to experience residential outdoor programmes. School cannot afford the luxury of giving outdoor education any priority when they are faced with achieving on the academic league tables and with the current emphasis on safety it means that there are fewer teachers & youth leaders prepared to take on what is now a very onourous responsibility. So I was delighted to hear about a conference on Risk & Adventure in Society to be staged at the Royal Geographical Society during last November, 2000 with one of the key note speakers being HRH Prince Philip. It is labelled as "A Conference for policy makers, practioners and anyone concerned with society's attitude towards risk".

It says on the promotional brochure.... "Speakers will challenge the trend towards excessive caution, explore the positive benefits of sensible risk taking and bring a sense of realism to questions of risk and safety. The conference will show how important it is that young people have the opportunity to develop balanced attitudes to risk and will highlight the need to maintain challenge and adventure in a healthy society.

"The worship of 'safety' represents a profoundly pessimistic attitude towards human potential". Frank Furedi "A Culture of Fear"

I would love to have attended this conference but the best I can do is provide a short report in a subsequent issue of this newsletter.

THE BCU SEA TOURING A.G.M. I went over to Whitby on the east coast to attend this meeting during early October. A great turn out and good to see so many new faces as our activity continues to attract more and more paddlers. Welcome to them all. The evening presentation was from **Peter Bray** and he had us all enthralled with his graphic - yet underplayed - account of his ordeal whilst waiting for rescue following his aborting his attempt to cross the North Atlantic. Peter has promised me a written report on all this for the ISKA newsletter, so watch out for this in the next issue of OCEAN KAYAKER. He told us that even at the worst moments whilst waiting for rescue he was planning his next attempt in 2001. Agreeably all his sponsors are staying with him and Kirtain Kayaks will be building his new kayak following lessons learnt from this years attempt.

My address is, for copy for this magazine:

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CONTENTS

WITH THIS ISSUE COMES THE UBIQUITOUS ANNUAL REQUEST FOR YOUR SUB-SCRIPTION RENEWAL TO I.S.K.A.....*I have not raised the cost of membership for next year. So help me keep costs down by renewing a.s.a.p. TA.*

Bylot Island

William Baffin and Robert Bylot - 1615, 1616
On their first voyage Baffin and Bylot charted the south coast of Baffin Island, gathering information on anchorages, tides and currents in the area they began their discoveries in the area of Nottingham, Salisbury and Mill Islands the Discovery reached her northern limit in Foxe Channel, somewhere beyond Cape Comfort and Southampton Island Bylot and Baffin believed they saw the coast, leading them to the conclusion that they had entered a great bay and decided to turn back Baffin was convinced that the Northwest Passage could not be found in this direction and would lie up Davis Strait if it existed on their second voyage, Bylot and Baffin sailed to the entrance of Smith Sound where they changed direction and, in turn, discovered the Carey Islands following the coasts of Ellesmere, Devon and Bylot Islands they also discovered Jones and Lancaster Sounds

Baffin was convinced that there was no passage north of Davis Strait and concluded that there was in fact no Northwest Passage his conclusions regarding Davis Strait were accepted and it was not until two centuries later that the area would again attract interest the naming of Smith, Jones and Lancaster Sounds and of Wolstenholme Sound and Cape Dudley Digges honoured five of the leading "Adventurers", whose financial backing and interest in Arctic research had been responsible for adding so greatly to the known coastlines of the North

Bylot Island

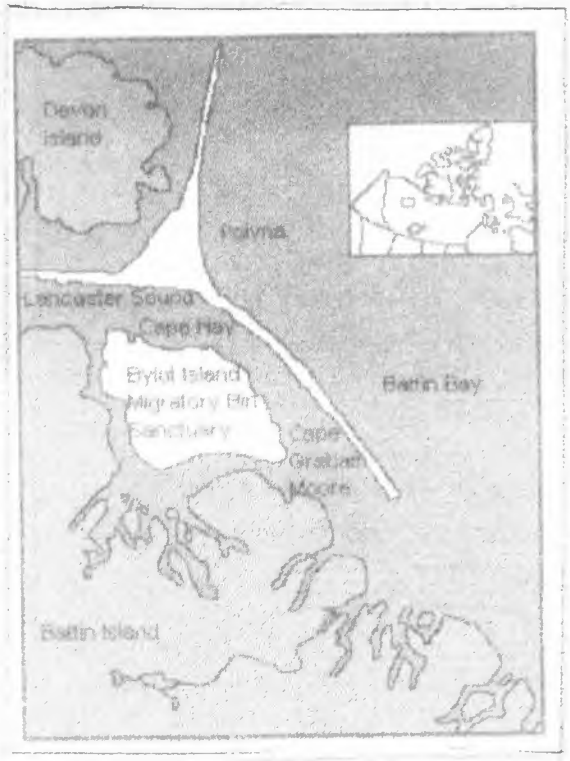
by Edi Albertt
Taken from 'Sea Canoeing',
the journal of the Tasmanian Sea Canoeing Club, with grateful thanks

...but as for me, I am tormented with an everlasting itch for things remote... (Herman Melville, Moby Dick)

Hot sticky oppressive heat. Business suited young men roller blading to work. Girly bars and body piercing parlours. Iced lattes and the biggest air-conditioned book shop I have ever seen. A complete culture shock compared to my usual existence in the Scottish Highlands. Yet, only a few hours flight north of Ottawa, and into the Eastern Arctic there was a strange sensation of deja vu.

Our flight north hopped via Iqaluit, the capital of the newly created territory Nunavut at the south end of Baffin Island. Nunavut is the result of a long negotiated land claim by the indigenous Inuit people. It covers a fifth of Canada, yet contains barely 22,000 thousand souls. In Iqualuit we were greeted by horizontal rain and a barren landscape studded with hundreds of small patches of windswept water. The runway rose out of the sea and terminated amidst a higgledy piggledy mass of prefabricated sheds, shops and houses. It is an artificial, alcohol soaked society, created by the all too familiar bureaucratic interfacing of a western consumer oriented civilisation with a hitherto nomadic and subsistence based one. All very reminiscent of the Western and Northern Isles of Scotland.

The final leg took us to Pond Inlet, at the far north eastern end of Baffin Island. This inlet was first visited by Europeans in 1818 (though who will ever know if the Vikings got here 800 years earlier). The first permanent settlement was created here by the Hudson's Bay Company in 1921, and in the 1960s the hitherto nomadic Inuit came to settle so that their children could attend the schools and health clinics established by political will in the deep south. Today the primary school is better equipped than mine ever was and a sign up in the window of the health centre seemed to say it all. Summer staffing shortage. For six weeks we will be down to only two nurses... so eat well, and stock up on Panadeine and condoms.



The view north from Pond Inlet is, to use an overworked Canadian term, awesome. By any standards. The deep blue sound, studded with giant ice bergs and migrating narwhal, looks a quarter of its 23km width. The sheer immensity of the cliffs on Bylot's southern shore blows all attempts at gaining a true perspective. A small pimple rises to the east of the nearest glacier; it is three thousand feet high and immediately backed by jagged teeth rising yet another fifteen hundred feet.

The ice had been a week late breaking
up this year. However, the day before our arrival a fierce easterly pushed all the ice out of the way and choked up the entrance to Navy Board Inlet. Most of that ice would have to come back past Pond Inlet to be flushed out into the Davis Strait - but at least we might make our crossing to Bylot Island before that happened. It seemed the wind would never die so we pushed east (the wrong way) along the coast to the narrows where we might at least climb up Mount Herodier to get a clear view across the sound. You'd look pretty stupid (and might end up dead) doing most of a long crossing only to discover that egress on the far side was impossible due to landfast ice pans.

Eventually the wind dropped and we were greeted by a millpond and a slowly clearing morning mist. A thin strip of tide, close in to our shore, was setting easterly and bringing all shapes and sizes of ice with it. We played dodgems for a kilometre or so and then crossed into clear calm water.

If crossing to Bylot had been a great day the following one was even better. The miles just passed by unnoticed as we wove our way along the coast in a maze of grounded bergs and floating pans. Arches and overhangs, knife edged aretes and grotesque gargoyles appeared before us. Every form or idea in nature seemed to be represented here - in hues of pure blue-white. In 530 AD, that little known but prolific explorer, St Brendan, wrote the world's first description of an iceberg. He called them ...floating crystal castles ... the colour of a silver veil. And so they were ... and much more! At the end of the day we were on sensory overload and suffering from sunburn. We had reached Dufour point, the most southwesterly extremity of the island and were in high spirits.

The next section of the journey took us north up Navy Board Inlet - and along coast line known in the local Inuktitut tongue as Qaangiqsiriittuq - the never ending stretch. Miles and miles of coarse beach backed by low bluffs. The ice provided constant interest but petered out about half way up the coast.

The Inuit have an ancient custom of building Inukshuks - rocky marker cairns "in the shape of a man". They also have evolved a more recent custom of discarding hundred gallon fuel cans at regular intervals along the coast. Although this part of the island is rarely visited in summer, during the winter Navy Board Inlet becomes a skidoo highway for hunting trips to the floe edge up in Lancaster Sound. We were fortunate to be accompanied by Limache Kadloo, a local Inuit whose grandfather had been one of only a handful of men ever to kayak in these waters. Those skills, like many, had atrophied and died by the 1930s. Ironically, we were the next handful to paddle these waters and were teaching kayaking skills back to a person whose culture had originally developed them. Limache was a likeable and interesting character, even if his rusty 1942 Lee Enfield 303 didn't fill us with much confidence as an anti polar bear device. He had a hearty laugh and an even heartier appetite. If the dehydrated food was playing hell with us - how much more so for an avowed carnivore who was used to breakfasting on raw seal meat and eating caribou by the haunch.

We paddled on and up past Qarlikturvik - the place of putting on pants. Limache had no idea as to why it had been given that name - no doubt lost in ancient folklore. Perhaps a famous hunter had suddenly felt a bit chilly and stopped to put on his pants; given that the diurnal temperature range for mid summer is four to ten Centigrade who could blame him? A little further north and we paddled across a large shallow bay, all silted up by centuries of discharge from several large glaciers. It was another long day and some of the under currents of dissent in the group had begun to surface. Too many chiefs and not enough Indians. Sixteen people, even if they were in doubles, was too unwieldy a number to make quick yet democratic decisions on the water. Add to that a significant cohort of ego laden outdoor instructors and, from retrospect, disaster was inevitable. Perhaps Tunatuk (place of the black spot) was a suitable name for the place where our troubles first surfaced.

Our campsite a little further on was, however, resplendent and revitalising in every way. A small soft sandstone gorge, cut down out of the hills above, was filled with clear running water - and so sweet. What was until now a desert landscape (as the Arctic truly is, receiving less than 250mm of precipitation per year) was a vivid green, laced with purples, yellows, pinks and whites. The brief growing season, a mere six weeks at this latitude, was in full swing. The twenty four hour daylight was dampened slightly by the surrounding hills and by 2 am bands of crimson clouds streamed across the sky and gave a pink tinge to the massive grounded bergs that lay stranded on the sand banks.

We battled up the coast into strong headwinds, with a weird moonscape to the east and an icy plateau with five glacial fingers touching the sea to our west. We rounded Canada Point and then made it up to Tay Bay. There was some indefinable importance about reaching this scenic notch in the coast. Perhaps it was because we had all read about an American by the name of Alvah Simon who had purposefully frozen his yacht into the ice and wintered alone on board through three months of complete darkness. Perhaps it was because we had enthusiastically (and probably naively and unrealistically) expected to take a few days off to go hiking. In reality we needed every good day we had to push on if we had any chance of getting around the island.

Tay Bay provided us with our first encounters with the mighty Nanuk. The polar bear demands respect and fear. As the world's largest carnivore he is happy on land, being able to run considerably faster than me, but supremely happy in the sea where his hunting skills are shown off to full effect. Remember the handy hint for polar bear confrontations - you don't have to be able to out run the bear - just at least one of your companions!

The weather never really picked up and we plodded onwards through a sort of cloudy misty rainy yuk - described perfectly in Scotland by the onomatopoeic word dreich, where such weather is commonplace. We could tell that the inlet was opening up and began to feel the influence of the open sea of Lancaster Sound. We had planned a camp just south of the far north west tip of the island and arrived there as the weather deteriorated again. A fierce north easterly was brewing and with it came more rain.

Enormous swell and violent clapotis, barely visible skerries, poor landings and a water temperature of only two degrees. Thick mist and a forecast over our HF radio which predicted force five to six. ....

We walked across the headland, a desolate field of shards of limestone, and looked over the cliffs into the waters through which we must paddle. Enormous swell and violent clapotis, barely visible skerries, poor landings and a water temperature of only two degrees. Thick mist and a forecast over our HF radio which predicted force five to six. We sat it out for three days. We looked at our maps, fiddled with the GPS and gathered weather predictions from various sources. We looked at our plane tickets and the time we had left. It was beginning not to add up. We had covered 130 nautical miles through relatively sheltered waters and still had another 150 or so on a very exposed shore. Instead of the customary westerlies, we were still looking in to the face of a persistent north easterly that was predicted to persist and intensify. In the event it did just what the forecast said.

The decision to turn back wasn't hard - but it was certainly a disappointing one. As if we didn't need reminding of our insignificance in this land we were cheered off by a series of squalls and the first snowfalls of winter. The tension in the group was palpable; from my perspective the group divided into those who were here solely to make the first circumnavigation of the island and those who had come to experience paddling and living in the remote arctic environment. We

spent two days running back through a moderate quartering sea - occasionally the coast line would change direction suitably and we could surf along - often averaging five knots. The atmosphere was tense and became more so when illness forced an exciting surf landing through a maze of grounded ice floes. Illness forced a stopover of three days, and during that time four members of the group decided to leave and push on ahead. After their departure our spirits lifted and the world seemed a rosier place. We took our time and explored. We went hill walking and saw massive sandstone hoodoos - huge figurine columns left standing as the surrounding rock was worn away. Another two fine days put us in place for our crossing back to Pond Inlet. The next day we were greeted by a vicious easterly and we spent most of the day sitting on a mound of gravel looking across to Pond Inlet and hoping our plane wouldn't have to leave without us. Early next morning the wind abated and our final paddle was a pleasant one as the cloud lifted, the sea became oily and the sun eventually peeped out..

We figured people would ask how the trip had gone. Three of us decided that when confronted in the pub we would utter our severely pruned summary: the expedition was a prat, but we had a great time and learnt a lot.

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THE HUMAN HISTORY OF THE ISLAND

About 10,000 years ago the glaciers which had covered most of the Arctic during the last Ice Age began to recede. The landscape exposed by the melting ice was soon populated by tundra plants, animals and birds, while fish and sea mammals quickly expanded into the channels between the Arctic islands.

Shortly after 5000 years ago, groups of Arctic hunters crossed the Bering Strait from Siberia and spread rapidly across Arctic North America. Inuit history calls these people Tunit, while archaeologists name them Palaeo-Eskimos. From their Siberian homeland they brought Asiatic inventions such as the bow and finely tailored skin clothing.

The first Palaeo-Eskimos moved into this area about 4500 years ago. Their settlements are scattered along the sea coasts and in interior valleys. Most consist of the remains of a few tent-dwellings and food caches. Rocks around the outside of the dwelling held down the tent covering of seal skins or caribou hides. Some dwellings contained a central work area lined with stone slabs, with an open hearth in which they burned willow twigs and animal bones for heating and cooking. Excavation of these settlements reveals that the early inhabitants of the Park lived mainly on seals, land mammals, birds, and fish, which they killed and butchered with a variety of stone and bone tools.

The early Palaeo-Eskimo culture continued with relatively few changes for approximately 2000 years. Then, at a time of climatic cooling in the centuries around 2500 years ago, changes in tools and weapons mark the development of new ways of hunting and living in the region. Archaeologists refer to this new way of life as the Dorset culture, since they were first identified near the Baffin Island community of Cape Dorset. Dorset tools and weapons were similar to those of the earlier Palaeo-Eskimos, but included more efficient weapons for hunting sea mammals such as walrus, beluga and narwhal. Their diet was more broadly based, and they had sufficient sea mammal oil to burn in lamps for heat and light. This allowed them to live in more substantial and better insulated winter houses. In the centuries between 1000 and 500 years ago, the Dorset people disappeared and were replaced by the ancestors of the present-day Inuit.

The Inuit arrived in the Eastern Arctic shortly after 1000 years ago. Known as the Thule culture people, they came from Alaska where their ancestors had developed a rich maritime way of life. The technology which the Thule people brought with them from Alaska was much more efficient than that of their Dorset predecessors. It included kayaks, umiaks and dog-sleds for travel, powerful bows for hunting land animals, and the float harpoon for hunting sea mammals as large as Bowhead whales. The early Thule people were expert whalers, and the whales of Baffin Bay must have been an important resource.

The Thule Inuit used metal as well as stone tools to manufacture most of their artifacts. Iron was obtained by trade from Inuit who quarried it from the meteorites at Cape York in northwestern Greenland. Through trade with other Inuit groups, or through occasional direct contact with Norsemen, they also acquired small pieces of smelted metal which originated in the Norse colonies of southwestern Greenland. The seasonal movements of these people is reflected in their settlement pattern. In summer, they lived in skin tents, either on the coast or at fishing and hunting sites in the interior. In winter, they occupied small coastal settlements of semi-subterranean houses built of stone and whale bones, insulated with turf and heated by oil lamps.

The Thule Inuit occupants of the Park were predominantly maritime hunters, but also relied on fishing in rivers and lakes, and on autumn caribou hunts to obtain skins for clothing. Fox traps and caches associated with the Thule occupation are a common archaeological feature in the Park. About 1600 A.D. the climate became considerably colder than at present, as the world entered what is known as the Little Ice Age. At the same time, Europeans began visiting the coasts of Baffin Island and trading with the Inuit. The Thule people seem to have stopped hunting Bowhead whales, and made other changes in their way of life at about this time.

European influence in the area increased greatly during the early nineteenth century, when American and British whalers began hunting and establishing shore stations along the coasts of Baffin Island. Inuit were soon heavily involved in the whaling industry, bringing to it the sea-hunting skills which their ancestors had developed over the previous thousand years.

Robert Bylot, a British sea captain, and William Baffin,

another British navigator, are believed to be the first Europeans to see the island, arriving here in 1616. In the 1800s, bowhead whalers frequented these waters until the industry collapsed in the early 1900s. J. E. Bernier of L'Islet, Quebec, claimed Bylot Island for Canada in 1906 and traders first arrived in 1912. Missionaries followed 17 years later. In the 1960s Inuit gradually settled in government sponsored homes in Pond Inlet which is now a thriving northern community. The local languages are Inuktitut and English. Today, Inuit continue to subsist on the mammals and birds of the area as well as outfitting and guiding the increasing number of Arctic visitors who come to experience the unique atmosphere of Nunavut, Canada's newest territory.

Storm Kayaking

by Keir Gillam
(with thanks to 'Sea Canoeing' the journal of the Tasmanian Sea Canoeing Club)

Editor's note: It is good to get an article like this. It outlines techniques and ideas on kayak design from the point of view of a paddler who has been in challenging conditions in his Nordkapp, in which he obviously feels very much at home. The article may stir some debate from people interested in storm techniques and the pros and cons of different kayak designs, I hope it does - comments/letters/articles to publish in later issues of the magazine are always welcome. Also - it's a really good idea to experiment in tough conditions, and to become aware of your abilities and your kayak's handling capacities - but make sure it is done in a safe situation and with onshore winds, otherwise you could find yourself heading for New Zealand.

On Saturday 18th March four brave, suicidal (or just plain stupid?) paddlers took to the water in 40 to 60 knots of onshore wind at Halfmoon Bay, South Arm near Hobart. We all had a good time learning about our high-wind techniques as we and our kayaks strove to handle the extreme conditions.

Some of the techniques which I used, and some which I have used previously, are as follows. Just as a note, a lot will depend on personal paddling styles, kayak and paddle design. Most importantly the sea conditions will dictate how relevant the following techniques are. There are possibly more techniques that I have not included, partly because I was too busy concentrating and focusing on staying upright while moving forward. In such extreme conditions some if not all techniques do compromise each other to a small or large degree. So try them for yourself in conditions which you feel comfortable in, and see what works for you and your equipment. Keep in mind that most paddlers are standing still or moving backwards in 30 knots.

1. Use the chop in the troughs to lean turn instead of fighting the wind on top of the large breaking waves, but on the other hand you can turn extreme amounts on the tops. Energy conservation is the key to survival.
2. When on top of large waves, lean forward to minimise the time the bow is exposed to the wind, thus reducing wind leverage which will be swinging you beam-on to the wind.

3. Use the wind to ferry glide, this technique works extremely well.

4. The rudder is only used for minute trim in kayaks like the Nordkapp. When you lose forward momentum the rudder helps in swinging you beam-on to the wind.

5. Keep in mind that you are most stable when pointing in to the wind and waves. When you are waiting for people it is advisable to point in to the wind and hold your position by paddling at a rate at which the kayak remains stationary.

6. When beam-on to the wind, do the following: - Lean into strong gusts, (1) so that you are not rolled, and (2) to slow sideways drift caused by the keel line digging into the water. On flat water in strong winds this works extremely well.
- Skim the windward blade on the surface, for two reasons: (1) to help you balance in a low brace so that the wind and waves don't tip you over, and (2) so that the wind cannot get under the blade and lever you over.

7. Look straight ahead to optimise balance.

8. Keep your paddle low in high wind and higher in the lulls for more power. A slower stroke rate with a more deliberate powerful stroke is more effective energy-wise than a higher stroke rate which will tire you quickly.

9. Minimise body windage without compromising paddle technique.

10. Power along in the lulls and try to hold your position in the stronger gusts.

11. Surf techniques are a great advantage when running with the wind in such conditions. The faster you go the less the wind grabs your paddle.

12. The last point - the question of paddle leashes, a gasp of horror to some. They could be useful in such conditions but how much would they get in the way, or more to the point, how dangerous could they be?
To end with, I have a few comments on the kayaks which we used. This is where I may be lynched. (Ed. - comments welcome!) I'll do my best to explain my reasoning in as much detail as I can.

My observations of the two Greenlanders are as follows:

a) With the stern keel cut off, a Greenlander seems to have a lot of trouble turning and some trouble tracking in a straight line. I have always wondered why people modify/cut off the stern keel line on their kayaks. It was not until this Saturday that I could explain the problem. Picture this - waves make your kayak pitch up and down. When the bow is in the air, the stern is in the water. In windy conditions your bow can be pushed to either side very easily while it is above the water, because there is

not much stem keel in the water to resist the wind leverage (lateral movement). Kayaks with minimal stern keels are swung beam-on to the wind very easily and require large amounts of effort to correct constantly. This does not happen with a kayak like the Nordkapp which has a large area of stem keel relative to the size of the boat, making it harder for the wind to swing it around. You can also lessen the wind leverage by leaning the kayak so that the stern keel digs into the water.
b) The Greenlander with a keel was tracking straighter but still had trouble turning.

c) The Greenlanders are very stable.

d) They are large kayaks which in such conditions can be tiring, depending on the paddler.

To remedy the turning problem with the Greenlanders, maybe the bow needs to be cut down to give a similar shape to that of the Nordkapp or the Raider series of kayaks made by Canoe Sports. What happens when kayaks turn is that the stern scribes a greater arc than the bow. When a turn is initiated, pressure builds up on the outside of the bow, pushing it around and accelerating the turn. When surfing down waves this is noticeable (and is accentuated by the stern pushing the boat around as well), particularly if you end up broaching and/or capsizing. A quote from John Winters, a canoe designer and builder: "Cutting away the bow may improve BOTH steering and directional stability". With designing kayaks and canoes you can have lots of desirable features but some may or may not enhance each other, either negatively or positively. A good analogy can be drawn between a kayak and an arrow. The feathers of the arrow are on the back of the shaft to provide stability, not on the front where they would cause erratic flight.

All kayaks are designed with certain uses and sea conditions in mind. You have to conform to these if you want the most out of your chosen design. You can basically paddle anything, but some designs make it easier - an example is paddling a sea kayak as a river kayak or vice versa, it is possible but can be difficult.

Do not get me wrong, I think the Greenlander is a very good kayak but not an ideal one for the conditions we encountered on that very windy Saturday. Whereas the Nordkapp is designed for open ocean conditions, which is maybe why it performed well. It handled the extreme conditions with relative ease due to its smaller size, speed and other design combinations in the hull and deck. As mentioned above, the stern keel performed well in combination with the classic bow shape which allowed for easy turning. It tracked and surfed extremely well, and handled the beam sea and wind efficiently too.

A couple of things I will say about the Nordkapp are that you have to concentrate all the time and it requires you to use your paddling skills and techniques more than other kayaks, but the higher the level of your skill and technique, the easier it is to handle. It has a small cockpit which large paddlers could find a problem, but which smaller paddlers would appreciate. I think that the Nordkapp is one of the most accomplished, proven and arguably one of the best expedition kayaks available today. I have been without a rudder (due to the sea conditions trashing it) in a Nordkapp in open ocean conditions, 5m swell and 2m sea increasing, 30 knot winds, 1.5m rebounding sea and 3-4m rebounding swell, and I wouldn't be caught dead or alive in any other kayak in such conditions, or in conditions like Saturday. So, get out and give one a go.

To finish with, picture the conditions of Saturday. At times it was so surreal, peaceful and calm especially when the dense thick blankets of spray enveloped us with numerous beautiful full mini-rainbows scattered everywhere. Your eyes burned from the impact of salt-laden spray, while your face felt as if it was slowly being torn apart pore by pore.

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Extract from the "Largs & Millport Weekly News" of Friday 11th September 1897.

The Lone Voyager at Millport.

Mr. John Ross Brown, who has achieved fame by sailing some 3500 miles round the coasts of Scotland in a canoe 15 feet long. and who gives lectures at the various coast places he calls at on behalf of the newsboys. is to appear at Millport to-night (Friday). Mr. Brown, who is a surgeon dentist in Greenock. takes a two months' holiday every year and proceeds to voyage in his little craft, delivering his lecture as stated - all this being done on account of the newsboys.

He has already been entirely round Scotland, going up all the lochs in the Firth of Clyde round the Mull of Kintyre, in and about the Hebrides, round Cape Wrath, and Dunnet Head, through the Pentland Firth, into the Firths of Moray, Tay and Forth. down to the Tweed and the Tyne, overland to Carlisle, down the Eden, up the Solway Firth, and up to Firth of Clyde again.

This a synopsis of Mr. Brown's 10 years' cruises,, and he has given his lecture in very many places on these routes. His lecture itself is bright, instructive, and amusing and besides being an able pleading for the cause which Mr. Brown has at heart, is a most enjoyable affair. Mr. Brown, it is perhaps unnecessary to mention, voluntary spends his holiday in this matter, and all his "takings" go to the Mission of which he is the missionary canoeist. The Rev. Archd. Grierson, M.A., is to occupy the chair to-night, and Mr. Brown received the countenance on the platform of the Revs. A. Walker, Jas. Frame, Jas. Black, and Dr. Sinclair, Provost Allan, Messrs A. C. Steven, A. M. Wright and Jas. Wallace.

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Letters

From Duncan R Winning OBE
22 Brisbane Glen Road,
Largs, Ayrshire,
KA30 8QX.
Saturday 23rd September 2000
Dear John,
Thanks for the September copy of the ISKA newsletter / Ocean Kayaker.

Wearing my Professional hat, as one of the very few technical archivists operating in the marine field in the United Kingdom, I have to say that you are making life very difficult for future cataloguers of records. Do they file the periodical under ISKA Newsletter or Ocean Paddler or even Nordkapp Trust Newsletter. I suggest that it is time to make your mind up. May I be so bold as to suggest that you adopt the title "Ocean Kayaker" incorporating the "International Sea Kayak Association" and "Nordkapp Trust" Newsletters. It will not matter that the presentation may cycle between glossy cover and duplicated format. The important thing is that continuity of content will be preserved for future researchers, under one title instead of being lost by jumping from title to title. It would also help if the old practice of numbering issues were to be re-established. Sermon over.

I enjoyed Karin Mentzing's article on the Arctic Sea Kayak Race. It also explains why I did not meet her at the Jersey Symposium this year as I had expected. Dragging kayaks over rotting seaweed at Stinky Bay in Jersey is an experience not to be taken lightly. My recollection is that it was more than the two feet deep that Derek Hairon suggests in his review. My predicament was compounded by the fact that when I encountered the worst patch I was making my way back up the quaqmire, without a kayak to steady myself. This was to help drag down the double kayak with Maggie Taylor already installed on board as there was no way she would have managed these conditions with the aid of her sticks. I can confirm Derek's description of the trip round the North West corner of the island, I was just a few boat lengths to the right ofDerek, out of the frame of Dave Law's photo. It is a pity that you don't have a colour facility in the magazine as Dave's photo when enlarged and in full colour is most impressive, definitely front cover quality. Mind you, I was not so impressed by the ones he took of a certain sexagenarian having an after lunch snooze in his tent. One other thing Mr Editor, how the h— did an "h" get into my name?

Reference Bob Marks enquiry about the Feathercraft Khatsalano, I do not have the facility to E-mail him. However, a young Norwegian paddling friend, Alf Holland has a Khatsalano and is very pleased with it, he even wrote to Feathercraft singing its praises. I have no doubt Alf would be pleased to pass on his comments to Bob. Alfs address is Torsvik, 5192 Hosteland, Norway. Telephone No. 0047 945 09492.

I was down at the Scottish Maritime Museum a couple of weeks ago, assembling two folders for them, and saw an interesting old sailing canoe called the "Dolphin". The name seemed familiar and some research was called for. As a result I have compiled the enclosed short article which I will be sending to Tony Ford for the HCKA Newsletter and to the Scottish Canoe Association. However, I can see no reason why you cannot use it in Ocean Kayaker if you wish.

As usual time has been disappearing like *ana afa dyke* in simmer and I have not managed to do an introductory note for the tide article we spoke of that a friend has compiled, prompted by the tide articles already carried in OK. It will come.

That's it for now.
Regards,
Duncan

* *

From Harry & Chris Simpson, Balerno, Midlothian, Scotland.
Hi John,
I got your letter yesterday about new articles. Chris and I cheated this year and went sailing instead of the annual ISKA kayak trip to Sardinia this year. We did however join the SCA trip to Eigg, Muck and Rum which was pretty lousy weather to start with on the friday and we almost didn't go but it just got better and better and enabled us to get out to Muck and then Eigg. Rum will have to wait for another occassion. My old mate Ron Mather (of Corrievreckan fame) was there so we were able to swap stories and catch up on how he was enjoying retirement. We were very close to a nuclear submarine on the way out (very topical). We could see a dark shape with a bow wave and a trail behind it but no obvious bow and our first thoughts of a trawler rapidly changed as it got closer. I guess we will never know whether they saw us or not!
Let me see if I can jog our joint memories and come up with something.

The GPS we bought last year was seen as a piece of safety equipment but has turned out to be really useful. Perhaps the best example was in the Seychelles when we were ordered by the French navy to sail in the dark. The GPS made it dead easy.

I liked the glossy cover on the last copy. I hope you managed to get some advertising money or sponsorship to cover it. I don't think it detracts from the "amateur" approach that you have always had in presentation but shows total involvement with the kayaking community.
Take care
Harry & Chris

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From tony Brunt, New Zealand.
Hi John, this might be a bit late for your newsletter, but I have just managed to post a whole lot of pictures and my diary entries from my Dusky Sea Kayaking trip on my web site at
www.geocities.com/tonybrunt.
You might like to refer your readers to it if they are interested in seeing more of NZ ... there are also quite a number of other sea kayaking pictures as well as a few general shots of New Zealand and a few helpful links.
best wishes
Tony Brunt

****

From Nigel Williams, Sussex
John - as Hattie as told you the basis fof **SESK** is now up and running.
As with the **NWSK**, we are not a club nor a training group but an informal group in the South East who will get together to paddle together.Trips this year have been around Beachy Head,across the Solent, The Isle of Wight Needles, Hamps-Dorset coast,Isle of Sheppey,circumnavigation of Hayling Island and Chichester Harbour. Next year will include some of the above plus a week in Pembrokeshire. If anyone is interested then please can they contact me :
Nigel Williams 27 Hodcombe Close
Eastbourne Sussex BN238JA
01323.460471 or e-mail:
seapaddler@postmaster.co.uk
Thanks Nigel

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I wrote to Nigel Winser at the Royal Geographical Society requesting material for this newsletter. His reply.....

Dear John

Thank you for your letter of 9th August 2000 to Nigel asking for suggestions for articles.

Attached is a selected list of sea-kayaking expeditions from our database which may be worth approaching, and a press release for this year's Expedition Planning Seminar: Explore 2000. I hope you don't mind that we have been using your name for this!

Some Sea-kayaking Expeditions in the past five years

This list is taken from our database of past and planned expeditions. Expedition reports (indicated by the four figure reference number in brackets) are held for reference and are available for consultation, by prior appointment, in the Map Room of the Royal Geographical Society (with IBG).

Expedition Advisory Centre, Royal Geographical Society (with The Institute of British Geographers),1 Kensington Gore, London SW7 2AR.. tel: 020 7591 3030 fax: 020 7591 3031 email: eac@rgs.org

TRANS-GLOBAL KAYAK EXPEDITION

Leader: Trys Morris, Cysod -y-Coed, Llanllechid, Gwynedd, LL57 3AJ
email: welsh.canoeing@virgin.net
Members: 2. Start date: 1 March 98. End date: 1 December 01.
To journey from the UK to Australia by sea kayak via: France, Italy, Corfu, Greece, Turkey, Syria, Lebanon, Egypt (a ferry from Turkey to Egypt may be necessary due to political situation at present), Red Sea, Yemen, UAE, Oman, Iran, Pakistan, India, Bangladesh, Burma, Thailand, Malaysia and Indonesian Islands, Papua New Guinea and Australia.

HUMAN POWER AROUND THE WORLD SEPTEMBER 1999 - OCTOBER 2000

Leader: Richard and Andrew McLaughlin, web site:
www.humanpower.freeserve.co.uk
Members: 2. Start date: 22 September 99.
Brothers Richard and Andrew McLaughlin are attempting to travel 26,000 kilometres from London to Sydney "entirely self propelled". The two brothers will be cycling whilst on dry land and canoeing the stretches of water.
On 22nd September the brothers departed from the meridian line in Greenwich, London. Their route takes them down to the English Channel where they will canoe the 32km across to France and this is then followed by a 3000km stretch to Istanbul. 3500km from Istanbul via Iran to Pakistan and then up into China before turning down through South-east Asia to Singapore and then across to Indonesia where the real test of canoeing ability will see them attempting the treacherous crossing of the Timor sea to Australia.

DORSET EXPEDITIONARY SOCIETY YUKON '99 EXPEDITION

Leader: Clive Burgess, 2 Manor Place, Fortuneswell, Portland, Dorset, DT5 1NL
email: Clive.D.Burgess@btinternet.com or dorsetexp@wdi.co.uk
Members: 18. Start date: 23 July 99. End date: 24 August 99.South West Alaska A youth-based expedition carried out by the Dorset Expeditionary Society. The aim of the expedition is climb in the Wrangell Mountains, sea-kayak in Prince William Sound and explore the culture of this historic part of the USA . These proposed objectives will test the stamina, dedication and personal skills of every member selected.
Brochure, 2pp. (99/5)

EIGHTY DEGREES NORTH EXPEDITION 1999

Leader: Nigel Harling, The Rookery, Station Road, Penruddock, Penrith, Cumbria, CA11 0RR
Members: 2.
Spitzbergen Mark Evans and Nigel Harling will kayak in a two-man boat around the Northern part of Sptizbergen's main Island across the Hincopen Strait and around the north of Nordaustlandet : visiting William Parry's and Croft/Glens expedition sites, A schools linking project between UK, Saudi Arabia & Spitzbergen will be associated with the expedition.

1st OFFICIAL REGISTERED UNSUPPORTED SOLO CIRCUMNAVIGATION OF BRITISH ISLES BY SEA-KAYAK 1997-98

Leader: Ric Freeman, Nahanni Expeditions, 6 Rowan tree Close, Liss, Hampshire, GU33 7JU
email: NahanniFilms@hotmail.com
Members: 1. Start date: 1 February 98. End date: 1 February 99.
Circumnavigation at sea. Ric Freeman aims to paddle a sea-kayak around the UK and Ireland passing on the seaward side of all inhabitated land.

EXERCISE HAIDA DRAGON, 1998

Leader: Major R.C.J. Woollven
Members: 7. Start date: 15 June 98. End date: 3 August 98.
Queen Charlotte Islands, British Columbia Exercise Haida Dragon was a sea kayaking expedition to circumnavigate the Queen Charlotte Islands (QCI), British Columbia, a distance of 500 nautical miles. The expedition's aim was achieved, with the team members paddling a total of 504 nm in 37 days. It is thought that this represents the first British circumnavigation of the QCI and is more certainly the first British military circumnavigation of both Graham Island and the Queen Charlottes as a whole. Members of the expedition gained a great deal of experience in remote area kayaking and wilderness subsistence.
Report, Exercise Haida Dragon. Final report - 25 pp. Includes maps. (3464)

ADVENTURE DESIGNS ISRAEL '98

Leader: Suresh Paul, Adventure Designs, Design for Life Centre, Bunel University, Runneymede, Surrey, TW20 0JZ
email: adventure-designs-dfl@brunel.ac.uk
Members: 9. Start date: 8 February 98. End date: 15 February 98.
The Dead Sea. The project focused on the development of kayak equipment for disabled people. The project involved disabled and non-disabled people from both the UK and Israel. The research involved user trials of postural support

systems for people with spinal cord injury and for amputee's. Safety equipment was also trialled over a 9-day period by both male and female participants. The project was hosted by 'Cando', an Israeli charity based in Tel Aviv which provides Sea Kayak opportunities for disabled people. Overall, the team was able to gather data that subsequently was used to form the foundation for the design of the AQUABAC postural support system and aid the design of the LITE KITE.
Report, 50pp. Maps, illus. (3605)

INTERNATIONAL GREENLAND EXPEDITION 1997-1998

Leader: Mr Lonnie Dupre, Arctica Inc, PO Box 940, Grand Marais, Minnesota 55604, USA
email: dupre@boreal.org, web site: www.adventureonline.com or; www.trailshead.com
Members: 2. Start date: 16 May 97. End date: 20 August 98.
Perimeter of Greenland On August 20 1998 Arctic explorers Lonnie Dupre of the United States and John Hoelscher of Australia completed their 15-month, 3200 mile, three stage expedition by dog sldge and sea kayak following Greenlands rugged coastline. Stage One of the International Greenland Expedition (IGE) began at the south Greenlandic village of Paamiut on 16 May 1997 from where the pair paddled 2000 kms north for 85 days reaching Kullorsuaq, a tiny hunting village near Melville Bay on 8 August 1997. Dangerous pack ice prevented they going further by sea kayak so they transferred to a traditional hunting boat and travelled with two Inuit companions to Qaanaaq, where they trainined over the polar night. On 18 February 1998 the departed by dog sledge from Siorapauk after 4 months of darkness. 325 miles north they were turned back at Kennedy Channel, the body of water that separates Greenland from Canada's Ellesmere Island. In early May they relocated to Greenlands east coast, and on 9 July left Ammassalik on their 750 miles journey to the South Greenland Village of Qaqortoq where they completed the final stage of their 3200 mile expedition. Over 300 US schools have followed their journey and shared their experiences through the Internet website, and the curriculum support materials: The Arctic Challenge.
Brochure, Piteraq : Newsletter of the International Greenland Expedition Vol 1 Issue 1 (June 1996) (97/15)
Newsletter, 8pp; Title "Piteraq"; volume 1 issue 2; duplicate held (97/15)
Brochure, Piteraq: Newsletter of the International Greenland Expedition Vol 2 Issue 1 (Sept 97) (97/15)
Newsletter, Piteraq: the newsletter of the International Greenland Expeditions. Vol 3, issue 1. March 1998; Vol 3, issue 3 September 1998 (97/15)
Book, DUPRE, Lonnie (2000) Greenland Expedition - Where Ice is Born.

DORSET EXPEDITIONARY SOCIETY: THE PRINCE WILLIAM SOUND EXPEDITION '97

Leader: Mr Ollie Bray, c/o 10 Waverley Road, Weymouth, Dorset, DT3 5EB
Members: 0. Start date: 23 July 97. End date: 21 August 97.
Prince William Sound and Wranggell mountains, Alaska The last of three expeditions to Alaska. Previous expeditions took place in 1990 and 1991, where the primary objective was also to sea kayak in the Prince Wiliam Sound, undertaking scientific projects in the wake of the Exxon Valdez oil spill (1989). The expedition will spend 14 days sea kayaking from Whittier to Valdez, operating in Wilderness conditions. Along the route, the expedition members will conduct various projects to assess the effects of the oil spill seven years on. Climbing in the Wrangell mountains will involve mountaineering and trekking skills. YET approved.
Brochure, 2-page proposal.. (97/14)

RALEIGH INTERNATIONAL CHILE 96A - 96J - 97A - 97H

Leader: Simon Ramm, Projects Office, Raleigh International, Raleigh House, 27 Parsons Green Lane, SW6 4HS
Members: 145. Start date: 17 January 97. End date: 21 December 97.
Patagonia, Southern Chile, Andean foothills. Chile is one of Raleigh's established expedition countries. Projects include community building work in remote communities, plot survey work in national reserves to help research the rare huemul deer in region XI (in collaboration with CONAF and Aberdeen University), scientific studies of glaciers flowing from the North Patagonian ice cap and adventurous sea kayaking. A three-year biodiversity research programme in Laguna San Rafael National Park, funded by the UK government's Darwin Initiative, was begun.
Expeditions ran from January to March 1996 (96A), from October to December 1996 (96J), from January to March 1997 (97A) and from October to December (97H).
Brochure (97/29)
Preliminary Report, 3pp summary of achievements for 4 October to 18 December 1996 (97/29)
Preliminary Report, 4pp summary of achievements for 10 January to 30 March 1996 Duplicate held (97/29)
Brochure, 6pp Background and proposed projects for Chile 97A (97/29)
Report, Rose, S and Herrera Encina, S (1996) Managing information in support of park management goals and priorities. Proceedings of the first workshopof the Laguna San Rafael National Park Biodiversity Research Programme. November 12th-15th 1996. 32pp. (3244)
Newsletter, research and conservation news No.20, Aug.99 (97/29)

THE SMOCKMAN AND BALTHAZAAR'S ICELANDIC BASH - A CIRCUMNAVIGATION OF ICELAND BY SEA KAYAK

Leader: Stephen Allen, 3 The Heads, Keswick, Cumbria, CA12 5ES
Members: 2. Start date: 15 May 96. End date: 15 September 96.
The pair intended to circumnavigate Iceland by sea kayak starting from Reykjavik and following the coastline clockwise. Unfortunately, the expedition did not take place due to a one of the pair sustaining a severe back injury.
However, a three day sponsored canoe sit on Derwent Water did take place, an article on which is kept in the EAC.
Article, How do the Ducks Survive? Canoeist, April 1996. article on fundraising event (96/167)

KAYAK BRITAIN 1996

Leader: Steve MacDonald
Members: 2. Start date: 1 May 96. End date: 1 October 96.
Steve MacDonald and Peter Bray canoed around the coast of mainland Britain in a double sea kayak. The journey took 167 days. Steve became the first registered blindman to circumnavigate Britain by sea kayak. The pair raised over £58 000, as well as awareness, for the children's charity, SPARKS.

DUTCH ANTILLES SEA KAYAK EXPEDITION

Leader: Mr Kevin Danforth, 17 Cambridge Road, West Bridgford, Nottingham, NG2 5NA
Members: 1. Start date: 1 November 95. End date: 1 December 95.
Bonaire, Curacao, Aruba His aim is to kayak the islands of Bonaire, Auracao and Aruba including the open crossings. Finally, he will cross over to Venezuala. BCU approved.

BALTIC SEA EXPEDITION 1994

Leader: Huw Jones, Cwrt-y-Cadno, Merryboro Road, Wiston, Haverfordwest, SA62 4BE
Members: 6. Start date: 17 July 94. End date: 8 August 94.
Baltic Sea A team from the Celtic Coast Sea Kayakers tasker Milward School paddled from Sweden across to Finland via the Alaad Islands. The journey of 123 miles was undertaken in sea kayaks and was unaided by land or sea support. BCU approved.
Yearbook, 1994, 93 - 94

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From: "Udo Beier" <Udo.Beier@t-online.de>
To: <jramwell@provider.co.uk>
Sent: 03 May 2000 22:01
Subject: GPS
Dear John,
may be you are not yet informed about the situation, that since 2nd May 2000 th GPS works no longer with Selective Avability (SA) for private users. President Clinto stopped degrading GPS accuracy.

Till the end of the 1st May 2000 with the help of GPS you could find a point which falls in 95% within a radius of 48.3 yards. Now without SA, 95% of the points fall within a radius of 4.5 yards.

For further informations see:
<http://www.igeb.gov> especially <http://www.igeb.gov/sa/diagram.shtml>

Best wishes from Germany: Udo Beier, Hamburg

Book Review - John Chamberlin

"The Perfect Storm - A True Story of Man Against the Sea"

by Sebastian Junger
Fourth Estate, £14.99

I remember hearing about this book when it first came out and at the time diaried myself to get it. Then, in all the best traditions of time management, I subsequently ignored my diary, knowing I'd remember to do it anyway. I didn't.

Last month, browsing through Hay-on-Wye's 30+ secondhand bookshops, whilst taking a slow run home after a couple of days at the Cwm Pennant Sea Kayaking Festival, I came across a couple of pristine hardback copies on the first floor of Addyman Books - 39 Lion St - at £6.50, so I bought one.

It's an excellent read, made more so because it is a true story. Well, most of it anyway. Sebastian Junger had a difficult task. He wanted to tell the true story of the loss of the **Andrea Gail**, when at the crunch no-one knows, exactly, what did happen. Nonetheless, following his gripping narrative you are left with a very good idea. Fear doesn't enter into it. Terror begins to:

"The crew of the Andrea Gail do not find themselves in particularly cold water, though: it may add five or ten minutes to their lives. And there is no one around to save them anyway. The electrical activity in their brain gets weaker and weaker until, after fifteen or twenty minutes, it ceases altogether."

"The body could be likened to a crew that resorts to increasingly desperate measures to keep their vessel afloat. Eventually the last wire has shorted out, the last bit of decking has settled under the water. ..." (Junger, 1991: 146)

The stars of the novel - which it isn't - seem initially to be the boat itself, the **Andrea Gail**, along with the 'characters' who sailed on her, Billy Tyne (Captain), Bobby Shatford, Michael ('Bugsy') Moran, Alfred Pierre, David ('Sully') Sullivan and Dale ('Murph') Murphy - all dead. And the scene is either the boat, or the Crow's Nest Inn, Gloucester, Mass. But they aren't, and it's not.

They are the waves, big buggers, bigger than any you've ever seen, or even imagined. And the scene is 'The Grand Banks' south of Newfoundland, and some thou-

sands of square miles of sea over an area roughly 42-60° W by 42-47° N The period, mostly, is October 1991.

For me, this book fell into the 'unputdownable' category. If you have any appreciation of the sea at all, the descriptions within it are awesome. Made more so for me by the fact that a news bulletin just after I'd finished reading it described how the Oriana ocean cruise ship had suffered punched-in windows (remember how thick these things are and what they're made of - it's not a phone box!) some forty feet above sea level as it was pounded by fifty-foot seas in mid Atlantic.

The book is informative in a number of ways; about 'sword' (and tuna) fishing specifically, about climatology and meteorology, and about the life and history of the fishing communities along the eastern seaboard of North America. And, essentially, it's factual. Where it isn't Junger has not pretended to know, and where he didn't he 'interviewed people who had been through similar situations and survived', giving us an idea at least of what the guys on the **Andrea Gail** may have felt over those final few hours and minutes, and even seconds. If you think drowning is a peaceful way to go - think again.

Imagine going end-over-end in a 72-foot fishing boat - we call it looping', they call it pitch-poling', but does it matter? Just think about it, in seas pushing 100 feet high for hours on end:

"A mature hurricane is by far the most powerful event on earth; the combined nuclear arsenals of the United States and the former Soviet Union don't contain enough energy to keep a hurricane going for one day. A typical hurricane encompasses a million cubic miles of atmosphere and could provide all the power needed by the United States for three or four years. During the Labor Day Hurricane of 1935, winds surpassed 200 miles an hour and people caught outside were sand-blasted to death. Rescue workers found nothing but their shoes and belt buckles. So much rain can fall during a hurricane - up to five inches an hour - that the soil liquefies. Hillsides slump into valleys and birds drown in flight, unable to shield their upward- facing nostrils. In 1970, a hurricane drowned half a million people in what is now Bangladesh. In 1938, a hurricane put downtown Providence, Rhode Island, under ten feet of ocean. The waves generated by that storm were so huge they literally shook the earth; seismographs in Alaska picked up their impact five thousand miles away" (Junger, 1991:102)

Or, a little closer to home:

"Instantaneous pressures of up to six tons per square foot have been measured in breaking waves. Breaking waves have lifted a 27,000-ton breakwater, en masse, and deposited it inside the harbor at Wick, Scotland." (Junger, 1991: 121)

But the reasons for the **Andrea Gail's** - and therefore its crew's - demise will never be fully clear. What is, is the usual array of conflicts that emerge from any investigation into such tragedies, whether they be Concorde, Paddington, or this one. Conflicts between the need to earn a living and the dangers involved; between running a business for profit and doing it to the required standards; between Quality and Safety - between ISO 9000' and 1SO(-BARS) 990' - "... and failing.")! Between reasonable risk and culpable negligence, corruption even. The **Andrea Gail**'s owner, Bob Brown, doesn't come out of it smelling of roses, and the evidence presented suggests he shouldn't.

The book doesn't end with the Andrea Gail's sinking, but goes on to describe many other factual events at the time of the storm. If there's any disappointment at all, it's that not actually knowing, but Junger gets you as close as possible to it. Sometimes too close.

Overall it's a cracking read, made more so

by Junger's sensitivity to the personal issues and tragedies involved. If you've ever read 'Fluke' by James Herbert, you'll never look at a dog the same again, especially black ones! When you've read this, you'll think the same every time you eat tuna, unless you think it's made at Tesco's!
One final point:

"Wave heights off the coast of England have risen an average of 25 percent over the past couple of decades, which converts to a twenty-foot increase over the next half-century."
(Junger, 1991:121)

There was one book left when I was there - the number is 01497 821136 (FAX: 821732).

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From: "Lester Matthews" <l.matthews@bcftcs.ac.uk>
To: <jramwell@provider.co.uk>
Sent: Tuesday, August 22, 2000 12:10 PM
Subject: Article for Next Newsletter

Dear John,
thanks for your letter. I have been away on holiday hence the delay in my reply.
The article which you have sent for my corrections is actually the SECOND one which I wrote. I don't recall seeing the first one ! Did I miss an issue, or maybe you never received the first ??
As for my comments, at the end of the first Paragraph I anticipated that you may have had some sponsored prize (or maybe a years free subscription), as bait to elicit replies. So that needs your decision. I will send the First and Second articles to you by surface mail first Class, so you should hopefully receive that tomorrow. The first article follows below.
Have fun,
Lester 'SAWBONES'

Sawbones is a new feature and will comprise of a Quiz, based around some facet of Expedition First Aid, some gems of Expedition Medicine / First Aid Lore, plus a short story for readers to complete and send in.

Sea Kayakers are only human (the editor may choose to comment at this point !), and humans are neither immortal nor invulnerable. The chances of relatively minor complaints becoming a major problem are quite high, given the activities that we undertake, the self-imposed limitations on what we carry, how remote we are from help and our usage of a dynamic environment in which to play.
To prepare for First Aid situations and to be able to administer prolonged care to a casualty, or sick person, are not negotiable facets of our year-round activities. It is to these on-going preparations that these articles and quizzes will address themselves. We must always return to the basics, that is the ABC, of Airway, Breathing and Circulation. Future articles will look at making an AMPLE Diagnosis, plus the AABCDE sequence of First Aid and Evacuation.

Hypothermia 1

It's Quiz-time !!! fill in the blanks below :-

Symptoms of Hypothermia

1) Victim feels c.....
2) Victim may c.....(an important point, they may or may not, depending on various factors, including their basic personality !
3) Victim will have a l.....c.....t..... (difficult to assess)
4) Victim will s....., but perhaps for only a short period of time !
5) Victim will have s.....s.....and l..... of m.....c.....
6) Victim may experience b..... v.....

Signs of Hypothermia

a) Victim may look p..... b) They may become i.....
c) Their p..... and b..... slow down
d) Finally they slip into u.....

O.K some of the above could be Sign and / or Symptom, the important thing is to be aware of, and look , for them. The answers are given at the end of the article.

Hypothermia .1 Notes, Handy Hints and Top Tips

ABC Always !!
A Maintain an open airway,
B Check for breathing, if absent give EAR, Expired Air Resuscitation.
Be careful, Hypothermia will repress breathing. Giving warm expired air will nevertheless do no harm to a hypothermic person.
C Check for Circulation, if absent give CPR Cardio-Pulmonary Resuscitation.Be careful, Hypothermia will repress heart rate. Giving unnecessary Heart compressions will do a lot of harm !!!!! DO NO HARM
Check and re-check and record A BC.The sequence (and times) of any fluctuations in vital signs and symptoms, are very significant towards both a thorough diagnosis and treatment regime. Hospital physicians love to receive complete 'histories' with their patients !
Remove victims immediately into a better environment, and then start preparing as close to an 'Ideal' environment for them as soon as possible. Consider the options for evacuation early on. You may need to prepare the 'team' for difficult decisions and much hard work. Hypothermia is often an epidemic. Treat the Team !
Assessing Core temperature in the field is tricky and requires the use of an anal thermometer which registers lower (than oral) temperatures. Normal core temperature is 37oc, mild Hypothermia = 35oc , profound Hypothermia is at or below 32 oc.
Rarely, symptoms such as blurred vision may occur first and go unreported.
Vigilance, in monitoring young, small-bodied, skinny and inexperienced people is essential.
Situations where people have fallen into cold water and rapidly become Hypothermic may allow for rapid re-warming (see notes above). Long-term Hypothermics (chilling over many hours or days) definitely need long-term re-warming and nursing. WARM DRINKS (to the conscious) and WARM AIR are particularly effective. Hot drinks may burn their mouths, give lukewarm drinks and ask if they can take it any hotter !
Ideally, dry and warm clothing, substituted quickly and gently for cold wet clothing will help redress the situation (no pun intended !). How, where and when to attempt this difficult feat is beyond the scope of this article. Suffice to say, that a Wind free, warm environment, well prepared and with trained carers is a God-send. Putting dry clothing over wet clothing may work. A 'barrier layer' of waterproof material (Bin-liners, jackets, Bivvy Bags ?) will help avoid the dreadful scenario of the dry clothing becoming wet also !
If the worst happens and someone appears to die from hypothermia, never assume that they are dead until they are 'warm dead'. Put them into the recovery position where they can warm-up (to 36 degrees) slowly, perhaps 6 hours. During war-time, sailors have 'self-resuscitated' after being left for dead on the decks of warships !

_ASH. don't make an 'ASH of things !!

There is a sequence that must be broken with Accidents and Incidents in Sea and Wilderness areas :-

Accident = Shock + Hypothermia

Even in sunny conditions, a Casualty lying on (typically) damp and cool ground, or in the water, will quickly loose heat.
Accidents are shocking to both observers

and to casualties. The Body's self-protection system of withdrawing Fluids from extremities leads to Dizziness, Confusion, lower Heart rate, etc which will make the onset of Hypothermia more rapid and more serious

The old saying that "Hypothermia is usually an Epidemic" often rings true, so :-

1) Treat the Group not just the Casualty
2) Prevent Hypothermia before it happens
3) Protect yourself from these effects

The Treatments for Shock and Hypothermia are very similar, always therefore treat for Hypothermia as well as for any immediate injuries after an accident. The only contra-indication would be that if the casualty is likely to need surgery, then no Food and the minimum of Fluids should be administered.
We shall return to Hypothermia and Shock in a future articles.

Sawbones Stories

Sawbones Stories all have (at least) one significant Medical / First Aid thread woven into their yarn. There will be one different story for every forthcoming issue. Readers are invited to :-

1) identify that problem
2) think of a solution / progression / end of the story
3) write it up, for submission to Sawbones.

The correct answers and possible solutions will be published once a year, with an award, to the one which Sawbones likes best of all.

"Once upon a Time....."

(Disturbing stories for disturbed people)

There were 3 Sea Canoeists. The youngest (14) had been with friends and parents kayaking on Scottish inland lochs since a child. Leslie's desire to be a level 3 Coach (just like Dad) was such that they had booked Leslie onto a multi-activity holiday with the JTTM Adventure Centre* where they did Instructor courses. Leslie wanted to be ready with 3 Star award by her 17th birthday. (Leslie's father could not now coach her, as he had tragically lost both arms in a Dominoes tournament that had turned ugly)
Jo and Chris were the leaders of this short day trip, 1 km from the North Wales port of Llandumpo to the Island Rat-Sanctuary of 'Ynys Bog'. Jo held Inland level 2 and Chris held Sea Level 3 Coach, they were both 20 years old. Tidal streams (between the Island and the gently convex mainland foreshore) on Neaps were 1 knot and 3 knots on Springs. 1 Km beyond the island were the infamous Ynys Mawr overfalls and headland. It was 10 a.m on a bright August day. The tides had just started 'making' that day and they were paddling out at high water slack.

The wind was blowing an easy Force 2 as they set off. 10 minutes into the trip the tidal current, was beginning to slowly turn towards the overfalls 2 km distant. The young paddler was so engrossed with paddling their first large expedition sea kayak (a 'Gypsy day-tripper' made by Norbert Menace
Kayaks Ltd) that Leslie was hardly aware that Jo was repeatedly asking Chris the same question, to no avail.
Chris paddled on with stubborn but inefficient stroke, so that Leslie had to slow down and look behind her at the unfamiliar scene of two canoeists, Jo shouting and taking off the others deck hatch with great difficulty as Chris was now struggling and hitting out at Jo. Chris caught Jo a gem of a blow on the nose. Hand-rolling up with face awash with blood and sea-water, Jo quickly grabbed at Chris's kayak and hung on tight to the deck lines aft of their cockpit.
It was then that the awful truth dawned on Leslie that.....
Dear reader, what happened next ?

* = 'Just Take The Money Adventure Centre', a part of the International Extreme Profits Organisation PLC.

Comments, queries and suggestions to Sawbones, are welcome. In pencil please, on the back of a £20 note (this encourages both brevity and the acquisition of a charitable nature), to 'Sawbones' C/O Ocean Kayaker, etc.

Answers to the quiz
1= cold, 2=complain, 3 = lowered core temperature, 4 = shiver, 5 = slurred speech and lack of muscle co-ordination, 6 = blurred vision a = pale, b = irrational / irritable, c = pulse and breathing, d = unconsciousness
The above notes and comments do not constitute an exhaustive or complete coverage of these complex subjects. The Author cannot be held to be responsible for any omissions or errors of fact in these brief overviews and exercises. Readers wishing to access more detail should consult 'standard', St Johns Ambulance-type handbooks and Expedition Medicine Handbooks such as

:- Warrell, D., and Anderson, S., (1998) The Royal Geographic Society Expedition Medicine .London :Profile Books.

Sawbones April 1999
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From Peter Hatt of North West Sea Kayakers

Cyber Geeking

Hi John,
What a great summer we have had at North West Sea Kayakers read all about it on www.nwsk.freeserve.co.uk.
Yes John we have hit the cyber age guess I have a life of geeking! to look forward to over the winter.
Our super interactive web site is available to all that are interested in sea kayaking. I hope that other's will link in let's spread the message hear other's views.Leave a message or join in on the on line debate at the forum.
Best Wishes Hattie

Thought that you may be able to slot the above in ISKA how's about a link
Bye.

From John Ramwell

ISKA has it's web site at www.seakayak.co.uk and I am looking for someone out there to maintain it for me and to update the events page as well as put in links to other sea kayaking organisations.

If you are interested I would love to hear from you.

Dolphin

By Duncan Winning OBE, Honorary President of the Historic Canoe & Kayak Association

The old boat looked kind of sad. Her clinker planking was sprung away from the bow and stern posts, her timber was weathered almost grey and it seemed as if it had not seen varnish for half a century.

I had been at the Scottish Maritime Museum in Irvine, helping them to assemble a "Tyne" Sports two seater built in 1958 and a "Pre-Granta" two seater built in Cottenham in the late 1940's. These are displayed in the reconstructed Linthouse Building, which started life as a very large marine engine building facility in Glasgow. Among the other craft on show are, a very fine example of a Victorian sailing canoe, in excellent condition. A "Lendal" two seater from the late 50's / early 60's built to Scottish Canoe Association class rules by Alistair Wilson, better known for his paddles. The prototype for the "Gantock" plywood sea touring single and the "Dolphin".

"Dolphin" was a fairly unexceptional example of a sailing canoe from the Victorian era, in rather poor condition. However, there was something familiar about her name. Some research was called for.

A few years ago Roger Hancock, Secretary of the Loch Lomond Sailing Club, founded as the Clyde Canoe Club in 1873, kindly gave me a copy of some papers from the club archives. These had been transcribed from an old notebook containing newspaper cuttings concerning early club activities. Unfortunately the notebook and its contents have disapeared long ago.

Among the papers were reports from the such well known publications as the "Citizen", the "Daily Mail", the "Field", the "Glasgow Herald", the "Graphic" and the "Scotsman" covering the years 1874 to 1876. Apart from reporting local races there are references to events at the Royal Canoe Club, a "Chase over land and water", an "Upset Race" and a sailing canoe race from Dover to Calais. However, to me the most interesting accounts deal with some of the early cruises undertaken by club members. These included trips from the Clyde to Iona, round Mull and most daring for their day, one to the Outer Hebrides including a crossing of the Minch to Skye and culminating in a 47 mile epic to Tobermorry on Mull to catch the steamer for home. A Mr Wilfred Smith featured in a number of the reports including the one on the Outer Hebrides Cruise. His called his canoe "Dolphin", could the old sailing canoe at the Scottish Maritime Museum be this historic craft?

..... there was something familiar about her name. some research was call for.

Veronica Hartwich, the museum's collections manager, granted me access to the documentation received from Mrs Aileen B. Greaves, the donor of the "Dolphin", from which the following information was gleaned. Her husband had owned the canoe since he was a boy at school, having been given it by his Uncle. For many years it had lain unused in the garden of their house in Lymington. Mr Greaves had been the oldest honorary member of the Mersey Canoe Club and his wife had written an account of his exploits on the Dee. In his youth he had used his canoe mainly in Scotland, a trip round the Mull ofKintyre having been featured in a 1920's copy of the Yachting Monthly. In addition to being a founder member of the Clyde Canoe Club, she stated that he had started it.

I think that Mrs Greaves may have been a little muddled about some of the early events she related. This would have been quite understandable. Mr Greaves could hardly have started the Clyde Canoe Club as it was founded one hundred and thirteen years before his death in 1986. It would however, make sense if this anecdote related to his uncle who gave him the canoe in the first place. Now, as a by product of being employed in a small Trust specialising in technical archive work, mainly concerning marine matters on behalf of organisations like the National Archive for Scotland, my colleagues draw my attention to any canoeing references that they come across. As a result, I just happen to have a copy of the obituary for Mr Wilfred Smith from the Helensburgh & Gareloch Times of 5' October 1930. This is the same Mr Smith who featured in the early Clyde Canoe Club records and reference is made to his "adventurous cruise" to the Outer Hebrides, Skye and Mull. However the gem contained in the obituary, for this exercise, is as follows and I quote ... *"Mr Smith was an original member of the Clyde Canoe Club, and only a few weeks ago, accompanied by his Nephew, he paid a visit to the club on Loch Lomond. "When did you join the club, Mr Smith? "* asked a young member. "I did not join it", was the reply, "I made it".... This claim of Mr Smith to have made the CCC tallies rather neatly with my interpretation of Mrs Greaves claim that "he started it".

Although there is further research needed to prove that the Scottish Maritime Museum "Dolphin" is the one used by Mr Wilfred Smith for his 1875 trip to the Outer Isles, I am confident that it is.

What makes this tale even more amazing is that "Dolphin" appears to be the second canoe from the 1875 trip to survive. "Lark" also lives on, albeit (whisper it), under a different name and is, to my taste, a far prettier design. But that's another story.

Duncan Ramsay Winning OBE
September 2000

Malta Canoe Union
C/o Nautical School, Haywharf, Floriana
Return address: 41 Victory Alley, Birkirkara, Malta. Telephone: 490720
Dated: 11/09/00 **"UNDER NEW MANAGEMENT"**

Dear Sir or Madam,

Please note that as of the 5th of September 2000, the Malta Canoe Club-YMCA has officially taken over the management of the Malta Canoe Federation. The two entities are now conjoined into the Malta Canoe Union, as the representative national body for canoe sport in Malta.

Via a unanimous majority during a landslide combined EGM the former member group of the YMCA and sole champion of canoe sport in Malta at both international and national levels voted to drop the YMCA suffix and concentrate its efforts towards national and international recognition of our athletes and expedition paddlers who have done much to raise the level of participation and professionalism within canoeing.

The pedigree of both organizations is undisputed, with the club forming the backbone of the Federation little has changed for its members. However, the problems of federalization which included the integration of the scouts and sea cadet organizations, amongst others has in one simple movement swept aside a long and debilitating handicap. Although such organizations will now no long benefit from the economy of scale via group membership, the move does favour individual members of these organizations.

Members of the public and media are reminded that only athletes and coached endorsed by the MCU can be regarded as professionals exacting and coaching to an internationally recognized standard in Malta. The MCU benefits from recognition by the International Sea Kayak Association, as well as applications pending with the International Canoe Federation, the European Canoe Association and the Malta Olympic Committee.

The MCU has already held a national sprint championship at 500 and IOOOmeter distances in K1 Mans, Ladies and Junior classes; a national marathon championship event is planned for November this year. The MCU also recognizes those former national champions, records, both national and international, and coaching criteria held under the former Malta Canoe Federation. The MCU pledges itself to the further promotion of the sport without prejudice to gender, race or political affiliations, and in fact is one of the very few water sports that attracts a large number of women participants in line with IOC directives and future targets.

Yours in Canoesport, James "Craig" Wightman. President MCU BCU Level II coach (M) BCU Level I coach (RK) Dip.Youth Work

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by Jon Ungoed-Thomas and Andrew Young

BRITAIN'S 5m boating enthusiasts face breath tests and fines under government plans to weed out drunken sailors from the country's coastal and inland waters.

Police are to be given powers to breathalyse yachtsmen, motorboat owners and even jet- skiers whom they suspect have had one too many drinks.

Motorists found to be over the drink-drive limit — about a pint and a half for an average person — face a maximum fine of £5,000 and up to six months in prison. The nautical laws may be even tougher, and a jail sentence of up to two years is under consideration.

It is already an offence for a seaman on a commercial ship to endanger his own or other craft while under the influence of drink or drugs. There is no set limit, however, for alcohol levels in the blood.

The changes, covering pleasure boats and commercial crews, are to be announced later this year by John Prescott, the secretary of state for environment, transport and the regions. Prescott wants the rules to be applied to all craft. "There was widespread support for the introduction of alcohol testing for mariners," said a spokesman at his department.

The Conservative government considered legislation, but never implemented it. Prescott, a former merchant seaman, however, ordered a review, and the proposals could be enacted before the next election.

The move has, however, angered many of the country's boat owners. They claim the proposed laws are an over-reaction and will end the innocent pleasure of boating with a stock of beer, chilled wine and spirits.

"A couple of gin and tonics and a maybe a bottle of wine with friends help make a perfect day out on the water," said Andy Stulpa, 39, a boating enthusiast from Haughley, near Slowmarket in Suffolk. "It will spoil the fun of cruising if you constantly have to worry about going over the limit,"

Calls for breath tests on boat crews were prompted by the Marchioness disaster in 1989, in which 51 people died after a collision on the Thames. The captain of the Bowbelle, the 1,475-ton dredger which crashed into the Marchioness, had been drinking. He was never prosecuted because there is no legal limit for mariners.

But some enthusiasts believe a national crackdown is now warranted. "A drinking limit is a good idea because when you're in control of a boat, you're also in control of people's- lives," said Angela Harle, 50, who runs Hamble Point Yacht Charters in the Solent.

Roger Townsend, rear commodore of the Royal Southampton Yacht Club, which has 1,500 members, said: "Any sensible sailor would welcome this. When I race, I ban alcohol from the boat, although when leisure cruising a glass of wine is part of the day."

Local bylaws have already trapped some drunken boat users. One man was stopped by river inspectors on the Norfolk Broads last year weaving dangerously across the water, while steering the boat with his feet. Another was so drunk that he collapsed into the water and had to be hauled out by holiday- makers.

The Broads Authority already prosecutes people who drink to excess using a bylaw making it an offence punishable by a fine of up to £1,000 not to be in full control of a vessel while under the influence of drink or drugs.

Despite such cases, some police on Britain's rivers and coasts are unconvinced that mariners pose the same threat as motorists. Kevin Banks, of the Dorset police marine section, in Poole, said: "I don't condone it, but there will be hundreds of people on the water at any given moment who have had a few and should not drive a car, but they are not sailing badly or crashing into each other."

WAVE RESEARCH - A MEANS TO SAFETY AT SEA.

by Laurence Draper.

Waves can be tremendous fun and a source of sport but one must never underestimate the ability - the probability - of waves to play a nasty and mischievous trick. Ever since man set sail upon the sea, or even before that time, waves must have taken a toll of human life. an understanding of how waves behave is the essential first step in reducing this toll.

This article explains why waves can be so treacherous, how the folk-lore of the seventh wave is largely true and gives a simple D I Y method of predicting waves from wind..

Even the Minoans of 2000 BC must have had problems with waves: if not, they would not have built their coastal towns in creeks, sheltered bays and in the lee of islands. Aristotle in 350 BC was concerned with problems of how waves were generated and why swell was more evident near to a coast than in deep water. The Romans elevated harbour technology to a supreme engineering art, building several massive ports with breakwaters and docks. Leonardo da Vinci observed how waves broke and Robert Boyle in 1670 obviously understood quite a lot about waves; he talked to an experienced Swedish diver and wrote that, *"The wind being stiffe, so that the waves were 6 or 7 foot high above the surface of the water, he found no signs of it at 15 fathoms deep, but if the blasts continued long, then it mov'd the Mudd at the bottom and made the water thick and dark"*. This is obviously a genuine observation.

Possibly the first really systematic attempts to record and understand sea waves so as to improve the safety of structures were made by Thomas Stevenson, the renowned Scottish Engineer. He produced the earliest wave climatology which we know of today, having instructed his resident engineer at a small harbour of refuge he was building (at Lybster in Caithness) to note the wave height every day throughout the year.

Although the basis of the mathematical foundation of wave behaviour was worked out in the last century, practical wave research, or Kymatology as it might be termed, only really got under way when two vital ingredients became available. These were:-

i.) the need in World War II for a method of predicting waves for landings on unfriendly beaches; and

ii) the existence of electronics which gave, for the first time, the capability of measuring such complex phenomena accurately, continuously and at a distance.

From that time on, with mathematicians being able to test their new theories against an ever-increasing quantity of good quality data, understanding has grown.

The data collected are essentially on two parameters: the height of a sea wave (i.e. the vertical distance between a crest and a trough) and its period (i.e. the time which elapses between the arrival of one crest and the next, typically between 2 and 20 seconds). Sea waves are unusual in that the double amplitude, or height, is the preferred parameter, whereas most other wave forms are described in terms of their amplitude, or excursion from the mean. The reason is that sea waves tend to be asymmetric, crests being higher above the mean than troughs below it.

There is one convenient and well used international terms,
significant wave height - the average height of the highest one third of the waves in a given sea condition. This has the advantage that an experienced sailor, when asked how high the waves are, almost subconsciously averages the higher waves and so his estimate will come close to the calculated value. Significant wave height also appeals to the mathematicians who can relate it to other known height parameters including those derived from the spectrum.

The generation of waves.

As an example, all the waves crashing on to the beach at Blackpool have been generated by the same wind blowing from the Irish coast, in the same direction, over the same stretch of water and for the same length of time. One might therefore expect them to be exactly the same as each other. It does not take a genius to realise that this theory is totally wrong. No two waves are alike: in fact no two sea waves ever have been, or ever will be identical. If this is so, then why is it that there is such complete variability in something with such a uniform background?

The false assumption is that a 'steady' wind is steady, in either speed or direction. The wind may have a mean speed, but this is an average of gusts and lulls over a range of directions which can spread even more than +/- from the nominal direction. There is a whole spectrum of wind speeds and directions, so a whole range of waves is caused by the wind drag over the sea. In addition, the local high-frequency changes is the air pressure field causes corresponding local lowering (elevations) in the water surface when the pressure increases (decreases). These local changes in water level are in fact waves when the gust relaxes, the water surface will rebound upwards (downwards), maybe even only a millimetre or so, but at that

instant a wave is born and it will travel out in all directions, exactly as the wave from the stone dropped in a pond, even with some energy travelling in the opposite direction to that of the wind. The net result of these processes is that there is a wide range of wave periods, with each component of the spectrum having a specific amount of energy which is manifested as wave height.

An important property of sea waves is that, unlike light and sound waves, each component of a specific period will travel at a speed related to its period: a longer-period wave component will travel faster than does a shorter-period one. The immediate result is that wave components are continually overtaking each other; when the crest of one component overtakes the crest of another, a higher wave temporarily ensues, but when the crest of one overtakes the trough of another, there will be a brief lull in the wave activity. In the real sea there are not just two components but an infinite number, all travelling at different speeds in a range of directions and more or less independently of each other. With such a multitude of components it is easy to understand why no two waves can ever be exactly the same, and why an unsuspected high wave can seemingly materialise almost from nowhere. The overtaking of components also explains why waves often come in groups. That 'every seventh wave is the largest' is generally true, except that it is not necessarily the seventh one, depending on the relative speeds of the major components.

In addition to the spread of wave directions within a storm, waves from other storms elsewhere, and now referred to as swell, can arrive from almost any other direction and cause an even more complex sea. Swell can travel enormous distances: it has been shown that some wave energy arriving on Cornish beaches originated off Cape Horn.

How high can waves become?

A test book on hydraulics, published in 1914, confidently stated that the maximum height of sea waves was 9m - despite earlier reports of waves estimated to be as much as 30m high. Even in 1970, a respected naval architect gave his opinion that the largest wave ever measured was under 12m high. This was after publication in 1967 of an instrumental measurement made in 1961 of a wave 20m high. However, the record still goes to an estimated 34m (reported as 112 feet) for the height of a wave encountered in the North Pacific in 1933 by the USS Ramapo. To estimate a wave height to the nearest foot in such atrocious conditions may be unrealistic, but that wave must have been a really big one.

Whilst the accuracy of visual observations in such severe conditions must be poor, the accuracy of modern instruments is good. It is usual to record for only a small proportion of the time, as otherwise the data stores would be swamped: however, existing records of very high waves more than confirms sailors' estimate of extreme wave heights. The highest wave actually on record appears to be one of 26m (crest to trough) measured by Ocean Weather Ship, "Weather Reporter" in the North Atlantic on Ocean Weather Station "India" (59 degrees N 19 degrees W) on 30th December 1972 (See Fig. 1). That individual wave had a period of 16 seconds, so that from its crest the Weather Reporter dropped almost 26m in about 7 seconds, hesitated for a second or so and then lifted about 25m in the next 7 seconds. It cannot have been a particularly soporific experience for the crew.

Such high crests - and their corollaries, the 'holes in the ocean' - cause the loss of about 50 sea-going vessels each year. These losses are not only of small ships: three years ago the 'Derbyshire', a 200,000 tonne vessel from Liverpool, was lost in a Pacific typhoon. It seems probable that she was overwhelmed by a quite exceptional wave, but nevertheless one which we must expect very occasionally. (Ed...this is not the explanation proffered by my brother who is coming close to proving that the 'Derbyshire' was lost - with 40 plus lives - due to an extra bulkhead being welded in to the original vessel causing it to become vulnerable to a broken back,)

The chance of actually measuring such a 'freak' wave is minute, as it probably does not exist for more than a minute over a distance of a mile or so. The chance superposition of a large number of wave components, which led to its existence is only transient, the faster components soon escaping away from the slower ones.

Possibly the most impressive such record is that taken on the Daunt Light Vessel, off the southern Irish coast, by an Institute of Oceanographic Sciences shipborne wave recorder on 12th January, 1969. This was operated for about 15 minutes every three hours, and the record is shown in Fig. 2 when the instrument was switched on at 3 a.m. The weather was rough but the significant wave height of 5 m was not exceptional for January.

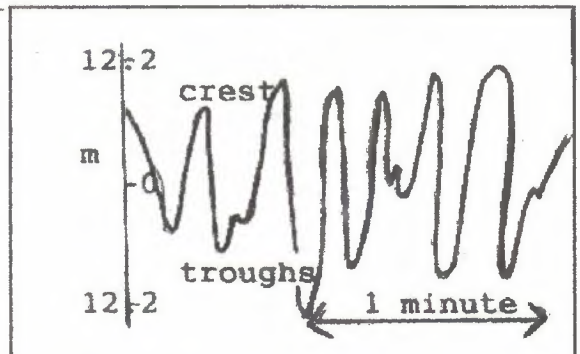


Fig. 1 Wave recorder trace of the highest wave ever measured instrumentally (26m), from Ocean Weather Station, India' on 30th December, 1972

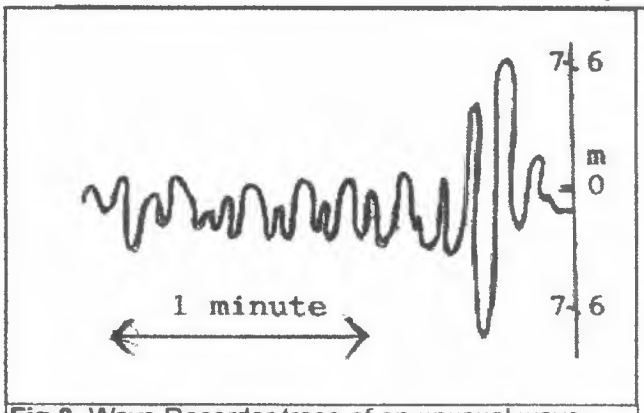


Fig.2 Wave Recorder trace of an unusual wave experienced by the Duant light Vessel off Cork on 12th January, 1969

Suddenly a wave almost 13 m high appeared and some damage was sustained by the vessel: immediately afterwards the waves returned to their previous levels. The Master, who had just climbed into his bunk, subsequently described it as the most frightening experience in his life at sea.

Forecasting waves

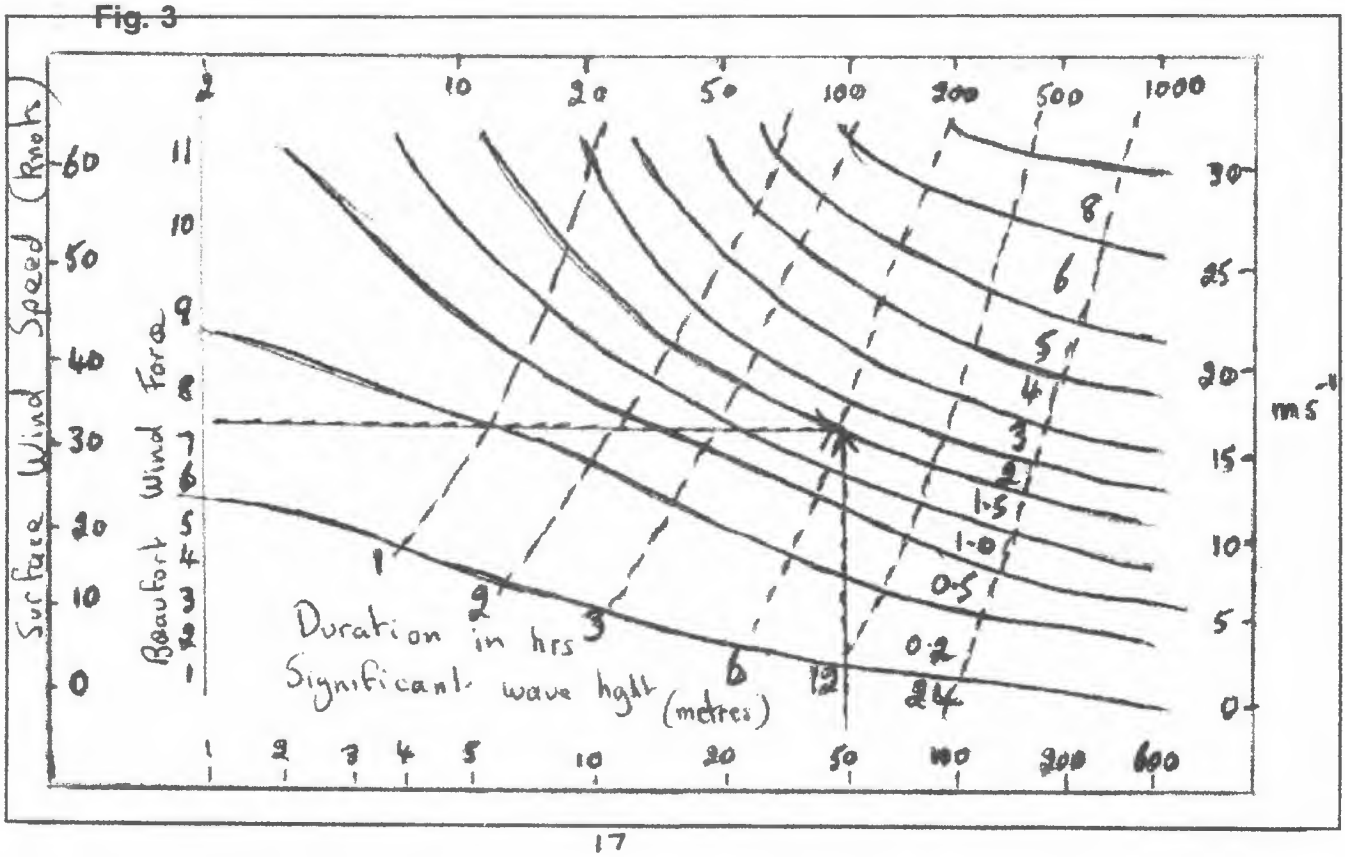
Reference has been made several times to predicting waves, but how is it done? There are many different methods, all of which have to simplify the situation grossly. Even the most sophisticated methods using large high speed computers have to reduce the input data to averages around each of a network of grid points, perhaps 100 km apart. Nevertheless, such methods can produce useful answers and they are accepted by coastal, marine and off-shore engineers as being proven and reliable. Fig. 3 shows a wave height prediction graph that is appropriate for most sea areas around the U.K. where water depths exceed about 30m. Its predictions are not unreasonable even for oceanic waters, but it should be remembered that even if the local wind is calm, swell from distant parts might penetrate and produce waves several metres high.

Lighthouses and oil platforms must be able to withstand the highest waves likely to hit them in their lifetime - so how high will that wave be?

Oceanographers have made many studies of the waves generated by known winds and can predict the wave conditions likely to occur under that wind. There are now ways of extrapolating a consistent set of wave measurements to estimate, purely from these measurements, such rare events in wave height. Moreover, meteorologists have many years of wind measurements, so it is a relatively straight-forward job to determine the highest wind speeds likely to occur over periods such as 50 years.

Having realised the statistical nature of waves, mathematicians were soon able to calculate (in the 1950s) the chance of an extremely large number of components trying to overtake each other at one point in space and time. This is not the same as being able to predict the time and location at which a huge wave will occur, but it does enable us to work out the most probable value of the height of the highest wave which will occur in a storm of a known (or postulated) ferocity, and also the height or a wave having, say, a 1% chance of occurring in that storm.
By combining these techniques, oceanographers have been able to achieve answers acceptable to engineers.

Fig. 3



Additional phenomena

Another cause of tragedy which can be laid at the door of sea waves is known as a rip current, or undertow. This latter name implies that an underwater current grabs a swimmer by the feet and tows him or her out to sea at high speed. No such phenomena is known to exist. What does happen is that when a wave group starts to break up on a beach, the water is projected well up the beach, from where gravity tends to return it to mean water level: however, before the water can trickle back down, another wave breaks, holding the water from earlier breakers in an unstable equilibrium at the top of the beach. This situation cannot persist for ever, but it can do so for many minutes, with even more water being hurled up the beach. Eventually the mass of water above mean water level becomes too large for the successively incoming waves to hold, and the water starts to return down the beach at one point, maybe because of a temporary lull in the wave energy arriving at that location, or because there is a slightly deeper trench, or runnel, in the beach there, making it marginally easier for the water to run back. The formation of this opposing current slows the incoming waves, which in turn reduces the pressure of the waves holding the water at the top of the beach: the trickle becomes a torrent and a rip current is born.

The Institute of Oceanographic Sciences has measured rip currents travelling at 5 knots off the Cornish coast - faster than any swimmer can sustain - and reaching a kilometre off shore. No wonder people are taken out to sea and drowned. The important fact to remember is that bathers finding themselves in a rip current must not attempt to swim directly towards the shore, but rather parallel to the beach because a rip is rarely more than 20 to 40 metres wide. So after swimming 50 m, the bather will be out of the current: it is then an easy matter to return to the shore.

A problem of a different kind ha been experienced by the village of Chiswell, close to Portland Bill and with Chesil Beach between it and the sea. This has occasionally suffered from flooding when severe southerly gale has raised the general water level at high tide. In addition to this, waves crash on to Chesil Beach, and even if they fail to break over the top of it, the water percolates through and add to the flooding. This happened, for example, on 13th December, 1978. However, Chiswell was flooded again in the early hours of 13th February, 1979 when there was only a slight easterly breeze. What had happened was that three days earlier a depression had formed off Newfoundland and had behaved unusually in at least two respects. Instead of travelling on a curved path and finally heading north eastward, it followed the great circle route which would have taken it up the English Channel. It also travelled faster than most depressions, although not at an unprecedented speed, but at one which happened to coincide with the speed at which wave energy in the 18 - 20 second period band travels. Consequently it preferentially reinforced these waves.

By the time the depression reached mid-Atlantic, it had filled and disappeared from the weather maps. Unnoticed by almost everyone, this parcel of wave energy took on the guise of a missile targeted on the English Channel. To complicate matters further, the energy arrived in the Channel at the time when a surge had lifted the mean water level by nearly a metre, on top of a moderately high spring tide. The waves aggravated the situation still further through what is known as wave set-up, whereby the water of the spent and broken waves could not easily return to the sea because it was held back by yet more approaching waves (the same mechanism that produces rip currents). A study of refraction of such waves in the Channel shows that these 20 second period waves would have come to a focus in the middle of Lyme Bay, and the 18 second ones would have focused on Dorchester, so Chiswell was directly in line of fire. The waves, being of extremely large wavelength and several metres high, could properly be described as swell, and as such could be expected to try to build beaches. This they did with a vengeance, picking up Chesil Beach pebbles and hurl ing them in huge quantities right over the top of the bank at the luckless settlement of Chiswell, still tidying up after some considerable time after the chaos of the 13th December.

At present it is virtually impossible to assess how often such a situation is likely to arise, but it might just be that the 13th February, 1979 situation could be near the worst. Certainly, a faster moving storm would enhance a longer-period part of the spectrum which has less energy, so the total energy in the waves would be less, whilst a slower moving storm would enhance a shorter period of the spectrum which would decay more rapidly, and also not be so efficient at beach building - or settlement wrecking.

This is not the first time that this type of synchronism has caused disaster, and it could easily happen again. In the summer of 1066 a pleasure cruiser from Falmouth with over 30 people on board left Fowey for the return trip. The black sky looked forbidding, but the wind was slight and the sea was not rough.
Unknown to the crew and passengers, a front was approaching, and it was travelling at almost the same speed as the waves with the wind associated with the front had generated; such synchronism is quite unusual. Within an hour the luckless vessel was enveloped in severe winds and rapidly increasing waves and, probably compounded by engine failure, foundered with all on board.

Conclusions

There are many aspects to the growth of our knowledge of waves and their effects. The sizes of waves, their frequencies of occurrence and the chance of a rare event are all now cal-

culable, usually within acceptable degrees of error, and some of the, perhaps, unexpected consequences of waves are at least partially understood. All this has been achieved by the dedicated application of modern technology and advanced theoretical understanding. The co-ordination of these many aspects has been just one of the achievements which has enabled oceanographers to provide the necessary basis on which engineers can now design more safely the many structures and vehicles which have to withstand the ravages of the sea.

There are several important areas where work must continue as a matter of urgency. For example, we must:

i) expand our routine and research collection of wave data, including using satellite sensors to give us almost instantaneous monitoring of wave conditions over a large part of the worlds' oceans;

ii) continue studies of the mechanisms of wave breaking and the ensuing forces;

iii) investigate further the directional properties of waves to aid engineering design;

iv) understand the behaviour of wave groups, as this could help us to improve the safety of shipping;

v) continue to study the occurrence of extreme waves to enable design to be nearer to the optimum level, as the cost of 'over-design' is not low; and

vi) improve mathematical models of wave prediction for use in conjunction with improved meteorological services to reduce the magnitude of such disasters as the Fastnet tragedy.

The oceans and seas are not so easily mastered by nonaquatic creatures, but they are much safer than they were 30 or 40 years ago, provided that we continue to develop and make full use of our knowledge - and accept that waves can be capricious.

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by RICHARD SHEARS

It looks as if Britain might need to revive its great seafaring tradition - and that's just to visit other parts of the country.

For this map reveals what will be left in only 300 years if the latest dire scientific prediction of a 200 ft-plus rise in sea levels comes to pass.

According to researchers in the South Pole, global warming will cause the ice-sheet to melt much faster than previously suspected - swamping low-lying areas and creating a radical new look for the British Isles.

The results will put an end to fears of economic overheating in the South-East for good, as well as wiping out the likes of Cardiff, Liverpool, Norwich, Newcastle and Southampton.

The scientists studying shifts in the earth's temperatures at Cape Roberts in the Antarctic have suggested that, after cool ing down for millions of years, the effects of global warming could reverse the trend and revert the South Pole to its prehistorical ice-free climate. Using a huge drilling rig, the £4million project has brought to the surface rocks that are 350million years old which throw light on the ancient climate.

The researchers have found that since the time when dinosaur roamed a tropical South Pole the world has cooled by 6.5 degrees centigrade.

That fall, they believe, could be reversed within 300 years as a result of global warming produced by industrial pollution.

Their global warming theory has, however, received an icy response from some scientists. Last night Dr Eric Wolff, a glaciologist from the British Antarctic Survey - which is one of the Cape Roberts' project partners - said: If there is to be any melting, it's going to be a few thousand years away. It would be like thawing out a frozen chicken. It would take thousands of years to melt the core.'

Dr Wolff pointed out that a conclusion that the melting would take only 300 years could be reached if the data was incorrectly assessed. 'You can go back 40million years or so and find a period when the ice-sheet was not there, but it was 5c warmer than it is now. You can then say that when it gets another 5c warmer from now the ice-sheet will not be there again.

'But the temperature and time needed for removing an ice sheet are completely different from that needed to create one .'Dr Wolff said a rise of just three to six feet - rather than 200ft - in sea levels was more realistic over the next 300 years.

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