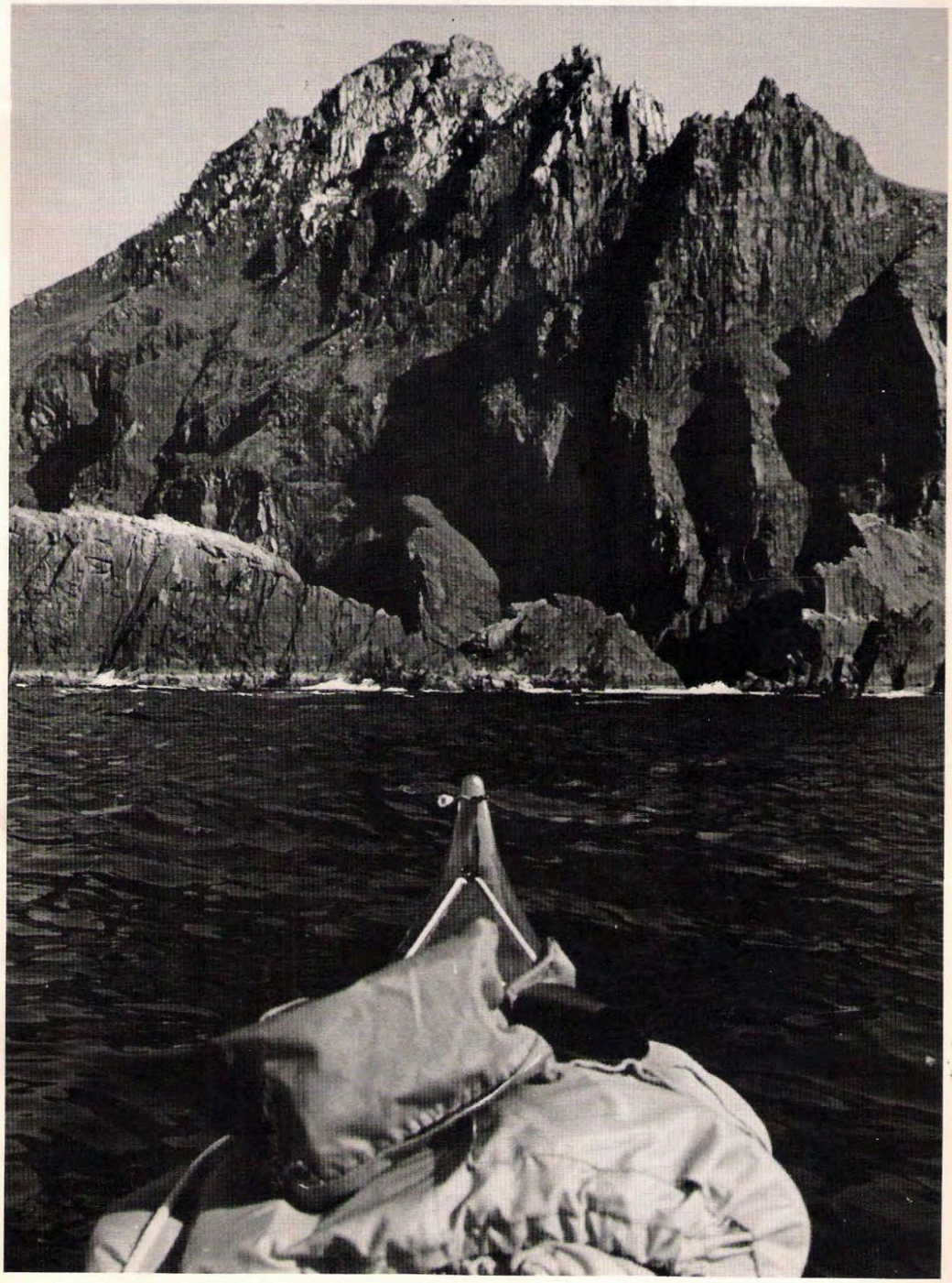
BRITISH KAYAK EXPEDITION
CAPE HORN
OFFICIAL EXPEDITION REPORT



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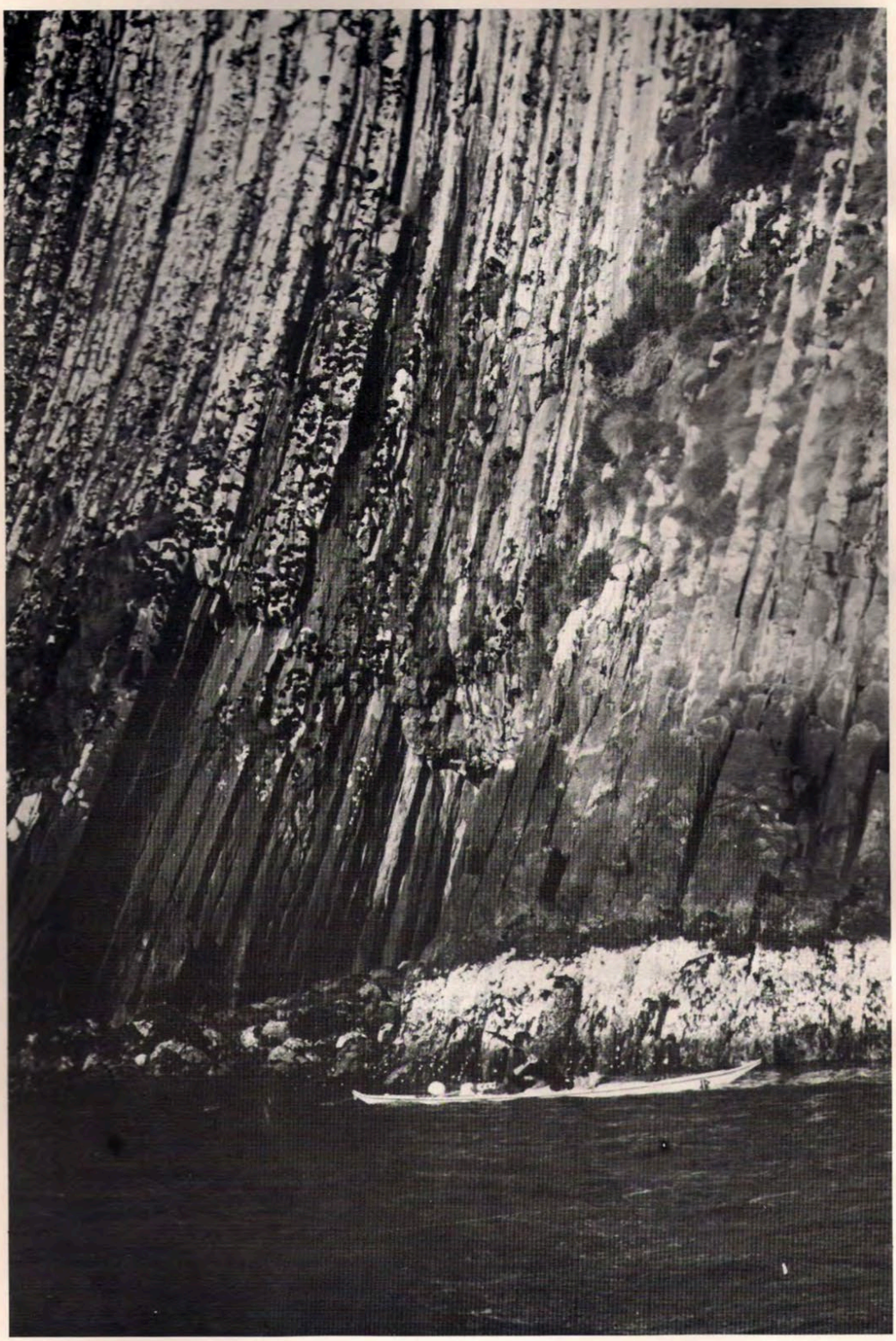

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NAUTICAL MILES

ISLA NAVARINO

Bahia Nassau

THE BEGINNINGS *Nigel Matthews*

After the Nordkapp expedition of 1975, Colin Mortlock and myself decided to make another journey by kayak. No firm decision as to the area was made but we had already decided that four would be an ideal number for the next expedition. Frank Goodman and Barry Smith were invited to join us.

Finance, the bane of all expeditions was uppermost in our minds. What was the secret of raising sufficient funds to get us all there and back? Would the public be prepared to donate to an expedition? The answer was certainly not, unless the objective of the expedition caught their imagination. What we needed was a household name, an Everest or Cape Horn.

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Eventually we decided that our starting point was to be Puerto Williams, a purpose built Naval base in the Beagle Channel on the Island of Navarino and served by a small airstrip. Through the generosity of the Chilean Navy we could be flown in and our kayaks shipped the last 150 miles to the base if we could get them to Punta Arenas.

From Williams the round trip taking in the Horn would be almost 250 miles. Notoriously bad weather and extremes of temperature reduced our proposed daily mileage to 10-15 miles. We could carry food for thirty-two days supplementing this along the way with fish and fungi, berries, other wildlife and shellfish. To allow time for the journey out, a two month maximum was worked on, our departure to be in early December. While this period of the year, the Chilean summer, would not give us the calmest weather at least the temperatures would be at their highest.

More detailed planning of the route, thorough searching of the pilot, for sheltered bays, exposed crossings and tidal rates took place in the cramped confines of a Bude caravan during the National Surfing Championships. It wasn't that we were dedicated, the surf was poor!

Further local information was gained from Commander Pugh at the offices of the Chilean Naval Attache in London, and William Gardiner who had been headmaster at the English School in Punta Arenas and was himself a canoeist. Slides William Gardiner was able to show us gave a great deal of encouragement. The sea was occasionally calm and the coastline sometimes flat enough to take a tent. About the same time we were sent an article from a boating magazine making reference to landing points on the Horn. Perhaps it was possible after all! Armed with this meagre information the route was committed to the chart, later to be followed almost exactly.

Out of the blue came the news that Colin Mortlock had decided to withdraw from the venture. There was little doubt that the three remaining members would carry on. Colin opting out brought about a major change in the basic structure of the expedition. We would continue as a democractic unit without a formal leader. Background experience was similar, each had strengths and weaknesses: hopefully we would compliment each other. Decisions would be "committee".

Four still seemed the best number, a replacement was needed. From a short list, Jim Hargreaves was invited to join. He had been a member of the first British expedition down the Colorado and no newcomer to big water. He was also elected to the onerous task of quartermaster.

While each had some special area to look after, we worked with the underlying principle that we would obtain whatever we could. Barry worked wonders amassing a huge pile of equipment ranging from radios to plastic knives and forks. Frank had the job of secretary and trying to raise financial support while I had the photographic and medical side of things. However as the months passed jobs overlapped.

Money was a constant worry particularly the air fares out there. When it seemed as if we'd never get to Gatwick let alone Punta Arenas, the eternal optimism of Frank encouraged us all with, "I just know we'll get there".

THE JOURNEY *Frank Goodman*

Although many people have passed around Cape Horn, few people have explored the intricacies of the channels between the Horn and the Magellans. Information about this area is very scarce indeed, and what was available seemed to be aimed at the larger vessels likely to use the area, and therefore much of the information was not relevant to canoeing.

It is the almost total lack of information of course that makes the Cape Horn archipelago such an exciting challenge to the canoeist. We had only a small scale chart and the scant information contained in the South American Pilot when we left England. Talks in Puerto Williams with the Chilean Navy and the local crab fishermen produced only conflicting reports about tide races. The Chilean Navy was able to provide some tidal information giving times of high water and the range for the first few days of our journey.

The essence of sea-canoeing can be summarised under 4 headings:

1. Tides.
2. Weather.
3. Landing places.
4. Escape routes.

The tide range never exceeded 3 metres on springs, and this, coupled with our experience of a 3 knot north-going stream in the Murray Canal on the ebb convinced us that tidal movement would be the least of our problems. This indeed was the case, and apart from an occasional check for drift, we found that we could safely ignore tidal effects.

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than ten minutes. Several times the wind backed through 90 degrees instantly, with no change of cloud pattern and often visibility would reduce from over thirty miles to half a mile in a matter of seconds. Thus the weather completely dominated our thinking throughout the journey and all decisions were made only after a very careful appraisal of likely meteorological events.

Although there were many areas where the coastlines are cliff-bound, we never experienced much difficulty in finding suitable landing places. This was a combination of careful scrutiny of the coast line ahead of us and a level of fitness that enabled us to paddle a few extra miles without fatigue if necessary. The rainfall is such that almost every bay or beach had a rivulet of drinking water available to us.

Although we planned every day on the principle of "Where do we go and what do we do if the weather deteriorates?" there were three major obstacles in our journey where realistic escape routes in rapidly deteriorating weather conditions were not possible.

These were:

1. The ten mile crossing from Hoste Island to Grevy across Paso Nassau (Day 8). This was accomplished by setting out at four o'clock in the afternoon as wind speeds dropped after the passage of a depression.

2. The journey around Cape Horn Island itself (Day 12). This was a fifteen mile, five hour paddle with at least three hours of total commitment on the western side of the island. We began in calm conditions at 5.30 a.m. with clear skies and some approaching cirrus. We landed on the east side of the island at 10.30 still in calm conditions, but by mid-day there was a full gale blowing again. The sky remained clear and there was no indication that the wind would increase.

3. The crossing of Bahia Nassau from the northern end of Woolaston Island to the S.E. corner of Naverino (Day 16). This was the most committing crossing of all as it involved a sixteen mile paddle (almost the equivalent of the English Channel) with no land at all to the east. Also we had achieved our main objective by this time, which meant that it was easy to under-estimate the danger as we were 'on our way home'. We set off in calm conditions about ten o'clock in the morning after an hour-long discussion with regard to its feasibility. A vicious day previously had left an early morning legacy of cumulonimbus clouds that cleared away to the south east. We finished the crossing in a force five/six with some relief!

All members of the team tackled Cape Horn in an entirely different way from their normal approach to sea-canoeing, which often involved looking for testing situations in the form of long crossings, difficult tide races and overfalls and testing wind conditions. Our approach was one of caution, and a healthy respect for the unknown. Although none of us felt that we had been pushed to our physical limits, the heavy blow at the end of the second day, the huge swell and tricky clapotis off Cape Horn and the aches and pains we all experienced after our third day on the water made us realize that our margins were quite small. One minor piece of bad luck, a lapse in planning or a little less stamina could have easily spelt out another story.

Mentally, we were all under a long term strain owing to the extreme unpredictability of the weather but this was amply compensated for by the tremendous feeling of remoteness and grandeur that we all experienced.

DIARY

August 1977
Four kayaks, packed with dehydrated food, camping gear and ancillary equipment, leave London by sea for Punta Arenas, Magellanes, Chile.

November 1977.
Chilean Navy trans-ship kayaks to Puerto Williams on the Beagle Channel.

November 28th
Expedition team gather in Nottingham for fitness tests at the University Medical School, and for last minute preparations.

December 1st
Team fly from Gatwick for Punta Arenas, via New York, Miami and Santiago.

December 5th
Team arrive in Punta Arenas.

December 7th
Special arrangements by the Chilean Navy allow the team to fly on to Puerto Williams, the expedition start-point.

DAY 1 December 11th
Two kayaks severely damaged in shipment, had to be repaired, and all gear including radios and filming equipment packed into the boats. The team left at 1.00 p.m. Camp made after a ten mile paddle against the wind. Nigel's kayak discovered to be severely twisted, and handling badly.

DAY 2 December 12th
Nigel's kayak repaired by heating over camp-fire, straightening, and re-glassing into shape. A sixteen mile paddle into strong head winds finishing with a bad force 8 blow before landing for the night.

DAY 3 December 13th
Wind north westerly, and helpful as the team moved south through the Murray Canal against a three knot tide race. Good eddies each side of the channel. Wind slackens and Centolla (King Crab) fishermen give us a large crab, which is fastened to Jim's canoe. Wind increases from N.W. and we decide to run for Caleta Douglas. Jim and Frank miss the narrow entrance and finish three miles south of planned destination. Short-wave radio used to establish contact with Nigel and Barry, who are in the right place but worried. Jim and Frank complete a 28 mile day with a hard push back into force 6/7 winds. The crab is washed away!

DAY 4 December 14th
Rest day. All team members have slight physical problems after the rigorous paddling. A bright day gusting 8. We feed on goose eggs and fungus, dig in Yaughan Indian beach middens and see Condors.

DAY 5 December 15th
Set off in force 3. Crossed Murray Canal and mouths of several inlets. Cold. Made lunch-stop into night-stop as weather worsened. Camped on bog in forest. Rain and wind all night. 17 miles covered.

DAY 6 December 16th
Broke camp in wet and paddled to Isla Yellow ready for the crossing to the Woolaston Group. Early camp after only eleven miles. Dried out in perfect evening. Early bed, woken at 10.00 p.m. by gale from the N.

DAY 7 December 17th
Set off in calming seas, but returned to the same campsite as weather worsened, gusting 40 knots by mid-

than ten minutes. Several times the wind backed through 90 degrees instantly, with no change of cloud pattern and often visibility would reduce from over thirty miles to half a mile in a matter of seconds. Thus the weather completely dominated our thinking throughout the journey and all decisions were made only after a very careful appraisal of likely meteorological events.

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Set off in calming seas, but returned to the same campsite as weather worsened, gusting 40 knQts by mid-

day. Slept.

DAY 8 December 18th

Awoke to bad visibility and a blow. Wind moderated slowly during a day spent exploring the island on foot. Set off in force 2/3 westerly about 4.00 p.m. Hit 6 ft. breaking sea on crossing but arrived on the Woolaston Group in 2½ hours. Made a late camp after 17 miles paddled.

DAY 9 December 19th

Calm. Set off in perfect conditions but whales in the bay upset our route planning. Made for an island but six whales cut us off! Carried on after whales moved out to sea. Paddled 22 miles and stopped at a radio hut. Big welcome from the Chileans who had heard us on their radio. Gale in the night.

DAY 10 December 20th

A difficult launch off rocks in a force 5/6. Crossed to Hershal Island and landed at Copihue Radio Hut for coffee. Eight miles paddled. Wind increased to gale. Decided to stay put. Cape Horn Island looks gloomy across the spray-streaked sound.

DAY 11 December 21st

Blowing full gale and gusting to 45 m.p.h. outside the hut which was sheltered. Difficult walking. Slept.

DAY 12 December 22nd

Up and on the water by 6.00 a.m. Wind force 1 to 2. Paddled south and then west. Crossed to N. shore of Cape Horn Island in very long low swell. The N.W. corner of the island is magnificent with huge stacks and an arch, detached from the main cliff. A huge swell of 15 metres height became difficult as the clapotis from the base of the cliffs was superimposed. Awesome, with spray drifting 10 metres high along the shore and the breaking waves sounding like howitzers. Two hours of this to get to Cape Horn itself. With the swell running along the face of the cliffs of Cape Horn things became easier and we managed to get slides and movie. Rounded Cape Horn, 9.15 a.m., 22nd December, 1977. Another hour and we were in the shelter of the east coast and we landed. Lay in the sun, but gale again by 12.30. Bad camping. Put up fly-sheet only and bivied on the boulder beach. 14 miles paddled.

DAY 13 December 23rd

Rest day. Climbed to top of Cape Horn, 400 metres. Very hard going in either dense vegetation or bog. Wind indicator jammed at maximum - 70 m.p.h. Lot of penguins, most with pair of chicks. Also eagles, cormorants and albatross.

DAY 14 December 24th

On water by 6.00 a.m. Last of gale blowing out. Made good progress north and called at radio hut on Isla Woolaston. While ashore the radio operator saw an Orca (Killer Whale) in the channel. One of the marines fired at it several times and missed, but it went away. Continued north. Paddled 24 miles.

DAY 15 December 25th

Xmas Day. Stayed put on beautiful sandy beach called Caleta Middle. Looked for shell-fish but found none. Very bad blow after lunch. Slept. Rain in night.

DAY 16 December 26th

Boxing Day. Nottingham Radio Ham picks up a message from the Falkland Islands saying we have rounded the Horn. Away at 6.00 a.m. Lots of cu-nimbus about. Paddled to Cabo Ross at north end of Woolaston. Decided not to cross Bahia Nassau. After an hour changed our minds as weather improved quickly from the N. First hour calm, then force 3 from N.W. slowly strengthening and backing west. Finished the 16 miles crossing in force 6 after 4¾ hours. Another large whale close. Continued along east coast of Navarino, but wind backed S.W. and helped us. 24 miles paddled to a sheltered campsite.

DAY 17 December 27th

Relaxed after the major crossing, but psychologically wanted to get back to base. Hard paddling as we gained the Beagle Channel and headed west into the wind. Rained all day. Paddled 25 miles.

DAY 18 December 28th

12 miles to go for Puerto Williams. Tents dry, but rain started as we launched. Hard work again in force 6 head-wind. Short seas. Lots of spray. Rounded headland and saw Pto. Williams three miles away. Sea dropped off as we gained the shelter of the bay. Williams seemed deserted, but as we neared the harbour people tumbled out of houses and lined the jetty. We had a marvellous welcome with ships' sirens and water hoses. The whole population of the town met us on the beach. The Naval Commander said "When you left, I thought you were loco. Now I think you're only half loco!"

Cable sent to England to say that the expedition was successful and safe. 1

Number of nautical miles covered 227

Number of days on the water 18

December 31st

Flew out of Puerto Williams in light plane after packing up canoes for shipment home.

Some trouble with visas in Chile but eventually arrived at Gatwick, mid-day January 12th, 1978.

PERSONAL PREPARATION

Jim Hargreaves

The fact that I work as an instructor in outdoor activities, specialising particularly in canoeing, means that my daily work helps to keep me in a fairly good state of canoeing fitness. My work is mainly with adults, and I am therefore able to undertake longer, more taxing canoe journeys than if I dealt only with young people. In addition, I also go canoeing frequently in my spare time. To be perfectly honest I did not feel disposed towards special training or physical preparation of any kind, I felt this would have made canoeing a chore rather than a pleasure, and I therefore decided to follow the philosophy of one eminent expeditioner and ".....Get fit doin' it".

Despite the amount of canoeing I do in the course of my job, I felt very guilty when I discovered how much preparatory work the others had put in. Perhaps I was being unfair to myself in actual fact, as Frank's business commitments did not allow him to canoe as frequently as he would have liked. This coupled with the fact that he was the oldest in the group and thus felt, unfoundedly, that he would therefore be the weak link, drove him into a masochistic training schedule which reduced him to a mere wafer of his former, rather portly, self. Barry is also a very active instructor, and did a great deal of paddling before he went. Nigel, due to an unfortunate football injury was unable to grip a boat for many months before departure, and probably suffered, physically, more than anyone else. I undertook, therefore, no special training of any kind, preferring to face the event with a degree of residual fitness, hoping that this, along with a little 'mind over matter' would carry me through.

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DAY 11 December 21st
Blowing full gale and gusting to 45 m.p.h. outside the hut which was sheltered. Difficult walking. Slept.
DAY 12 December 22nd Upandonthewaterby6.00a.m.Windforce1to2. Paddled south and then west. Crossed to N. shore of Cape Horn Island in very long low swell. The N.W. corner of the island is magnificent with huge stacks and an arch, detached from the main cliff. A huge swell of 15 metres height became difficult as the clapotis from the base of the cliffs was superimposed. Awesome, with spray drifting 10 metres high along the shore and the breaking waves sounding like howitzers. Two hours of this to get to Cape Horn itself. With the swell running along the face of the cliffs of Cape Horn things became easier and we managed to get slides and movie. Rounded Cape Horn, 9.15 a.m., 22nd December, 1977. Another hour and we were in the shelter of the east coast and we landed. Lay in the sun, but gale again by 12.30. Bad camping. Put up fly-sheet only and bivied on the boulder beach . 14 miles paddled.
DAY 13 December 23rd
Rest day. Climbed to top of Cape Horn, 400 metres. Very hard going in either dense vegetation or bog. Wind indicator jammed at maximum - 70 m.p.h. Lot of penguins, most with pair of chicks. Also eagles, cormorants and albatross.
DAY 14 December 24th
On water by 6.00 a.m. Last of gale blowing out. Made good progress north and called at radio hut on Isla Woolaston. While ashore the radio operator saw an Orca (Killer Whale) in the channel. One of the marines fired at it several times and missed, but it went away. Continued north . Paddled 24 miles .
DAY 15 December 25th
Xmas Day. Stayed put on beautiful sandy beach called Caleta Middle. Looked for shell-fish but found none. Very bad blow after lunch. Slept. Rain in night.
DAY 16 December 26th
Boxing Day. Nottingham Radio Ham picks up a message from the Falkland Islands saying we have rounded the Horn. Away at 6.00 a.m. Lots of cu- nimbus about. Paddled to Cabo Ross at north end of Woolaston. Decided not to cross Bahia Nassau. After an hour changed our minds as weather improved quickly from the N. First hour calm, then force 3 from N.W. slowly strengthening and backing west. Finished the 16 miles crossing in force 6 after 4% hours. Another large

whale close. Continued along east coast of Navarino, but wind backed S.W. and helped us. 24 miles paddled to a sheltered campsite.
D A Y 17 December 27th

Relaxed after the major crossing, but psychologically wanted to get back to base. Hard paddling as we gained the Beagle Channel and headed west into the wind. Rained all day. Paddled 25 miles.

DAY 18 December 28th
12 miles to go for Puerto Williams. Tents dry, but rain started as we launched. Hard work again in force 6 head-wind. Short seas. Lots of spray. Rounded headland and saw Pto. Williams three miles away. Sea dropped off as we gained the shelter of the bay. Williams seemed deserted, but as we neared the harbour people tumbled out of houses and lined the jetty. We had a marvellous welcome with ships' sirens and water hoses. The whole population of the town met us on the beach. The Naval Commander said "When you left, I thought you were loco. Now I think you're only half loco!"

Cable sent to England to say that the expedition was successful and safe. 1 Number of nautical miles covered . …. … …… 227 Number of days on the water . . . . … . …… …. 18 December 31st
Flew out of Puerto Williams in light plane after packing up canoes for shipment home.
Some trouble with visas in Chile but eventually arrived at Gatwick, mid-day January 12th, 1978.

PERSONAL **PREPARATION**

Jim Hargreaves

The fact that I work as an instructor in outdoor activities, specialising particularly in canoeing, means that my daily work helps to keep me in a fairly good state of canoeing fitness . My work is mainly with adults, and I am therefore able to undertake longer, more taxing canoe journeys than if I dealt only with young people. In addition, I also go canoeing frequently in my spare time. To be perfectly honest I did not feel disposed towards special training or physical preparation of any kind, I felt this would have made canoeing a chore rather than a pleasure, and I therefore decided to follow the philosophy of one eminent expeditioner and".....Get fit doin' it".

Despite the amount of canoeing I do in the course of my job, I felt very guilty when I discovered how much preparatory work the others had put in. Perhaps I was being unfair to myself in actual fact, as Frank's business commitments did not allow him to canoe as frequently as he would have liked. This coupled with the fact that he was the oldest in the group and thus felt, unfoundedly, that he would therefore be the weak link, drove him into a masochistic training schedule which reduced him to a mere wafer of his former, rather portly, self. Barry is also a very active instructor, and did a great deal of paddling before he went. Nigel, due to an unfortunate football injury was unable to grip a boat for many months before departure, and probably suffered, physically, more than anyone else. I undertook, therefore, no special training of any kind, preferring to face the event with a degree of residual

fitness, hoping that this, along with a little 'mind over matter' would carry me through .

All of us found it very gruelling at times, though rarely concurrently, and will was often taxed as much as muscle. By the third day, for the first time in ten years of very active canoeing, I suffered from the dreaded Teno-synovitis. My left wrist (I am right handed) was creaking like a retired celibate monk's bed on his wedding night! Starting each subsequent day's canoeing was a very painful ordeal, and after two more days I couldn't even stuff my sleeping bag into its waterproof outer without considerable discomfort. I even contemplated taking 'Fortral' tablets, a strong analgesic, but resisted, and luckily, after three more days my wrist returned to normal. In my experience Teno-synovitis is normally treated with strict abstention from exercise, in my case this was impossible, but for some reason the condition improved, despite arduous paddling. I will never know if the onset of this condition would have been rendered less likely by a more comprehensive training programme. I doubt it.

It is very important to be fit, both physically and mentally, for any expedition which may make demands upon the body's reserves. Although sheer strength may in itself carry you through a trying situation, there have been many occasions on exploratory expeditions in the past when men who were endowed with very little strength of arm, have out-survived others of herculean frame. This can only be attributed to mental determination, and it is this which, if developed, can make the difference between living or dying, succeeding in your ambitions, or failing. Not that our will to live was at any time tested, but our determination to succeed was, and our unity in this respect was so strong that we never really anticipated failure. On the odd occasion it was necessary, when morale was at a low ebb, or strength was wanting at the end of the day, to get a transfusion from one of the others who was not in the 'Doldrums' a joke or some cheerful remark was always forthcoming, and your weakness, hidden from view by pride, would never become apparent.

To conclude, one of the most difficult aspects of any fitness training programme for a specific event, is to plan your training schedule so as to reach a coincidental peak. Having said that, any training is better than none, and if you prefer the trauma of unusually hard work being thrust upon a totally unprepared, bewildered body, that's up to you.

If you prefer to get fit doing it, don't expect any sympathy.

PERSONAL PREPARATION

Frank Goodman

There are two types of dream that people are apt to indulge in. One is the pipe-dream, where the brain conjures up a fantasy that is so manifestly beyond the possibility of fulfilment, that no positive steps are ever taken to try and achieve realisation. The other is the dream that stimulates action because its substance is not completely beyond the bounds of possibility.

The dream of rounding Cape Horn by kayak was never a pipe-dream to me, because I was already deeply committed to sea-canoeing, and knew that with a bit of luck the journey was possible. Certainly the idea stimulated me into action in terms of making it a reality, and I had no qualms about the logistics. My only real concern was to make sure that I was physically capable of making a committing journey. At forty seven I felt that I was too old to start a really vicious training programme, and I decided to cut down on food, as I was definitely over-weight, and to start running at lunch-time. A convenient distance was just over a mile and a half, and although in theory, I wanted to run every week-day, on average I managed three times a week. I don't enjoy running and the only consolation was that my time for the run slowly got faster and my heart-rate slowly reduced. To improve my stamina I decided to force myself into a twelve mile paddle on the Trent twice a week, but I soon became utterly bored with this, and eventualiy decided that the most interesting way of getting reasonably fit was to take up slalom again. I had not done any slalom at all since 1970 when I had reached the dizzy heights of 1st. div. I also had never paddled a low profile slalom canoe. Much to my surprise, I found that I was utterly hopeless at getting through a slalom gate, and I really enjoyed working away at my lost slalom skills and learning the new ones that were pertinent to low profile boats. I am still convinced that practice through slalom gates, whether on still or moving water is the best and quickest way to gain both skill and confidence for any sort of canoeing. In addition to competing in slaloms and gate practice, I also paddled 7½ miles on the Trent every Sunday afternoon, this was harder than it sounds as the Trent is flowing quite fast above King's Mill near Castle Donnington, and I slowly increased my speed until I could paddle upstream, 3.75 miles to Swarkestone in one hour, and make it back again in half an hour. At school I had spent five years learning algebra. At last I found a use for a minute portion of what I had learnt ... such is the price of education! A simultaneous equation can be applied and the answer was that I was paddling at a speed of 5.25 miles per hour on a river with an average flow of 2.25 m.p.h. This pleased me more than the hard work of paddling! Although the above sounds a rather low profile of training, I found that I did get much fitter, and that I was able to burn off a few youngsters who paddled with me on occasion. My weight did not reduce, however, and prior to leaving for the Horn we all had a fitness test and I was still 25% fat!

PERSONAL PREPARATION

Barry Smith

Training is a necessary element in all competitive sports. That it has been so slow to infiltrate activities where the aspect of competition is less overt is perhaps surprising. To rock climb at a high standard and succeed on difficult new routes for most people requires practice on artificial climbing wall, weight training etc. Sea canoeing comes further down the competitive ladder. In spite of the caustic regional rivalry which sometimes appears to characterise this sport, paddling is essentially a team effort. Vivid memories are often made of near epics in helping other parties or in concern for other members of your group. Thus personal fitness can be quasi-competitive in that one perhaps wishes to be the strongest member of the group, or at least not a weak link in the chain, but on a committing journey in an isolated area it is a vital safety factor.

Two factors determined my attitude towards training for the expedition. We were flying to our starting point, involving an inactive period of only

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Two factors determined my attitude towards training for the expedition. We were flying to our starting point, involving an inactive period of only

about ten days during which our body condition would deteriorate very much. Furthermore, we anticipated no easy build up to the paddling, no walk in to base camp, and a high level of physical and mental fitness was considered vital to cope with difficult water and unknown terrain during the early days.

Working at a college of physical education I was fortunate to be able to draw upon some valuable resources. As part of a science project a cine film was made of me paddling in a range of strenuous and exhausting situations. This provided the visual basis for a limited analysis of paddling technique, and resulted in a multi-gym weights programme with exercises specifically relating to strength and stamina in kayaking.

I paddled irregularly, but whenever possible, on the local waters of the Firth of Forth, although time seldom permitted for long distance stamina to be improved. Running, with limited interval training, was used to improve general fitness, but I was not particularly successful nor sufficiently determined to overcome this pain barrier.

PERSONAL PREPARATION

Nigel Matthews

As I am based in a county in the middle of England, about as far from the sea as you can get, regular sorties to the coast were difficult, especially as work commitments left very little spare time. Before I undertook the Irish Sea crossing I had paddled at least once a day on the sea almost every day for six months because at that time I lived on the coast. My hands had become hard and my legs and backside were accustomed to the confines of a sea-boat cockpit. Unfortunately while paddling thirty mile stretches in all sorts of sea conditions became easy, training in general became very boring.

This mental aversion to training meant that no special preparation for the Nordkapp expedition was undertaken other than a circumnavigation of Skye at breakneck speed the Easter before, and competing regularly at slaloms. Retirement from the slalom scene, and less involvement with coaching, however, reduced paddling to a minimum. Easter 1977 saw an abortive attempt on Cape Wrath where the only conditioning was a lengthy portage across the headland — much to the amusement of the lighthouse keepers who knew of our plans to attempt the rounding of Cape Horn the following Christmas.

The summer was more successful and we made a leisurely circumnavigation of Mull. While obviously being aware of the need to be fit I felt that as long as there was a general level of fitness the ability to paddle day after day depended more on a sound mental attitude. General fitness was achieved and maintained by playing squash as often as possible, by playing football once a week, by spending one night circuit training in the gym and one night on the ski slope. I made no special effort to build up strength or stamina in the upper body.

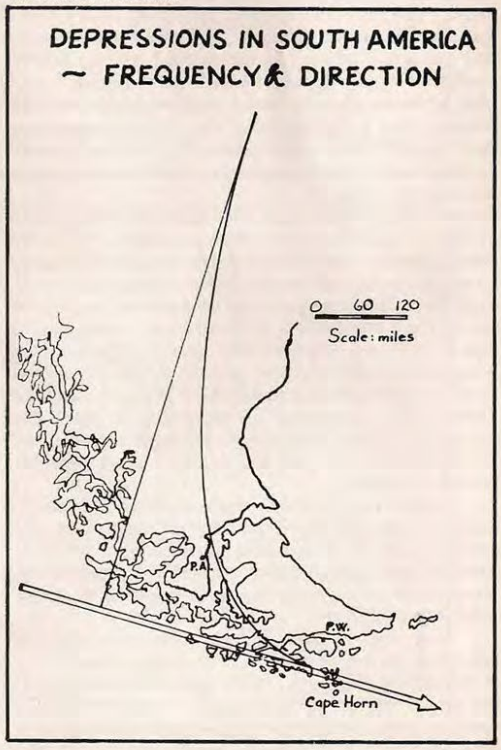
Medical tests before and after the expedition showed no great variation in fitness between team members. Experience would seem to count as much as fitness assuming that a reasonable diet and adequate sleep throughout the expedition helped us to maintain the fitness we had built up. In similar circumstances I would follow the same training programme, keeping actual paddling to the minimum for maintenance of skill levels, then work on a general fitness scheme of running, circuit training, squash and a major game. A factor which must not be overlooked is the ability to sit in the boat for long periods. The seat should be designed for comfort and it should be tested by each individual paddler.

It must also be borne in mind that no two persons are going to be entirely happy with the same programme, but training in company is usually more interesting than training alone. On the other hand the only way to build up the confidence required to undertake expeditions of this degree of challenge is to be psychologically prepared, to know that even though you are one of a group you must be completely in control of yourself in terms of self rescue, because we were in situations where we were separated in very dangerous situations which can be quite an unnerving experience off the Horn!

THE WEATHER

Frank Goodman

Contrary to the impression gained by a cursory glance at a world atlas, Cape Horn is not as far south as most people suppose. In fact it's latitude south of the equator is comparable to the latitude of Edinburgh and the border counties.



Taken from: The Human Geography of Southern Chile. Gilbert Butland, Inst. of British Geographers Pub. No.24, 1957.

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DEPRf~~/ONS ***IN*** **SOUTH AMERICA**

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Taken from: The Human Geography of Southern Chile. Gilbert Butland, Inst. of British Geographers Pub. No.24,1957.

This places Cape Horn just as surely in the latitude of the westerlies as are the British Isles in the northern hemisphere. As atmospheric circulation is reversed in the southern hemisphere, Cape Horn is subjected to a series of depressions moving in a direction just north of west, whereas our's approach from the WSW.

Since depressions are essentially areas of low pressure with the winds spiralling in towards the centre, it is clear that the idea so commonly held, of winds circulating for ever around the southern ocean cannot in fact be true. While the centres of the depressions move ever eastwards, the winds associated with them move around the low pressure areas from all points of the compass. Why then is the weather of the Roaring Forties so feared? Is it worse than the weather of the northern hemisphere? And if it is, why?

The answer seems to be that the southern ocean is indeed more windy than the comparable latitudes in the north and the reason for this is two-fold. Firstly, the huge area of Antarctica to the south has no counterpart at the north pole and this keeps the pressure gradient of the south very steep, and also injects masses of very cold air into southern hemisphere atmospheric circulation. Secondly, the lack of land surface to the north of antarctica allows the pattern of depressions to develop without upper atmospheric distortion, and this means that the depressions move much faster from west to east, and are usually smaller and more vigorous than northern hemisphere depressions.

We kept a record of wind-speed, barometric pressure and temperature during our journey, but this was usually limited to early morning, mid-day and evening readings. The resulting tables are shown overleaf. A comparison between the barometric pressure and the actual conditions experienced left me utterly confused ... there seemed to be little correlation. It was only after our journey that I understood the lack of pattern, when a Chilean Naval Met. Officer pointed out that since the area often experiences five depressions moving through in two days, my net of three readings a day was too coarse.

Wind The South American Pilot states that wind speeds of force 7 and above can be expected for 30% of the time in summer. Our records showed exactly this figure, so we can assume we experienced an average summer at Cape Horn. The strongest wind we measured was on the top of Cape Horn where my wind gauge jammed at 70 m.p.h. This was at a height of 1400 ft. The sea-level wind speed would have been considerably less than this. Several times we measured speeds of 45 m.p.h., and the Chilean Navy considered the afternoon of Xmas day one of the worst in living memory. We were camped on the lea side of an island and slept in our tents, which remained standing.

Winds from the north were considered preludes to westerly gales by the Chileans, although our one northerly gale did not result in a westerly of comparable strength. This pattern was associated with winds of the warm sector of a depression being followed by strong winds of a cold front.

Very rapid increases in wind speed were common and twice, on the morning the 14th, and on the evening of the 19th of December, winds rose from near calm to full gale in approx. ten minutes. Clear days with bright sunshine were often very windy, and the Chilean naval personnel spoke of: "The brighter the day, the stronger the blow". Sudden changes of wind direction sometimes took place with no indications in the atmosphere. We could only assume that these were small depressions not associated with fronts. Warm fronts, with their classic cloud pattern, usually gave steady increases in wind speed as they moved eastward. Cold fronts and occlusions seemed quite unpredictable as to the winds associated with them. Temperature inversions over the cold water formed during the night on occasions, giving a shallow layer of calm air over the sea at dawn, even though the overcast could be seen rushing past above. As the day progressed, the inversion would suddenly sweep away and the normal westerly would descend to sea-level very quickly. We took advantage of these conditions by rising early and getting on the water by 6 o'clock. Usually by 9.00 a.m. the inversion had lifted and conditions changed from calm to a force three or four almost instantly.

Strong katabatic winds descending from the mountain peaks are notorious in this area. They are known as 'willawaws' and have de-masted vessels lying in supposedly sheltered anchorages. Fortunately, we did not experience this type of squall. The bad blow we experienced at the end of our second day was the rapidly increasing wind associated with the passage of a front, and several other squalls we encountered seemed to be caused by downdraughts from cu-nim clouds.

Temperature The air temperature ranged between 5 and 7 degress C, which was decidedly cold when associated with a strong wind. Temperatures rose rapidly once the sun came out to shine through the unpolluted atmosphere. My thermometer was of the bi-metal strip type, and seemed to suffer from a 'greenhouse effect' if it lay in the sun, giving a hilarious reading of over 100 degrees F. one day! We guessed that we had temperatures in the 70's F if we could find a sheltered spot in the sun in the early afternoon. These were rare occasions!

Rainfall Cape Horn lies in the rain-shadow of the islands to the north and west. Rainfall decreases very rapidly from the 200 inches known to fall on the west coast of Chile. We guessed that it could well be as low as 30-40 inches, judging from the size of the streams and the dryish nature of some of the bogs we explored.

Clouds Warm and cold frontal systems were accompanied by their classic cloud types, of course, but the speed of approach often meant that the nimbo-stratus of a warm front was upon us almost before we had noted the high cirrus! Cumulo-nimbus clouds were often present, but I cannot recall hearing any thunder. Two points were outstanding. Firstly, the high proportion of lenticularis clouds was very obvious. These often formed below the overcast racing above, and their smooth outlines hanging stationary below the ragged stratus often gave a sinister feeling to the sky. Lenticular clouds are associated with vertical waves within the air-flow and we presumed that the vigorous movement coupled with a mountainous terrain accounted for their prevalence. Secondly, the air was very humid, and a very small lowering of temperature was sufficient to condense water-vapour. Thus peaks could spawn clouds so that they looked like active volcanoes with smoke pouring away in the wind. Often clouds would form in situ without any up-lift due to the land, and visibility of over thirty miles could be cut to a mile or less as cloud formed over a wide area in a matter of seconds. Although this cloud was often very low, it never reached sea-level and we never experienced fog. Really poor visibility at sea-level was always due to rain.

The extreme unreliability of the weather was underlined by the naval meteorological service which

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Since depressions are essentially areas of low pressure with the winds spiralling in towards the centre, it is clear that the idea so commonly held, of winds circulating for ever around the southern ocean cannot in fact be true. While the centres of the depressions move ever eastwards, the winds associated with them move around the low pressure areas from all points of the compass. Why then is the weather of the Roaring Forties so feared? Is it worse than the weather of the northern hemisphere? And if it is, why?

The answer seems to be that the southern ocean is indeed more windy than the comparable latitudes in the north and the reason for this is two-fold. Firstly, the huge area of Antarctica to the south has no counterpart at the north pole and this keeps the pressure gradient of the south very steep, and also injects masses of very cold air into southern hemisphere atmospheric circulation. Secondly, the lack of land surface to the north of antarctica allows the pattern of depressions to develop without upper atmospheric distortion, and this means that the depressions move much faster from west to east, and are usually smaller and more vigorous than northern hemisphere depressions .

We kept a record of wind-speed, barometric pressure and temperature during our journey, but this was usually limited to early morning, mid-day and evening readings. The resulting tables are shown over- leaf. A comparison between the barometric pressure and the actual conditions experienced left me utterly confused ... there seemed to be little correlation. It was only after our journey that I understood the lack of pattern, when a Chilean Naval Met. Officer pointed out that since the area often experiences five depressions moving through in two days, my net of three readings a day was too coarse.
Wind The South American Pilot states that wind speeds of force 7 and above can be expected for 30070 of the time in summer. Our records showed exactly this figure, so we can assume we experienced an average summer at Cape Horn. The strongest wind we measured was on the top of Cape Horn where my wind gauge jammed at 70 m .p.h . This was at a height of 1400 ft. The sea-level wind speed would have been considerably less than this. Several times we measured speeds of 45 m.p.h., and the Chilean Navy considered the afternoon of Xmas day one of the worst in living memory. We were camped on the lea side of an island and slept in our tents, which remained standing.

Winds from the north were considered preludes to westerly gales by the Chileans, although our onc northerly gale did not result in a westerly of comparable strength. This pattern was associated with winds of the warm sector of a depression being followed by strong winds of a cold front.

Very rapid increases in wind speed were common and twice, on the morning the 14th, and on the evening of the 19th of December, w~nds rose from near calm to full gale in approx. ten minutes. Clear days with bright sunshine were often very windy, and the Chilean naval personnel spoke of: "The brighter the day, the stronger the blow". Sudden changes of wind direction sometimes took place with no indications in the atmosphere. We could only assume that these were small depressions not

associated with fronts. Warm fronts, with their classic cloud pattern, usually gave steady increases in wind speed as they moved eastward. Cold fronts and occlusions seemed quite unpredictable as to the winds associated with them. Temperature inversions over the cold water formed during the night on occasions, giving a shallow layer of calm air over the sea at dawn, even though the overcast could be seen rushing past above. As the day progressed, the inversion would suddenly sweep away and the normal westerly would descend to sea-level very quickly. We took advantage of these conditions by rising early and getting on the water by 6 o'clock. Usually by 9.00 a.m. the inversion had lifted and conditions changed from calm to a force three or· four almost instantly.

Strong katabatic winds descending from the mountain peaks are notorious in this area. They are known as 'willawaws' and have de-masted vessels lying in supposedly sheltered anchorages. Fortunately, we did not experience this type of squall. The bad blow we experienced at the end of our second day was the rapidly increasing wind associated with the passage of a front, and several other squalls we encountered seemed to be caused by downdraughts from cu-nim clouds. **Temperature** The air temperature ranged between 5 and 7 degress C, which was decidedly cold when associated with a strong wind. Temperatures rose rapidly once the sun came out to shine

through the unpolluted atmosphere. My thermometer was of the bi-metal strip type, and seemed to suffer from a 'greenhouse effect' if it lay in the sun, giving a hilarious reading of over 100 degrees F. one day! We guessed that we had temperatures in the 70's F if we could find a sheltered spot in the sun in the early afternoon. These were rare occasions!

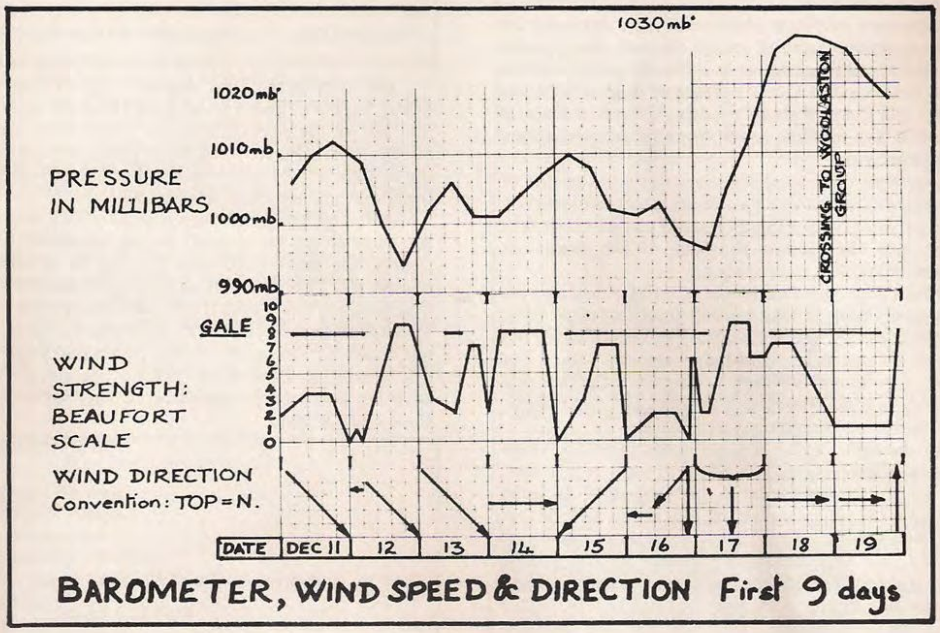
Rainfall Cape Horn lies in the rain-shadow of the islands to the north and west. Rainfall decreases very rapidly from the 200 inches known to fall on the west coast of Chile. We guessed that it could well be as low as 30-40 inches, judging from the size of the streams and the dryish nature of some of the bogs we explored . **Clouds** Warm and cold frontal systems were accompanied by their classic cloud types, of course, but the speed of approach often meant that the nimbo- stratus of a warm front was upon us almost before we had noted the high cirrus! Cumulo-nimbus clouds were often present, but I cannot recall hearing any thunder. Two points were outstanding. Firstly, the high proportion of lenticularis clouds was very obvious. These often formed below the overcast racing above, and their smooth outlines hanging stationary below the ragged stratus often gave a sinister feeling to the sky. Lenticular clouds are associated with vertical waves within the air-flow and we presumed that the vigorous movement coupled with a mountainous terrain accounted for their prevalence. Secondly, the air was very humid, and a very small lowering of temperature was sufficient to condense water-vapour. Thus peaks could spawn clouds so that they looked like active volcanoes with smoke pouring away in the wind. Often clouds would form in situ without any up-lift due to the land, and visibility of over thirty miles could be cut to a mile or less as cloud formed over a wide area in a matter of seconds. Although this cloud was often very low, it never reached sea-level and we never experienced fog. Really poor visibility at sea-level was always due to rain.

The extreme unreliability of the weather was underlined by the naval meteorological service which

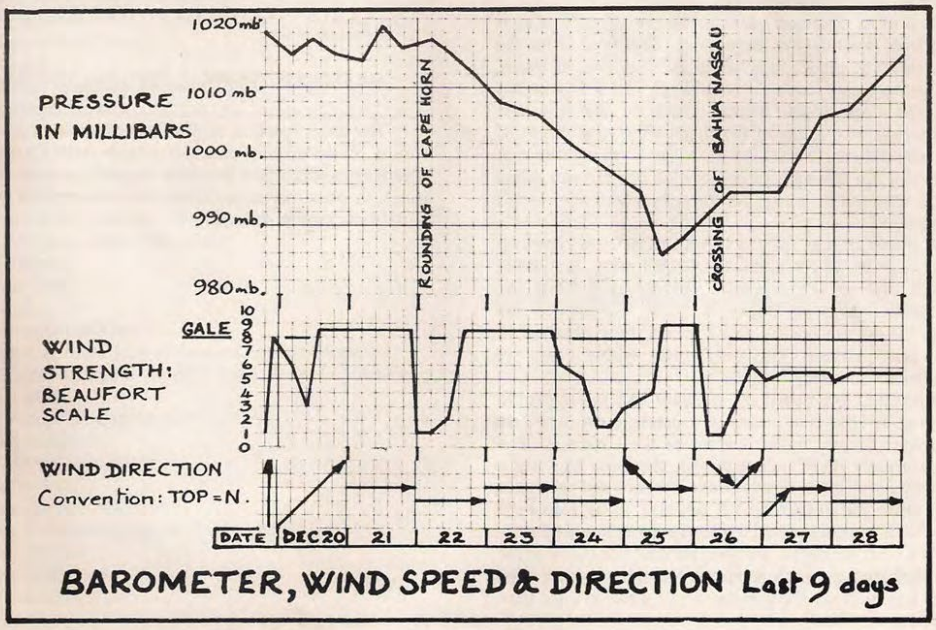
would not give a forecast, but issued synopses that were only good for four hours. Unfortunately our radios were too weak ever to pick up even this help, in spite of special broadcasts for us by the Chilean Navy.

Although all the team had considerable experience of predicting weather by keeping a careful watch on the sky, the lack of warning signs meant that our skills could not be called into play, and when patterns were detectable, the subsequent changes were very rapid indeed. In spite of this state of affairs keeping a high level of adrenalin in our blood stream, we felt that the weather was probably kinder to the canoeist than the yachtsman. The hour or two of light winds that mark the passage of ridges of high pressure between the depressions allows the canoeist to sneak forward at regular intervals, whereas the same respite from the recurring gales can be of little compensation to the yachtsman out in the ocean.

The huge depressions of the northern hemisphere have pinned me on the shore for a week or more in Scotland, whereas two days was the longest we were delayed in the south. This may not be typical, of course.



BAROMETER, WIND SPEED & DIRECTION First 9 days



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