

# Newsletter

of the  
**INTERNATIONAL  
SEA KAYAKING  
ASSOCIATION**



**An international sea canoeing association open  
to all interested in this aspect of canoeing.**

**Aims:**

**Promotion of sea canoeing • Communication • Organisation  
of events and conferences • Safety and Coaching**



**INTERNATIONAL SEA KAYAKING ASSOCIATION**

**NEWSLETTER # 7**

**FEBRUARY, 1996**

John J. Ramwell.  
5, Osprey Ave.,  
Westhoughton,  
Bolton,  
Lancashire.  
BL5 2SL

Tel/Fax 0942 842204

EDITORIAL

Let me be among the first to wish you all a good paddling year for 1996; fair winds and fair tides and some good company. This is not to deny the pleasures of solo paddling. Solo paddling has its' attractions. What ever, I hope to be hearing from you about your sea kayaking ventures so that I can include these in this newsletter.

Many, well, perhaps a few, have been asking about my book on sea kayaking. It has been written for quite some while now but I have not been too active in pursuing a publisher. Now a publisher has sought me out so progress is in hand. They want some modifications to the original text and it will also need updating. So watch this space, as they say.

Meanwhile I have taken a few chapters from the book and prepared each one so it can stand alone as an occasional paper. I am retailing these through the I.S.K.A. Shop. Apologies to those of you who have ordered my paper on navigation and are patiently waiting delivery. It is on my P.C. and requires final proofing before being printed off, binding and despatching. It won't be long!

A FINAL RENEWAL REMINDER comes with this Newsletter. Many thanks to the many faithful members who have already renewed. Do please check your bank statements to ensure you have not already renewed for 1996 before sending off your cheque.

With a few fellow paddlers and some colleagues from work I recently undertook a training week for the MOUNTAIN LEADERS CERTIFICATE in North Wales. I mention this as I was struck by the similarity between canoeing awards with the emphasis on safety, weather, equipment, navigation and leadership. I thought it would be a 'doddle', having gained some canoeing awards already. It was not, and I learnt that mountain walking can be just as demanding as sea canoeing. I go back for the assessment in a years time and meanwhile have lots of walking above 600 metres to get in, together with some night navigation and rope work. I am hoping I can find some time for paddling!! In fact I am off to British Columbia, to Vancouver Island with the British Schools Exploring Society for six weeks next summer so I'll be letting you know how this goes. In return do please let me know how your paddling year goes. As I've said many times in this Newsletter, it is only as good as the material you care to send in.

I hear through the grape-vine that Kevin Mansell is about to produce a glossy style sea kayaking magazine. I know we all wish



this venture every success and I look forward to promoting it as well as subscribing to it myself. A British, or perhaps more precisely, a European Magazine is long overdue.

Before closing this editorial I want to mention a subject important to me (editors perks!) and that is the lack of opportunity that exists for young people to take part in outdoor pursuits. Unless schools, youth groups and local authorities provide assisted places on, or organise such opportunities, then it will become, indeed has already become, the exception rather than the norm. So much for Lord Hunts' Report and recommendations that all young people under the age of 16 should have access to outdoor activity on at least one occasion. With the emphasis on academic curricula linked with league tables of performance, together with the big push on safety standards (taking a quantum leap forward since the Lyme Bay incident), it has become almost impossible for those without parental providence to take part in activities using the Great Outdoors as a medium. We will have generations growing up never knowing what it is to be part of a closely knit group facing the challenge of mountains and sea. Most of you will have experienced an evening around a camp fire at some remote camp site and the sight of the sun setting or rising over the landscape. These experiences should not be for the privileged few.

Unless we give inner city youngsters the chance to follow constructive interests as well as provide them with good role models as you and I have taken for granted, then they will search out alternative forms of excitement - and who can blame them!! What are your views?

Finally I have had some Polo Shirts and some Long Sleeved Tee Shirts printed up with the ISKA logo. They retail at £6.50 (including post and pack) and come in Large and Extra Large. They are in various colours but unless you are lucky I cannot guarantee you'll get the colour you ask for (green/red/yellow?)

And finally, finally.....

I was really taken by the following extract from **The Sea Canoeist Newsletter** as edited by Paul Caffyn in New Zealand.

"A Mexican newspaper reports that bored Royal Airforce pilots stationed on the Falkland Islands have devised what they consider a marvellous new game. Noting that the local penguins are fascinated by airplanes, the pilots search out a beach where the birds are gathered and they fly along this beach at the waters edge. Perhaps ten thousand penguins turn their heads in unison as they watch the planes go by; and then the pilots turn round and fly back along the beach to watch the birds turn their heads in the opposite direction, rather like spectators at a slow motion tennis match. The newspaper accounts how the pilots then fly out to sea and approach the penguins directly, overflying the penguin colony. Heads go up....and up and up and up and ten thousand penguins gently fall over onto their backs".

\* \* \* \* \*

## I.S.K.A. SHOP

ASKC ties @.....£6.50  
ISKA stickers @.....£ .60  
ISKA Tee shirts; large/X large/yellow/black...£6.00  
ISKA Sweat Shirts; large/X large/yellow/black..£12.00  
ISKA baseball caps (new) @.....£4.50  
ISKA ski hats (woollen)@.....£3.50  
"Over and Out", the video by Gordon Brown @....£14.99  
ASKC stickers @.....£ .25  
Polo Shirts (new- limited offer only).....£6.50  
Long sleeved Tee shirts (New, limited offer)...£6.50  
ISKA Paper No. 1 Expedition Planning @.....£4.00  
ISKA Paper No. 2 Expedition Medicine @.....£4.00  
ISKA Paper No. 3 The Sea @.....£4.00  
ISKA Paper No. 4 Navigation @.....£4.00  
ISKA Paper No. 5 History of Sea Kayaking @...£4.00  
(The above ISKA Papers are extracts from my book, "A Manual on  
Sea Kayaking")  
All prices include postage and packing, (very reasonable!)

\* \* \* \* \*  
As I have said many times before -- this newsletter is as good  
as you help me make it. Please send me contributions in the shape  
of expedition reports and reviews of equipment/kayaks. Any  
interesting stories so long as the theme remains sea kayaking.  
I am waiting to hear from you.

---

### Staithes to Whitby at Six Knots

John E Chamberlin

There were two of us in the kiosk, both in wet-suits and canoeing cagoules. It was raining outside and the two people waiting to use the phone were obviously locals, possibly mother and daughter, and getting wet.

'One red, one orange, a blue one, and one that's sort of pinky red.' Tim continued his conversation with the Coast Guard at Tyne. He'd now been on for at least five minutes. It's a good job I'd offered to use my BT Chargecard, or by now we'd have used about three quid in 10p's.

I thought of Janet waiting on the beach, also stranded there with Sandy, Tim's partner, and glanced back at him to regain the thread of the call to HMCG.

'One Coach, British Canoe Union, and one ...,' he paused questioningly, looking at me for confirmation, his pleading expression intended to prise from me my 'qualifications' to be helping him lead a party of four sea-canoeists on a sea that was being blown at 'force 3-4, possibly 5'. I shook my head, genuinely sorry to disappoint him. '... and one Advanced Sea paddler,' he added in desperation, before concluding with, 'plus two others,' then pausing again while an obviously extremely diligent duty man wrote down every detail. 'No, female,' Tim replied, the question obvious.

I looked at my watch, not wanting to know the time but to unsubtly hint to Tim we needed to be getting going. We were already an hour later than our planned start time, the beginning of the south-going flood, and we still had our 'picnic' to eat.

By the time he had finished telling him our plans to set off from Staithes, land and camp overnight just south of Whitby and continue on the Sunday morning to Scarborough, our life stories, all the hobbies of all our friends and relations and the name of the neighbour's dog, we'd been in the phone box nearly a quarter of an hour.



'What was all that about?' I asked Tim as we emerged on to the wet cobbled street and held the door for the patiently waiting women. The rain had stopped but they were quite sodden and possibly miffed at the incongruity of us emerging in apparent SCUBA-diving clobber to walk down a now rainless street.

'I think he was practicing his keyboard skills with one finger whilst he asked us every question in the Coastguard Manual!' Tim was no less displeased than me, he just didn't show it.

Tim Franklin and Sandy Huxley were hosting our weekend in Yorkshire and the four of us had agreed this two-day canoeing trip with one overnight camp from the kayaks. The weather on the Friday had been really windy and the results of that were now pounding the north side of Staithes harbour wall. Our forecast was 'Force 3-4, 5 later'. This afternoon was the 'later'. I had reservations about going out at all because of the sea state outside the harbour, but that's just the pessimist in me. The optimist had decided that beyond the breakers it would be calm. Another 'relative' term! It had certainly looked OK from the road and our first launch recce' just north of Skinningrove.

That it wasn't 'calm' should have been obvious by the occasional sheet of spray filling the air above the harbour wall as the swells came to their abrupt journey's end against the granite defences, and the way the harbour was intermittently closed out by breakers filling its entrance. But, as usual, as soon as the girls pointed these simple facts out on our return from the car park and phone, the I'm-not-going-to-chicken-out-first syndrome took over and both Tim and I confirmed the acceptability of the conditions to allay their fears. It didn't even allay mine, let alone Janet's and Sandy's.

Picnic over we dragged the boats towards the approaching tide line and began to launch. Once afloat my first problem was a jammed skeg which required an immediate return to the beach and deep skeg-box surgery with my Ibberson knife. I'm sure the gathered audience thought I was using this as a pretext to get out of going at all. I was! It's amazing how a crowd gathers like sharks when they sense blood.

Unfortunately for me but fortunately for them, with Tim holding my boat on its side I managed to free the offending pebbles and then tighten the slipping skeg-control with a hexagon key.

Relaunching, I led the way towards the harbour entrance, motioning the less-experienced girls to stay close behind me and watch the wave sets so we could time our exit, this experiential learning as much designed to delay our exit as time it!

Tim covered our rear. Always have the best paddler at the back.

After a couple of minutes I felt we had the sets sussed and chose the moment to go. So with a leaden heart and under an equally leaden sky, the others close behind, I pleased the encircling crowd by thrusting my weighty kayak out through the gap and to, in their eyes at least, our certain deaths. To us of course, uppermost in our minds was just the opposite, life, and our enjoyment of it. Sea kayaking is our sport and we were going out there to get our kicks. Two days' worth.

Once through the immediate gap the true state of the sea was apparent, and once out there we were committed. When your backside is at water level it is always different from the way it looks from the car on the clifftop. To our left were rows of messy swells surging towards the northern beaches and harbour wall, whilst to our right the waves were piling up into good reef surf on the ledges to the south side of Staithes harbour. It was tall, curling and somewhere we definitely needed to avoid. We did, but it meant going well out to sea to do it.

Staithes harbour entrance was quickly lost from view and any attempt at returning would have been very dicey with the narrowness of the gap and the size of the sea behind us. I confess now, weeks later, that instead of the usual 'good to be back' feeling, my predominant concern was already, even at that stage, where we would be able to land.



I often reflect with wonder why I go sea-kayaking at all. It seems to make no difference that I've had this life-long fear of water and I get butterflies that would dwarf an albatross before I go on the water, especially on days when I think I'm being driven by the circumstances, rather than being totally in control and making my own decisions for me alone. This was just such a day. It is always difficult to travel a hundred-plus miles and then say to someone else, I think we shouldn't go out, the wind's a point higher than I'd hoped, but I reconcile that against the knowledge and experience of the person I'm going with. Tim is not only Secretary of the BCJ Sea Touring Committee, but comes highly recommended by Martin Meling, and that's as good as a Best In Show at Crufts.

Tim is very well qualified in the sport and probably does not share my irrational fears, so would have therefore been making different personal decisions to mine on the prevailing conditions as we toured the coast and prepared to go on the water. His positiveness and enjoyment were immediately evident as we turned the boats down the coast, my guess about half a mile offshore, and settled in to the south-easterly paddle that would take us to our camp for the night. Or so we thought. This open display of pleasure at being out was shared by Sandy who was trying a P&H Sirius for the first time on the sea. It was a good sea on which to try it. Black as far as the eye could see, approaching ridges of water, like ranks of coalmen with shoulders hunched, a Northeast England version of the Terracotta Army.

Janet, yet again enjoying the confidence-giving stability of a borrowed P&H Outlander, was lost in her own private thoughts but nonetheless relieved, the pre-paddle nerves rapidly dissipated by getting out there and doing it. She likes doing things.

For my part I was observing the swells approaching from the north, our rear left-hand-side, and equally how they were ending up in the continuous wrecker's yard to our right that was the cliff base from Staithes down to Sandsend. The sea was not technically challenging as the swells, large though some of them loomed, were not breaking outside. Much of the time looking from the shore had been to seek out the tell-tale white-caps. None. Good. What it did require though was concentration. The pleasure was in the canoeing, the company and the scenery of the day, not in an unwanted capsize after some momentary lapse and a tap on the left shoulder by an evil silver-back of a rogue wave.

The truth is, it is always 'good to be back' on the sea. Sometimes it's just 'gooder' than others. I can't explain the feeling, but it ends up being all-pervading. I'm sure that fundamentally it's a scale issue; the sheer incalculable mass of the medium on which we travel, contrasting so dramatically with the inconsequential and, by comparison, infinitesimally small size and power of our craft. We have absolutely zero control over the elements of wind and sea. The only control we have is over our paddles, and through them the kayak.

I think it is this relentlessness of purposeful physical activity that provides the mental stability, the patience and perspective, on any sea canoeing trip. There is no ten-second dash to the bank. The 'bank' in this case was presently the last place one would want to 'dash' to.

Tim and Sandy were soon out in front, Janet about fifty yards behind them and to my right. I was in what I perceive to be my usual spot where I can see all other paddlers. Psychologically shepherding perhaps, I was further out from the land and surveying the complete scene. As an ignorant Midlander my perception of a 'north-south' coastline on this part of England's east coast was quite wrong and in fact this stretch was far more east-west oriented, which was why the swells from the north-westerly winds were stomping home at a fairly tight angle to the shore. And they were quite impressive, which was why it took me some while to settle down. They were not large by any stretch, but had a colour of face and determination of movement that denied their pure footage, my guess being three to five but mainly towards the latter. Pittling little things I already hear you say. No problem. It is dead easy to exaggerate wave sizes but I don't see the point, they were just one component in the gamut of conditions and circumstances on the day.



My scant knowledge of that coastline included only Staithes, Runswick Bay, Sandsend, Whitby itself and the well post-carded Robin Hood's Bay, and by half an hour into the trip Runswick was in my sights. By this time Janet and I had drawn closer and passed Tim and Sandy, who had stopped for a brief rest and; well like Janet and me, they were in love.

As the Bay opened out to reveal the unique streetless hamlet in the distance, I recalled for Janet the only other time I had been there. In fact that brief holiday had been the only other time I had canoed up here at all. On that occasion Robin Rhodes and I had done the return trip from Sandsend to Staithes, catching most of the British Grand Prix over a pint and sandwiches in the Cod And Lobster on the quay at Staithes, standing in the bar in our wet-suits. The sea on that day had been flat and the sun brilliant.

Passing Runswick, what caught my eye particularly was the speed of the tide as it pulled the lobster-pot markers against their basket anchors. It seemed to be really belting along and quite astounded me in my ignorance of the area. Possibly only in fact 1-2 knots, it was definitely increasing our speed over the ground.

Assisting us also was the wind on our backs, plus the regular nudging onwards from the rise and fall of the swells, slate grey, terrace-roof uniformity, impressive both sides of us but gentle as they almost imperceptibly passed underneath.

After about an hour we all drew together for a raft, somewhere off Goldsborough I guess, certainly short of Sandsend. Apart from the drink and bite to eat, the break required a definite decision on landing, as by this time it was apparent to us all that a beach landing was virtually out of the question unless we accepted getting seriously wet - and someone keeps telling me sea-kayaking is a 'dry sport'!

Even at this distance out we could hear the surf and it was quite clear to me that at least two of us would end up swimming if we tried that way in.

With Whitby yet to be passed, that presented one option, but going for it meant not camping direct from the boats, as the tents would look a bit out of place on the prom' and the tarmac is a bit hard to get the pegs in. In its favour was the selection of chippies. The brutal alternative was to carry on all the way to Scarborough that night, a paddle of at least a further two hours, but one glance over our shoulders and out to sea ruled that one out.

The leaden grey had darkened into what the brochure on the new Rover MGF calls, 'Charcoal'. The sheets of squally rain could be seen not too far away, seaward side. Around us and in front the wind had picked up such that the sea surface was now quite ruffled, occasionally breaking. Previously it had been relatively smooth, in fact that was what had allowed the enjoyment, the chunkiness of the powerful swells passing beneath us but without serious risk, rather like a whale allowing you to swim on its back. The solitude outweighing the vulnerability. Now it was different, something had annoyed it and that increased the threat to continuous stability. The gamut of conditions was changing above and beneath us. The two-day canoe-camping trip was now in jeopardy, but when you're up to your armpits in alligators it's sometimes difficult to remember you were really there to clean out the swamp.

The option almost selected itself. Whitby. The harbour was not in view yet as we were still some 2-3 miles away, but it did present a technical challenge. We had to hit it first, and then get through. I knew the entrance itself was very tight and, curving leftwards as it narrowed, it presented itself almost due northwards. There was no doubt in either Tim's or my mind that the swells would be squeezed up in the neck and, if not actually breaking, would give a hairy end to the trip. As Sandsend came in to view my guess is we were about a mile out. Totally invisible to anyone on the shore we began the final approach, initially a gentle easing to the right, picking up early transits at the same time to confirm the effects of the now fully flooding tide. Had the sea been flat it could not have been simpler, a steady walk to the right across a moving conveyor. But it wasn't. The increasingly confused sea surface, superimposed on the marching ranks of swells pushing us shorewards, and the persistent roar from their distant percussive demise continuously reminded us of the undesirable alternative.



Tim and Sandy were in front, Janet next and me at the rear, all having to concentrate more now on keeping the boats upright as well as on course. But it was still enjoyable, thrills now adding to the pleasure of just being there. Sandy's permanently happy and smiling face showing signs of thoughtfulness. Janet's deep in it. Tim still jollyng us along, still thoroughly enjoying it, especially as Sandy was with him. And me? Well I was searching the distant landmarks for one that would indicate our target.

The first clues came when Tim spotted the boats emerging and disappearing at the same spot. It was either a submariners' conference at break time or the harbour entrance. I had picked out the red marker on the south side, but not yet the green partner on the north wall, mainly because at this distance, my guess no more than a mile away now, it was lost in the dull grey of its concrete surroundings.

We eased further in, enjoying the boost from the tide, but ever wary of the increasingly tetchy chop. It was an irritable sea, not yet violent, but something was making it angry. The wind was definitely up. So was mine.

I like re-entries. If you've not seen 'Apollo 13' yet then do. I'm old enough to remember it for real. "Two degrees off and they either burn up on re-entry or bounce off into space, lost forever!" Dean Kranz to Deke Slayton, I think, at Houston Control. Gripping stuff. This was too. Too far right, shorewards, and at best we'd have an ignominious dumping on the beach north of the harbour, at worst a serious thumping into the wall. Too far left and the tide would whisk us past, the pounding in the surf at the base of the cliffs beyond was unthinkable. Adrenalin? I could taste it.

Closer in I picked up the green orb to the right of the red one, confirming the northward skew of the entrance. At the same time the need for care and accuracy became more clear. It was narrow, and the north wall was radiused at its end, dissipating the pounding waves but without the normally inherent clapotic confusion. We needed to pass left of that, but only so far as to enable a mid-point entrance. Too far and we would either miss or be surfed against the pilings which were the southern wall and allowed the incoming swells to punch through into the open area beyond. The angle of approach we had adopted so far was OK, and we had fallen line-astern with Tim leading, ensuring it was maintained.

A testing time. The focus now keenly forward, that's where the fun was, but the risks clearly aft, each one of us concentrating on both as best we could. This was neither the time nor place to practice a deep-sea rescue. I prayed for no-one to capsize. Coming out through the gap at Staithes was the easy bit compared to this.

The jaws of the harbour opened before us, each paddle stroke urging the boats on to go clean down the throat.

Tim went through first. Fortunately no other boats had chosen the same few moments to use this narrow entrance. He surfed in well, to the amazement of the gathered tourists and fishermen who then saw the rest of us. Some wondering where we'd come from whilst others just chuntered that we might snag their lines.

Sandy and Janet went next, looking every bit the professionals but hearts probably thumping visibly through their chest walls like a scene from a Tom & Jerry cartoon, eyes in the back of their heads on the surging ridges of water peaking up behind them.

I followed, confident now that there were no problems, so long as I didn't cock it up. As Janet said later, her worst fear was the embarrassment of capsizing in front of such a large audience. She didn't. It proves someone listens.

The honest relief at being back safely was soon replaced by the anticlimax at being out of the action. Another two hundred yards and we were clear of the larger traffic, drifting towards the beach. 9 miles in 1 1/2 hours. Not bad at any pace. The adrenalin transferred from the muscles to the brain, laughing and joking in the reflection of the trip. It had been a good one. Tim's beaming smile said it all.



# WHICH GPS?

Are 'cheap' GPS sets as good as their more expensive brothers? To find out we test 10 GPS receivers — each of which costs less than £2000.

Although GPS receiver prices are plummeting, such sets are still expensive when you compare them with other position fixing electronics. So, for reasons of economy, we decided to restrict the sets in this guide to those with price tags of under £2000 ex VAT. Even so, surprisingly, perhaps, this still covers most of the models currently available.

GPS is more comprehensive. As its name implies, this is a Global Positioning System providing a position *anywhere* in the world. That means not only in South America, mid Atlantic or Pacific but also in not so far away places like South Brittany, where the French Decca system is now switched off. The very nature of Decca, and for that matter Loran too, makes it physically impossible for these systems to give worldwide coverage. During our trials, for example, we had the handheld Magellan Nav 1000 Plus while chartering in Yugoslavia — try that with a Decca!

## How does it work?

In principle, GPS is surprisingly simple. If you know where two points are and you know your distance from each point, you can easily calculate your position. It's basic trigonometry. With GPS, the 'known' points are satellites. Their distances away are measured by the receiver.

Thanks to the US Department of Defense (DoD), there will be 24 GPS satellites by 1993 — 21 on 'active-service' and three spare — in orbit at around 11,000 miles above the Earth. Each makes a full orbit every twelve hours or twice a day. When the full complement of satellites is in position, GPS will provide 24 hour coverage worldwide. But there are now sufficient satellites to give about 23½ hours coverage per day. At any one time, a GPS receiver can see up to eight satellites as they rise and set above the horizon. The receiver holds an 'almanac' in its memory and chooses the satellites in the best positions to give the most accurate fix.

For a two-dimensional fix, the receiver needs to 'see' only three satellites while a three-dimensional fix requires four. Since we know our altitude — sea level — a sea-going navigator only needs a two-dimensional fix, though each set we tested could also find a three-dimensional position — it simply took a little longer to find its initial position.

As the satellites orbit the earth, they broadcast a 'pseudo-random' signal at 1575.42MHz — a microwave frequency producing a wavelength of 19cm (7 1/2in) or, looked at another way, a frequency ten times that of your VHF radio. Included in the signal are such details as the satellite's position, updated by the US DoD to account for the gravitational pulls of the sun and moon, and the exact time. The receiver measures the distance to each satellite by timing how long it takes for the radio signal to reach it. As we all remember from our schooldays, radio waves travel at the speed of light which is 186,000 miles per second, so if you know how long it takes to travel from A to B at a uniform speed, calculating the distance is easy.

The system therefore relies on extremely accurate timing. Each satellite is fitted with an atomic clock — one which relates its tim-

ing to the oscillations of a particular atom, not one that runs on atomic power — while the receiver is fitted with a quartz timer similar, but more accurate, to those used in a watch. So far so good.

But to be able to measure the time, the receiver needs to know when the satellite started to broadcast its signal. This is where that pseudo-random signal comes in. In some respects it's a contradiction in terms because it's not completely random. It only appears to be. In actual fact, it's an ever changing signal which the receiver can also produce. Both signals are generated at the same time. By comparing the waveform of the received signal with that generated by the receiver, the GPS can work out how long ago the satellite sent its signal. Simple really — except it all happens in micro-seconds.

---

**We tested them afloat, we tested them ashore and found some surprising results. Prices range from just over £1000 to just under £2000, yet the more you pay doesn't necessarily mean a better set.**

---

To be able to work, the receiver has to start generating its signal at exactly the same time as the satellite. So while two or three satellites would in theory be sufficient to give a fix, in practice a third satellite for a 2D fix or a fourth satellite for a 3D fix is needed to overcome what's known as 'clock errors'. If the receiver's internal clock was perfect and synchronous with the satellite's clock, the three calculated ranges in a 2D fix would correlate and all three range lines would cross at the same point — our position. But in reality they don't — and we end up with what looks like a 'cocked hat'. The receiver assumes its internal clock is wrong and by adding and subtracting equal amounts to the range to each satellite, the error can be 'ironed out' and the correct position found.

That simple piece of maths is very important since it allows the receiver to use low-cost quartz clocks rather than very expensive atomic clocks and brings GPS receivers within the budget of many boat owners.

## How accurate is accurate?

The signal provided for civilian use is called the C/A code (coarse acquisition). For military purposes a second signal called the P-code, broadcast on 1227.6MHz, is also transmitted by the satellite. It's more difficult for the receiver to acquire and takes longer to process but improves accuracy by allowing the receivers to work out by how much the signal is slowed as it comes through the ionosphere.

In a civilian set, using only C/A code, an average factor is included for how much the signal is slowed. In practice, the signal can pass through the ionosphere at different speeds depending on the amount of water vapour, pollution etc that gets in its way and its estimated this produces an error of around 5m to 8m.

To prevent enemy military using the highly accurate P-code, it's restricted to DoD authorised users only.

Unfortunately, that's not the only deliberate degradation built into the system since it's the US DoD policy to limit the accuracy of GPS to civilians. Selective Availability (S/A) is a device which can be switched on or off by the

DoD which degrades the signal by slightly altering the output of the satellites' atomic clocks. The effect is to degrade accuracy to a nominal 100m. S/A was not on during our trials. Only second generation satellites are fitted with S/A switching and while writing this article we understand some satellites' S/A have been turned on which means GPS derived data will not be as accurate as it could be. It seems to us to be a criminal misuse of the most accurate position finding system devised by man to deliberately degrade it for what appears to be political rather than practical reasons.

Other errors can, of course, creep in such as inherent but extremely small inaccuracies in the atomic clock, the receiver's software rounding up mathematical calculations or small background electrical interference causing incorrect correlation between the satellites' and the receiver's pseudo-random signal. But all of these are relatively small compared to S/A and the averaging for ionospheric slowing.

Nevertheless, there are small errors and the uncertainty of your position can be exacerbated further by the relative positions of the satellites when taking a fix.

Most of the handbooks call it the 'geometric dilution of precision (GDOP) or sometimes the 'horizontal dilution of precision (HDOP). GDOP is best described by drawings but basically it's like taking a fix using bearings which have only a narrow angle between them. Similarly, if the satellites are bunched together then the 'diamond' of uncertainty is larger than if they are spread out. All the sets in our test gave some indication of the accuracy of the fix due to the position of the satellites. Most sets convert the uncertainty of position into a rating while Navstar go a step further and provide a figure in metres.

## Types of GPS receiver

Receivers use one of three methods for listening to the satellites. Some use a single channel and switch between each satellite while others use several channels and continuously monitor each satellite. Makers specify which method their receiver uses with one of three names.

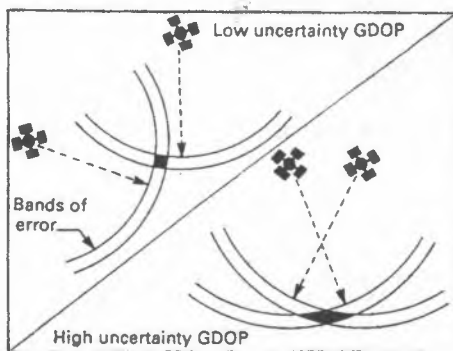
**Sequential:** As the name suggests, the receiver has a single channel and listens to each satellite in sequence, taking the full code before switching to the next satellite. This is the older technique of GPS and is said to take longer to make a fix than newer methods.

**Multiplexing:** Sometimes known as fast sequencing, uses one channel but switches between satellites at a fast rate synchronous with the pseudo-random code which, some say, gives the appearance of continuous tracking.

**Continuous tracking (parallel):** The receiver has several channels in parallel each dedicated to listen to a satellite in view.

While continuous tracking will by its very nature give more accurate positions especially at very high speeds as in aeroplanes, when used at the comparatively slow speeds of boating, even fast motorboating, there's no noticeable difference in accuracy between any of the three methods.

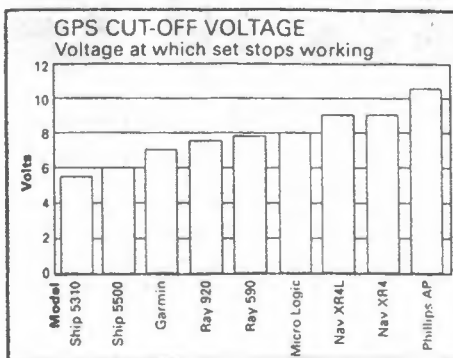




### What we tested

Our trials were split into two parts, the first section with the units installed in a car, the second on board a boat. We covered some 1500 miles on the road and then installed the sets on board to set off for Brittany and the Channel Islands. The car tests were devised to try out the capabilities of GPS working at speeds up to 60 knots. We observed how they coped with sudden changes of direction and speed plus some high speed U-turns devised to confuse even the best electronics. On board ship we used them in the intended manner, using waypoint sailing along the UK and North Brittany coasts plus some trials around the Channel Islands. When we could use the largest scale Admiralty charts available we tied the boat to an easily identifiable position, the harbour wall for example, and accurately plotted the results. Table 1 shows the average error we measured at the four ports. The other graphs show power consumption, critical for some yachtsmen making long passages and voltage cut-off. This is the figure at which the sets stop working, again this is important for sailing boats which can suffer from diminishing battery voltage during a trip.

After spending many hours with our sets, we've been completely converted to the sys-



tem. GPS navigation makes Loran-C and Decca look 'stone age' by comparison.

On the minus side, there's more to learn with a GPS than a Loran or Decca. Not that the system is more complicated, it simply has more facilities than the other systems. Adding to the problems of the extra learning curve is the quality of the owners' handbooks. With only a couple of exceptions they are terrible — written by technicians for technicians with some sections of complete gobbledegook.

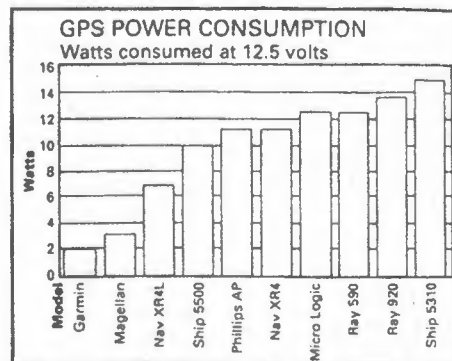
### How accurate are they?

In a phrase, very accurate so long as you're working to the same datum. For example, the Admiralty charts of the Solent area are based on the Ordnance Survey Datum while the Channel Islands and France use the European Datum. So the first requirement is to set the correct datum in your GPS set depending on which charts you are using; the most universal setting is WGS84. The choice of datums in most of the units is comprehensive; some have over 50 to choose from. Next you may notice another message on the chart:-

*"Positions derived from satellite navigation systems referring to WGS84 Datum should be moved 0.03 minutes Southward and 0.09 minutes Eastward to agree with this chart"*

These are the figures printed on the Solent charts and the correction varies depending on where you are. This means you have to make a correction either by adding or subtracting the difference every time you take a position reading or, more easily, enter a correction factor into the GPS set.

But does it really matter? On the Island of



Guernsey, in St Peter Port Harbour, the GPS positions were about 150 metres adrift without the correction applied, in Southampton the error is about 110 metres. In each case when the correction was applied most of the sets gave positions accurate to less than 25 metres and in some cases less than 12 metres.

Except for the Garmin (the Pro-Nav that was), the Navstar XR4L and the Magellan, all the sets display Lat/Long to three places of decimal (later Garmins will be changed to 3 decimal places). Repeatability — where we took a reading, moved away and returned to the recorded position — is good; we could reposition ourselves to within 5 metres, sometimes less for the larger machines. Of course, sets which show positions to two decimal places could only return us to within 0.01 miles or 18.5 metres. In effect, this amounts to the same berth in a marina. That's what we mean by *very accurate*. When trying to

Set	Type	Number of Channels	Maximum no of sats tracking	Sat Update Rate	Closeness of Initial Position	Maximum number of Waypoints	Maximum number of Routes	Max No of waypoints in route
Phillips AP Navigator	parallel	6	6	1 per sec	Auto	200	20	20
Navstar XR4	multiplex	2	8	1 per sec	Auto <sup>3</sup>	199 + 10	9	25
Navstar XR4L	multiplex	1	5	1 per sec	Auto <sup>3</sup>	50 + 10	—	—
Micrologic Explorer GPS	multiplex	1	5	1 per sec	Auto	100	—	—
Magellan Nav 1000+	sequential	1	4	1 per 3 sec	300nm	100	1	11
Raystar 590	multiplex	1	5	1 per sec	60nm	500	10	101
Raystar 920	multiplex	1	5	1 per sec	100nm	100 + 10	1 <sup>5</sup>	100
Shipmate RS 5500	multiplex	1	5	1 per 2 sec	40nm	200	—	—
Shipmate RS 5300C	multiplex	1	5	1 per 2 sec	80nm	200	10	99
Garmin GPS 100	multiplex <sup>1</sup>	1	8	1 per sec	600nm <sup>2</sup>	250	10	9

#### Notes

<sup>1</sup> = The Garmin has its own patented position fixing software called MultiTrack

<sup>2</sup> = Although it can find itself if given a position within 600nm, it's faster if given a position within 60nm

<sup>3</sup> = Although able to find itself anywhere in the World, it's faster if given a position within 100nm

<sup>4</sup> = Also able to output computer 24 x 80 or computer 7 x 40 display and NMEA RMC.

<sup>5</sup> = Any number of routes can be programmed so long as the total waypoints used does not exceed 100 and the waypoints are entered in numerical order. For example you may have 1

route of up to 100 waypoints or 50 routes of 2 waypoints.

#### KEY

##### Display size

GDST = graphic double supertwist backlit LCD (numbers in brackets describe the number of dots or pixels used across the screen). Other sets have less sophisticated displays and are specified by number of lines and the number of characters in each line.

##### Features

a = anchor alarm — if boat moves off station by a

set amount, alarm will sound.

c = alarm clock — beeps at a preset time or times.

d = compass deviation table can be entered and added to provide corrected magnetic courses etc.

D = position can also be shown in Decca co-ordinates.

e = exclusion zone alarm — an area which would be dangerous to enter can be programmed into the receiver.

f = fuel consumption can be shown if a suitable sensor is fitted.

g = choice of rhumb line or great circle navigation (if a g is not indicated, set only navigates with rhumb line routes).



measure this accuracy we soon discovered we had to start from the aerial mounting position before deciding where we were. We received some strange looks when people observed us using a long steel surveyor's tape to measure the distance between each aerial and the harbour wall. If your GPS aerial is mounted on the pushpit and your boat is 12 metres long, the position you plot on the chart is for the stern of the boat, the bow is off-position.

### What else do you get?

The number of additional facilities some of the GPS sets have over earlier electronic navigation systems are too numerous to mention. However, some of them are worthy

### Are they easy to install?

Installing the sets is straightforward and well within the capabilities of the average boat owner. But check the contents of your box before you start. Each manufacturer includes a power lead but some have no aerial mounting bracket or lead. With the additional cost of a mounting bracket and a length of the special 'low-loss' cable, the purchase price could rise by another £100 or so. Of all the sets supplied for our test, Navstar's XR4 and XR4L installation kits were best. Not only do they supply an aerial lead and an universal mounting bracket but also a spanner for the nuts. AP Phillips also supply the lead and a small screwdriver with an aerial which includes a mounting that would suit most applications. Since our test, Shipmate have

should not be mounted in bright sunlight positions. Ideally, the helmsman should be able to see the set (or a repeater) at all times to get the best from the system.

### Getting started

Each of the navigators requires some basic information to get started from brand-new. The basics are GMT or UTC (universal time coordinated), local time difference, date, satnav system chart datum and aerial height above sea level. If starting your journey on inland waterways, your height above sea level would need to be taken into account and re-entered when you reached open sea.

Many sets require an initial position, sometimes as little as within 60 miles but for most people this should not prove a problem.

Display size	No of datums	Main features	Interfaces	No of data ports	Supplier	Rec' Price ex VAT	Target Price ex VAT
GDST	37	a,c,d,e,f,l,m,o,p,s,S,2t,x,y	NMEA, pulse, tape	9	Ampro Distribution	£1950	£1842
5 x 10 char + flags	52	a,d,c,e,o,s,r,w,y	NMEA, Navstar	3	Navstar	£1995	£1651
3 x 7 char + flags	52	M,x	NMEA	1	Navstar	£1195	£1048
2 x 16 char	5	a,l,M,o,w,x,y	NMEA 0180, 0183'	2	Curtis Marine	£1475	—
4 x 16 char	12	h,w	NMEA 0183	1	Ampro Distribution	£1495	£1182
GDST (28 x 160dots)	7	a,e,m,o,p,w,x	NMEA, 0180, 0183, JRC	2	Raytheon	£1550	£1374
5 x 7char	6	a,e,o,s,w,x	NMEA, JRC, RS232	4	Raytheon	£1994	—
2 x 16 char	50	a,g,m,M,o,x,w	NMEA	1	Shipmate	£1495	£1263
4 x 16 char	50	a,D,g,l,M,s,w	NMEA	1	Shipmate	£1900	—
4 x 22 char	16	a,c,h,m,o,r,w,x	NMEA, RS232, Garmin	1	Euro Marine	£1300	£1174

h = handheld set with internal batteries but available with optional mounting kit.

l = totalling log.

m = man overboard — an easily identified key which when pressed saves the position at that time and provides bearing and distance to that point.

M = multiple control heads — the receiver can be fitted with two or more control heads

o = off-track or cross-track alarm — an alarm which can be set to give a lane along the track.

p = plotter.

r = reverse route — an option where the out-going route can be reversed and used to return to your

starting point.

s = set and drift can be supplied if compass and electronic log connected.

S = security — a theft deterrent where a 'password' is needed each time the set is switched on before it will operate.

t = trip log.

w = waypoint alarm — sounds when a certain distance from waypoint, some receivers allow you to set the distance.

x = cross track error indicator (sometimes known as 'course deviation indicator or bargraph).

y = yacht racing timer able to count-down to the start of a race.

### Interfaces

NMEA = set can receive or output data to NMEA 0180, 0182 and 0183 standard. If not able to give all three standards, the appropriate numbers follow the letters NMEA.

Navstar = Navstar's in-house data language.

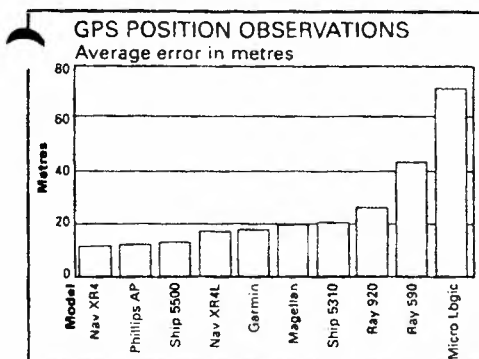
JRC = Raytheon's in-house data language.

RS232 = common computer data language.

### Prices

Rec' Price ex VAT = The recommended retail price suggested by the supplier/maker.

Target Price ex VAT = The lowest price of the set from discount mail order houses as advertised in the July and August issues of PBO.



of a mention: waypoint memories that can accept Lat/long and text so that you can name the waypoints, 'Poole fairway buoy or Cherbourg harbour entrance' for example; totalling GPS logs which sometimes comprise a main non-resettable log plus one or two trip logs and record distance travelled over the ground; graphic displays of cross track error showing little boats wandering off-course either side of a line; multiple line displays to show five or six different pieces of information simultaneously; WCV (waypoint-closing-velocity) or VTW (velocity-to-waypoint) is very useful when tacking towards a destination. TTG (time-to-go) to the next waypoint and the end of the route. This could be important if your arrival time has to coincide with a tidal situation or lock opening time.

updated their installation kit to include all the necessary bits and pieces.

To start the installation you need a low voltage DC power supply, preferably separately fused and run direct from the battery. Most of the sets will work on anything from 11 to 30 volts. If possible, do not connect to the main engine starting battery. The voltage drop on start-up will cause some sets to restart. The aerial has to be sited to give an unrestricted view of the sky which in theory calls for a masthead mount for sailing boats. In practice, however, it's best to mount the aerial lower down since the movement at the top of the mast can confuse some GPS sets. For a motorboat, a small stump mast may be needed to take it above the radar scanner beam. Radars transmit microwaves which may damage the receiver.

Although not advised by the makers, we tried fitting some aerials next to the VHF whip to see if transmitting at 25W would damage the satellites' signals. No difference could be detected. Evidently the VHF frequencies are too low to affect the sets.

Where you position the control head depends on the set. While most need weather protection, the Navstar XR4L has a waterproof display/control module, the all-in-one Magellan is waterproof and floats — an attribute for a portable set — and the Garmin is showerproof and can be fitted in the cockpit or flybridge. Some have dim displays so these

### What can they 'talk' to?

The subject of interfacing, that is connecting the navigator to a variety of external equipment, is beyond our timescale for this the test. Except for the hand held Magellan all the models can receive or output the NMEA data information in a variety of formats to suit almost any application. At last, there seems to be a degree of compatibility across the board. We are continuing to work in this area but connecting each set to autopilots, plotters and other instruments both on motorboats and sailing boats is a time consuming operation.



Dear John Ramwell:

Stephen J. Wilson  
90 Mason Road  
Brookline, New Hampshire 03033  
(603) 673-4695

Looking through the November issue of the ISKA Newsletter, I noticed with pleasure the article, "Duncan Winning in Company with John Heath". I have been a longtime student and admirer of John Heath and met the gentlemen in June of 1994 during the first Invitational Military Kayak Paddle (IMKP) along the coast of Maine. As the IMKP Paddle Master, I invited both John Heath and John Dowd as guest speakers for the kayak symposium before the paddle. Little did I know what I was getting into. Before I realized it, I had my wife driving up to Toronto with boat trailer in tow (the first time she had ever done this) to pick-up three Greenlanders and their kayaks. I held my breath because no one was quite sure how they would fair at the border with sealskin tuilik (jackets). Again, I relied on my wife, BeBe, to somehow handle this. John had managed to gain free passage for the Greenlanders to Toronto - we only had to get them into the States. All of this was unofficial. Not only that, he managed to get them to New York City and paddle around the Statue of Liberty. To make matters interesting during all of this running about, New England was experiencing one of the worst heat waves in living memory. I found myself having to stop and catch my breath trying to keep up with both these guys. In any case, I'm glad to see that John Heath made it to IMKP 1995 and was able to conduct research on several kayaks.

Both of these gentlemen represent something very special to North American sea kayaking or, indeed, to sea kayaking in general. I love to see them periodically poking their heads in the sport and keeping us honest.

The original intent of this letter, besides renewing my subscription, was to ask if you be interested in an article about the safety crews that supported IMKP 1994 - an unsupported, ten day, 210 nautical mile race along the coast of Maine. Although IMKP 1994 was a military paddle, many of the "lessons learned", specifically those dealing with small safety crews would, I suspect, have application in similar civilian paddle races.

Also, how do I get a copy of your book, *A Manual on Sea Kayaking*? Is it carried in the States?

Keep up the good work with the ISKA Newsletter.

---

" FOR SALE. Nordkapp HM sea kayak. Round front and oval rear hatches. Backtrap. Orange deck and hull, black trim. New in December 1994. Genuinely excellent condition. Photos on request. \$500 o.n.o. Tel. 01970 615386."



## Are There Any Sea Kayaks, Which Go Faster?

Indeed there are sea kayaks, you can paddle with more speed than other sea kayaks. When you read the article of Frank R. Goodman: "Making Sense of Kayaks" (see: ISKA-Newsletter 5/95) you can find some design features of hull, which have an effect on the speed of a sea kayak: long waterline length, semi-circular cross-section, unrockered hull, narrow beam, fine bows, low displacement and vertical stem.

My question is: Are the usual differences in design features important for the normal cruising sea kayaker, who don't like to hurry over the sea to be at the front end of a paddling group? Or: A sea kayaker who prefers to talk with his friends or who wishes to enjoy the natural environment, will not have a cruising speed which exceeds 4 knots. Has such a sea kayaker look for the above mentioned design features when he wants to buy one of the 111 sea kayaks listed in "The ISKA-Buyers' Directory '95" (see: 3/95)? My answer is: "NO!" Besides most of the manufacturers and local dealers are not able or willing to present exact datas about the design features of their sea kayaks. Further on the hull characteristics of the sea kayaks for example made by Valley, P&H and North-Shore are so much similar that the difference between the design features will have no important effect on the speed of a sea kayak up to 4 knots. When you can notice notwithstanding that one friend is faster in his sea kayak than you, the reasons are others: maybe he paddles with a little bit more power or he has less load in his kayak than you have.

Are there any facts which proof that this opinion is right? In the US-American journal "Sea Kayaker" you can find some clues, which confirm to my experience. Look at the table. It lists with one exception ("Sirius hf" made by P&H) some datas of 15 North-American sea kayaks published in "Sea Kayaker" since spring 1994. When you look at the table you will see, that up to a speed of 4 knots the difference of the "resistance" to maintain a given speed is very small. For example: When you paddle 4 knots the maximal difference of resistance between all 16 kayaks is only 0.27 kg, but when you paddle 6 knots this difference increases up to 3.09 kg. Further on when you ignore the datas of the short boats (410-460cm) and the only folding boat, the maximal difference of resistance will even decrease at 4 knots from 0.27 kg to 0.18 kg and at 3 knots even from 0.18 kg to 0.09 kg.

**Tab.: Waterresistance and Speed of Sea Kayaks\***

Model	Dimensions (LxB)	Displacement (Total)***	Resistance**					
			(at 2 / 3 / 4 / 4.5 / 5 / 6 knots)					
Tchaika* (USA)	424x55cm	278 litres	0.36/0.82/1.68/2.94/4.94/8.34kg					
Arctic Hawk (USA)	548x58cm	312 litres	0.41/0.86/1.63/2.13/3.08/5.53kg					
Seeker (USA)	486x59cm	329 litres	0.45/0.91/1.72/2.31/3.49/6.25kg					
Sirius hf (GB)	520x53cm	337 litres	0.41/0.88/1.63/2.31/3.67/6.57kg					
Coaster* (USA)	410x59cm	349 litres	0.41/0.88/1.68/2.85/4.67/7.93kg					
Sealution (USA)	502x58cm	361 litres	0.41/0.91/1.68/2.54/4.03/7.34kg					
Queen Charlotte (USA)	518x61cm	370 litres	0.45/0.91/1.72/2.36/3.44/5.98kg					
Gypsy* (USA)	460x61cm	372 litres	0.45/0.91/1.90/2.63/3.94/6.89kg					
Islander ME (USA)	517x54cm	399 litres	0.45/0.91/1.68/2.27/3.40/6.16kg					
Sea Lion (USA)	518x59cm	405 litres	0.45/0.91/1.81/2.45/3.62/6.48kg					
Quest (CDN)	575x57cm	420 litres	0.41/0.91/1.68/2.17/3.13/5.75kg					
Greenland Solo** (USA)	542x60cm	423 litres	0.50/1.00/1.90/2.45/3.22/5.39kg					
Cadence LP (USA)	514x60cm	437 litres	0.45/0.95/1.68/2.27/3.31/6.12kg					
Expedition (CDN)	571x57cm	448 litres	0.45/0.91/1.63/2.13/2.94/5.25kg					
Discovery (USA)	546x56cm	452 litres	0.45/0.91/1.63/2.17/3.22/5.62kg					
Enetai Standard (USA)	518x58cm	482 litres	0.45/0.95/1.68/2.27/3.22/6.07kg					
maximal difference of resistance (in kg):			0.14/0.18/0.27/0.71/2.00/3.09					
- " - (without the short boats and the folding boat):			0.04/0.09/0.18/0.41/1.09/2.09					

\* Published in "Sea Kayaker" (spring 1994 - Aug. 1995) \* short boat \*\* folding boat

\*\* Calculated by Matt Broze using Taylor Standard Series; with 113,25 kg pay-load

\*\*\* the volume of the shape (external).



What is the reason why the amount of resistance is so similar up to 4 knots? You should know, that the water resistance is a function of "skin friction" and "residual drag":

- \* The skin friction depends on the wetted surface of a kayak: for example the shorter a sea kayak or the more the bottom of a sea kayak resembles a semi-circular cross section the lower can be the skin friction.
- \* In contrast to this the residual drag mainly depends on the wave-making resistance caused by the shape of a kayak: for example the longer a sea kayak the smaller can be the residual drag.

When you paddle with low speed (up to approx. 5 knots) the skin friction is larger than the residual drag. But at higher speed the wave-making resistance will dominate the amount of resistance. And what happens up to a speed of 4 knots? The little advantage of a better frictional resistance will be compensated by a worse residual drag with the result that the total resistance is nearly the same.

Therefore you can neglect the differences in design features of hull, which have an effect on the speed, when you don't want to paddle faster than 4 knots. Provided that you feel comfortable paddling a sea kayak, it's enough to buy one with a normal length (485-540), a normal beam (53-60cm) and a suitable volume (see: 4/95). But if you like to paddle with more speed you have to look for the design features of hull, e.g. length, width, round bottom, unrockered hull. However you must be aware that you will get a sea kayak which will be tippier. If you are not an advanced sea kayaker, you will have problems when the sea conditions become choppy. But when you feel unsafe on the sea, you will not be able to make speed.

Of course the data determined by "Sea Kayaker" are not out of any criticism. The main problem is, that (1) the calculation bases on calm sea conditions and (2) the data are pure theoretical facts determined with the help of a computer-calculation. But I think the point with the flat water is not so important because that are the conditions the above mentioned "4-knots-sea-kayaker" likes to paddle. And the objection to the computer-calculation is legitimate, but only with the help of such calculations we could get objective and reproduceable results. Maybe there are members knowing a calculation of resistance based on choppy conditions to get more realistic results?

Nevertheless I would recommend to look for one important characteristic of the hull which is not difficult for you to recognize or to determine: the volume. The lower the displacement of a sea kayak (with a given length and beam) the lower can be the "wind and wave"-resistance. This could be important for you when - you never can exclude it - the weather changes and the wind gets stronger (5 Bft. and more) and the seas increase. If you paddle down-wind and with a following sea perhaps you may enjoy the wind and waves, because that will drift you towards your destination. But especially when you have to paddle into the wind the "wind and wave"-resistance will work against you and could get more strenuous than the "flat water"-resistance, which only were taken into consideration by the calculations of "Sea Kayaker".

*Udo Beier, Hamburg (Germany)*

### Life support

A couple of months ago, an elderly woman and her husband were anchored off a remote island aboard their yacht. The woman, who had a chronic lung condition, suffered an apparent heart attack. A distress call brought action, and she was airlifted to hospital. It turned out she had spasms in the oesophagus, which appeared to be a heart attack but wasn't. She is still cruising.

Now I certainly don't object to the infirm going cruising, and I would be dead against any law prohibiting them from doing so for their own good. One should be able to decide what one's own good is. On the

other hand, I don't think infirm sailors should expect governments to make unusual and expensive efforts to save them.

I don't know that the government paid for that particular airlift. I do know that, hypocritically, I'd call upon whatever resources were available if it were Nancy with the heart attack - and I'd do this whether I could pay for it or not. The downside, though, is that if we accept a Government Nanny, then she will make the rules - what kind

of boat, equipment, number of crew, licence and training we must have, and even whether or not we can go cruising at all.

There are far too few freedoms left for us to give them up casually. The option to go cruising in whatever we wish, with whatever safety equipment we deem essential, is part of our right to choose. The corollary is - or should be - that we're on our own.

After all, wasn't that what we wanted? □

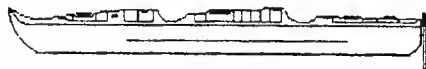
Rod Slaughter. Newbiggin by the sea. Northumberland.

Saturday 27th May standing on the deck of the M V Lord of the Isles, leaving Oban on the west coast of Scotland sailing to the Outer Hebrides, in 5 hours we will be in Castlebay on the island Barra. the starting point of our expedition. The next six days will be spent exploring islands in the Barra area of the hebridean chain.

Our group, Brain, Glen, Robbie and Myself will be paddling sea doubles which in previous years we have used at the Orkneys and last year paddling around the Isle of Mull. The Orcadian Sea II which we designed and built before the Orkneys trip, is a three section boat of over 4 metres splitting for forward and behind the paddlers making it easier to carry and transport. Using quick release clips and a male female joint, it takes only a few minutes to assemble or dismantle, even done afloat to avoid launching a fully laden boat on a rocky beach.



ORCADIAN SEA II



Arriving in Castlebay at 8.30 in the evening, we decided to take a car onto the the ferry for ease of unloading and getting to a suitable campsite. Although a little bit more expensive than carrying the kayaks on board it would mean less hassle on arrival. Leaving the ferry at our destination proved a damp affair, with heavy rain, we werent sure were exactly we would camp that night but after a short walk and advice from a local we found a suitable spot on the east side of the bay.

The weather forecast on sunday morning called for a change to our general plan, we had hoped to go south to Berneray first then head north up as far as Loch Boisdale, a strong south easterly wind blowing ment to land on the only suitable beach on Mingulay, a planned camp would probably be too dangerous due to large surf, not a good thing in fully laden doubles over 4 metres long. The longer range forecast said the wind direction would move to south westerly by tuesday so it was decided to do day trips in the Barra area until then.

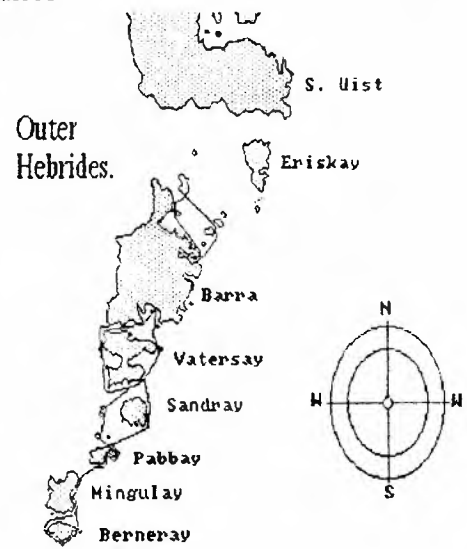
Sunday we paddled around Vatersay the island to the south of Barra, paddling out of the shelter of Castlebay then heading down the east coast of Vatersay soon convinced us we had made the right decision regarding Mingulay, with a rough sea it was a relief to enter the Sound of Sandray and run with the wind on our backs. The west side of Vatersay gave us some shelter, only when we crossed the large bay of Bagh Siar were we exposed to the strong wind. Rounding the north end of the island I noticed a causeway marked on the chart, asking Glen if he could see this on the Ordnance Survey map which he had, "no causeway marked on mine" he said, well there was on the chart and it was standing in over 10 metres of water it was looking like a big portage.

Paddling through Vatersay Sound our path was blocked, from a distance it was looking like a long portage, within about 400 metres of the causeway we landed on a small beach to survey the area.

The causeway was made of large bolders standing about 20 metres above sea level, on closer inspection we found a slipway either side reducing the length of the portage to the width of the road, back to the boats we made swift work of the carry and were soon paddling the last leg into Castlebay. Entering the bay the islands lifeboat was returning to it moarings, so we took the opportunity to get an up to date forecast, abligeing by radioing Stornaway Coastguard, the result being as earlier predicted south westerlies by monday night.

Monday, we decided to drive across to the north east side of the island to do a circular route reaching Hellisay, Gighay and Fuday. Sea conditions were starting to improve as we crossed to Hellisay, stopping in a sheltered spot for a lunch break Brian decided to prepare a fishing line which he us later in the day without any success. On the water again after a short vist to Fuday we returned to the car passing the islands airport, a flat sandy beach used at suitable times in the tide.

On returning to the tents we notice all the boats anchored in the bay had swung round on their moarings the awaited wind chang had happened we would be able to head south tomorrow.



Tuesday morning we broke camp, loading the boats for the first time took a while longer than expected but by late morning we were carefully sliding them onto the water. Leaving Castlebay behind we retraced part of the route we took on monday heading down the east coast of Vatersay. The conditions were a lot better this time with the assistance of the ebb tide, it wasnt long before we crossed to Sandray, then crossed the the Sound of Pabbay. At 2.5 miles it would be the first time today we would be exposed to the south westerly swell from the Atlantic. Out into the open we noticed the strength of the wind more than the swell, a steady force 4 made it a damp crossing paddling at a steady rate we were onto the north coast of Pabbay in 25 minutes.

Hoping to find a short cut through the Rosinish headland we found the tide to be too low, this ment an extra mile to paddle before crossing the bay of Bagh Ban where we planned a lunch stop.



Having a quick look along the beach we found a few good spots to pitch tents so it was decided to stop off on the return north.

From Pabbay we had an hours paddle to the to Mingulay Bay, crossing the Sound of Mingulay again reminded us that the wind hadnt eased but after the 2 mile crossing once again we had sheltered waters. Arriving in the bay gave us the choice of many possible places to camp, the map had a stream marked in the southern corner, at a closer inspection we found a pitch about 20 metres above the beach on top of a small cliff, a steady sloping bank running up from the stream allowed easy access once onto the cliff top we had a panaramic view of Mingulay Bay.



With the tents pitched after a meal we had a walk across the beach to the site of a ruined village, set in the dunes there was only the lower parts of the walls remaining it is thought whole population was wiped out by the plague in the late 1800s.

Wednesday morning and we plan to paddle around Berneray the most southern island in the Outer Hebrides, then head up the west coast of Mingulay and back across to Pabbay. The weather being the same as yesterday but no favourable tide for most of the day, breaking camp we were ready to get on the water by late morning.

Glen and I launched first, paddled out a few metres then waited for the others. As they were pushing off the beach we heard a loud crack from their boat, joining us we realised that one of the rear bottom clips had come loose. Rafting together we made a few attempts to reconnect the clip but without success. Brian and Robbie decided to reland on the beach to see what the problem was.

Glen and I stayed afloat and watched the others ashore disconnect the rear section and using rock as a hammer working on the clip, a short while later they were launching off the beach to join us and explain the situation.

The need for the rock was to bend the clip back into shape as it had stretched to such a point it was slipping of the connecting hook it is ment to fit to.

This happening in such conditions had completely suprised us, the clips fitted to Brian and Robbies boat were of a slightly different type to ours, the main difference being that theirs were made of stainless steel while ours were zinc coated steel. Our boat was the first one made and after a year of use the clips were in need of regular maintenance, when the second boat was made it was decided to use stainless steel clips to reduce the maintenance time. The question now was did the clip part because of bad fitting or was there some other problem. Discussing this for a while we decided to continue with our planned route keeping a check on the clip that had become loose.

Paddling south we soon were crossing the Sound of Berneray heading for the eastern tip of the island, looking to the west we could see Barra Head Lighthouse standing high up on the island. Sea conditions were still calm, so we pressed on, rounding Nisam Point we looked along the southern coast to see the cliffs increasing in size towards Barra Head. Moving along below the cliffs passing Cuiveg Point the swell was starting to pick up, approaching Barra Head it was about 2 metres with breaking waves over rocks below the headland.

Glen and I were about 30 metres ahead of the other two when we noticed they had stopped paddling and were beam on to the swell, looking at their boat the rear section was was rising and falling like a hinge effect on the top clips. Quickly we joined them and rafted together, Brain said he had made several attempts to reconnect the clips but there was a serious chance of crushing his fingers due to the motion of the sea. With the probability that the clips were broken the only alternative was to disconnect the rest of the rear clips and rudder lines before they failed. We new the boat would remain afloat without the back section but it would mean there would the problem of getting it back to sheltered water. We had to make a decission fast, deciding to lift the rear section inverted onto the middle of their boat and lash it down.

First there were two roll up water carriers in the way these had to be passed forward of Robbie and secured, I then released the top clips and rudder cables this allowed the rear to float clear. Passing it down the outside of the raft I moved forward to the mid section while Glen and Robbie struggled to keep the raft together, Brain and I dragged the section upside down onto the deck and secured it temporarily with spare deck elastics. Glen carries a coil of spare rope on his front deck so using this he eased back to the mid section to securely lash the rear in position. All the time we were changing positions everyone had to be clear of what we were doing especially Robbie who couldnt see what was going on. The swell was still throwing us about but we had drifted very little on one occasion we were close to the rocks but managed to keep clear. By the time Glen was finished he was fealing a bit seasick, all secured now was the moment of truth, would the boat be stable enough to paddle with a top heavy mid section.



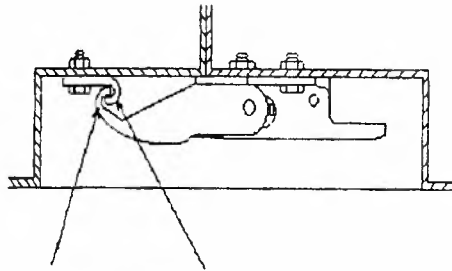
Releasing our grip on their boat they paddled forward taking a few seconds to get the balance right then paddled off in front, the level of the boat had change dramatically with Brians cockpit area awash most of the time. Paddling into the swell we could now see Barra Head Lighthouse above our heads.

We now had two options:

1. should we continue in this direction into the wind and swell not knowing what the conditions would be like further on or
2. take a chance of turning round puddle in the direction of the swell probably making their boat more unstable.

As the lads seemed settled in the direction we were heading the second option appeared too risky, all we had to do was get round to the Sound of Berneray out of the swell. Reaching the south west corner of the island took quite a while our speed couldnt have been more than 2 knots, although Brian and Robbie were paddling hard the drag on the boat was making it heavy going. The next 20 minutes were going to be the most dangerous for the other two, turning on the swell for the next half mile to get into the Sound of Berneray they were running with the sea. Slowly the swell dropped and we entered the calmer water of the sound giving us the chance to rethink our position.

2 miles from Mingulay Bay we would have to make repairs there so we could continue the further 15 miles to Castlebay. The immediate concern was how the other two were coping, it was clear they were feeling the effects of the heavy boat. Should we try to reconnect the end section, move it onto our boat or continue as we are. Agreeing we were stopping at Mingulay Bay the others decided to continue as they were, so on we pressed, nearly an hour later we arrived at the beach. Untying the rear section allowed the others to land easily then floating the section ashore we followed. before starting any repairs we had a bite to eat giving us time to reflect on what had happened and what to do next. Robbie keen to get on with the repairs was soon up pulling out the repair kit, on closer examination we found that the retaining hook on one of the clips had snapped off and the clip was stretched out of shape, this was the clip that failed earlier. The other bottom clip had also stretched but the retaining hook was still alright.



Failure Points

In their repair kit they only had one spare clip and hook, so it was decided to change the clip with the damaged hook to make a complete new set, the other clip could only bent back into shape. Putting the sections back together all the clips seemed to engage properly so that was all could be done at this point, with great care we eased the boats back onto the water, we decided to continue on to Pabbay, 3 miles north across the Sound of Mingulay. Back up to a normal paddling speed we soon left the shelter of the island into the open water the wind and swell on our back we soon had enough confidence in the repair to push on, crossing the sound and reaching Pabbay in less than an hour. Landing carefully on the beach at Bagh Ban to set up camp for the night everyone seemed more at ease now we were through the events of the day.

Unloading the gear from the boats soon back into the routine of pitching tents, taking off wet gear and making something to eat, Brian and Robbie decided to make another change to the clips by taking one of the undamaged top ones and swapping it for the weakened fitting on the bottom. This done the rest of the evening was spent exploring the area while Brian tried a bit of fishing.

Thursday morning and we left Pabbay on the last leg up to Castlebay, now confident with the repairs we planned to make a slight detour. Lingay lies north of Pabbay, and then to the west of Sandray is Flodday, the Ordnance Survey indicates caves and a natural arch on these islands so using the ebb tide through the Sound of Pabbay we spent a few hours checking them out. Once again we were soon in the familiar waters off the coast of Vatersay, leaving Flodday behind we crossed to its southern coast working our way back to Castlebay.

Entering the bay and then landing on the beach were we left three days ago we notice two people waiting by a car, as we were to find out later one of which was the village doctor who organises watersporting activities for the local school kids. Inquiring about the double we started to tell of our adventures over the last few days, and how the clips had failed in relatively calm waters. We were soon to find out how his father had done research into the use of stainless steel for the offshore oil industry, in detail he explained how stresses cause hairline cracks invisible to the naked eye, a reaction between the salt water and the steel occurs causing the steel to become brittle. This possibly explaining why the hook part of the fitting on the double had snapped off. Needless to say he convinced us to change the clips back to the zinc coated type, the following day we were walking past his house, on seeing us he brought out a book which confirmed what he had said the previous day.

As luck would have it we didnt meet him before going to Mingulay as this knowledge probably would have changed the whole plans for the trip. To paddle to a remote island 15 mile from civilisation over open water with fittings that might and later were proven suspect would have been a bit too risky.

Circumnavigating the isle of Mull last year had been a challenge to the four of us, the Orkneys the year before with its strong tides and bad weather, we thought, would take some beating. Now I think the few hours we spent off Barra Head totally isolated coping with the unthinkable situation will stay at the top of the list of ones to remember.

The three section design of the Orcadian Sea II proved its self, the type of clip being the weak link which we now have rectified but the most important point of the whole incident to me was the way it was handled in a positive calm manner, it was the strength and quality of the group that got us back to Castlebay.

Brian Athey, Robbie Baron, Glen Campbell and Rod Slaughter.

### Late shipping forecast

The late night shipping forecast on Radio 4 is to be moved from 00.33 to 00.48, a fairly inconvenient time for anyone trying to get a decent night's sleep before a day on the water. There must be an increasing case for moving the inshore waters forecast, particularly applicable to leisure craft, to the earlier 17.50 spot when it would also assist many people in making a decision whether the next

day is viable before they even set off for the coast. Alternatively, as the last inshore waters forecast information of the day seems to be issued to the BBC at about 7pm it could be broadcast on its own without the rest of the shipping forecast at about 9 or 10pm with a far larger audience than it is likely to receive in the middle of the night.



**PRESS RELEASE**

**SOUTH WEST REGION SMALL CRAFT SEA TOURING GUIDE,**

**DORSET AND SOUTH DEVON COASTLINE, VOLUME 1.**

The "South West Region Small Craft Sea Touring Guide, Dorset and South Devon Coastline, Volume 1" is in the final stages of production.

Designed to cover Dorset and South Devon coastlines the Guide provides a reference to nearly 200 locations where small craft may launch or land. Chart information, HM Coastguard, shore coverings, tidal streams, surf conditions, outfalls, local amenities and points of interest are all covered in this handy 86 page, A5 paperback book.

The Guide forms part of a trilogy which will ultimately cover all of the South West peninsula including the Isles of Scilly up to the Severn Road Bridge.

The Guides are issued by the British Canoe Union South Regional Committee and compiled by their Sea Touring Representative, Nigel Hingston.

The Volume 1 will be available early in the new year. For further information contact Nigel on 01626 854175 (Home) or 0421 610705 (mobile).

**A.J Ford FRGS  
Am Kurpark 4  
37444 St Andreasberg  
Germany**

**Tel: 05582-619  
(From UK: 01049-5582-619)**



I had been looking forward to seeing you at Crystal Palace earlier in the year - never mind, I hope to see you at NEC in February, all being well. I have a couple of things for the next ISKA Newsletter.

Firstly, more as a hobby than with a profit motive, I sell new and second hand books on canoeing/kayaking and have the following books available which will be of interest to sea paddlers wishing to know more about the aboriginal beginnings of the sport.

<b>Qajaq</b>	£14.00 (*1 display copy at £13)
- I have five copies left.	
<b>Bark Canoes and Skin Boats of N America</b>	£24.00 (Paperback version)
<b>Glory Remembered</b>	£20.00 (This book covers the wooden headgear of the Alaska Sea Hunters - beautifully illustrated and well researched)
<b>Contributions to Kayak Studies</b>	£18.00

The slightly higher price is to cover postage from USA/Canada. Postage would be on top of the above prices; however I do hope to be at NEC selling these and other books. I am now "running" the Historic Canoe and Kayak Association and would be grateful if you would give us a couple of column inches. A copy of the first Newsletter I have produced is enclosed. Membership is £10 per annum - payable to me - until the post of Treasurer is sorted out mid '96.

Finally, I am continuing my trips in Southeast Alaska using Nordkapps and for 1996 would hope to put together a trip, starting early June for a total of 4 weeks, travelling from Juneau to Sitka (unless the party want to do something different). The cost of the trip is £450, which covers use of the kayak, emergency equipment, provision of charts, etc. It does not cover food, camping equipment and fares to and from Alaska.





Abbreviations of Newsletter/Magazine Titles:
AII AIKM (Italy), AN ANAR (UK), AS ANSKA NL (GB), PC: Ivy Carina (US), CC: Canoe/Kayak Magazine (P), CM: CR/Mar (P), CS: Canterbury SKM (NZL), IN: Investigator Canoe Cl. Mt. (AUS), KL: KANUKA (AUS), RW: KANUKA (AUS), KS: Kama-Sport (UK), KY: Kayak UK (US), PW: Paddlers World (GB), SK: Seckajak (D), ST: Sea Trek (AUS), SY: Sea Kayaker (US), TC: The One (US), TE: One (D)

Table with columns: Group, Title, Abstract, FI# - River description in detail, Author's, Published, Page.

General Themes

- 26 AUS Training, Kayakers, Paddling Technique
27 LEARN AND LEARN. Most kayaks turn the sharpest with an outside lean. For novices the inside lean (with low brace) feels more natural. 'telemark turn'
28 Australian Canoe Federation Award Scheme: Skill award levels: Basic, Proficiency, Advanced. Instructional awards: Basic, Instructor, Senior Instructor
29 Technical Whores for Cruising in Wind. Maintaining straight course in wind; across the wind; paddling downwind; paddling into the wind, summary
31 EUR Equipment
31.1 Pompe elettrica per Kayak (Ital.) 'Bilge Pump MOD. 023' (28 L/min) with dry lead-acid battery FIAMM-GS (12V 2Ah) and Reed contact
31.2 Dry Suit Test Polypropylene underwearer under dry suit. After 4 hr. in 6°C water paddler was still able to breathe regularly & to make precise movements
31.3 Antriebs- und Inflator-Hohe (German). Parafoils/Hohe for kayaks. 1-2 m² are enough. Best handling in double or 2 singles. Tested: Christopher-Blitzart, Goliath
31.4 Paddles with a Twist. Three paddles with cranked shaft tested: 'Double Torque', 'Modified Crank' (Lemdal) and 'Ergonom' (Lutmana)
31.5 Don't Feed the Bear. Bear-proof, completely smooth containers (Garco Machine, Visalia, CA). 2 sizes for 6 resp. 9 day relays. Not watertight
31.6 Out to Sea on a Wing / Al Lago du di u'Alta. Sailing rig for canoes and kayaks. Outrigger with dynamic lifting foil of neutral buoyancy

BBE Kayak design, building, repair (1); Library: Unique designs and materials (1); Evaluation (1)
11 Piccola Guida all'Autocostruzione di Kayak in Componente Marino (Ital.). Several designs and kits for home-built plywood kayaks
12 Build your own boat - Part 1. Materials list (with approx. prices tags), weight estimates, step-by-step instructions for each step until launching the hull. Part 2 will follow
13 Caring for Your Pet Kayak. 'Respect Thy Kayak'. On the automobile, traveling with kayaks, shipping, storing, naming your kayak

sh One of a Kind. 5 uniques: foam core sit-on-top (3.25m; 13kg); Sty94 plywood k. modified; Greenland Strip k. Aleut-inspired open-top cruiser; Greenland k.; Rob-Drien-k.
22 Do-it-yourself-Checking Hull Speed (see v1): Use pulse rate monitor to paddle different kayaks with equal heart rate (=equal effort). Check distance/time/pace
23 Kayak: Testing versus The Real World. Results of kayak testing by the numbers are generally accepted. But is that the average paddler really wants to know?

BSK Sea kayaks
21 L'Albatros et le Périel (French). Comparison of both in test. Build: Karbone. 4 Dimensions A: 5,07\*0,60; 325 lb, 24 kg; P: 5,60\*0,52; 23 kg
20 About better Kayaks. Waterline beam defines initial stability, overall beam defines and stability. Skilled paddlers like low initial stability
21 Le SVALBARD (French). (5,35(5,557)\*0,55(22 kg) Description. Practical experience. Modifications according to customers requirements possible
33 Kayak Reviews: Sirius M (P&H, 5,31\*0,53;343 lb; 24,5 kg; OFK). Seader (Dagmar, 4,86\*0,39; 334 lb; 26 kg; lin. PD)
34 Kayak Reviews: Sea Lion (Perception/Aquator, 4,91\*0,59;411 kg; lin.PD); Discovery (Nordwest, 5,46\*0,56;458 lb;26 kg;OFK)
35 Kayak Reviews: Islander ME (Dragonworks, 5,17\*0,54; 404 lb; 24 kg; OFK); Greenland Solo (Seaviver, 5,42\*0,60; 429 lb; 26 kg; folding kayak)

BUS Literature and book reviews
1c Review: The Complete Book of Sea Kayaking. 4th ed. by D. Hatching. UK: Black, London'94; 180 p.; £12,99. "...a book to complement your canoeing library". Ramwell, J.J. AS 3(95) 1
1d Review: 'Never Turn Back' by Ron Waters (The Great Rift Press, Bonneville, Idaho, USA). The life of Wali Blackstar, America's famous white water pioneer
1f Review: 'The Dramatic Voyage' (Kayak Dundee Press, R.D.I., Runanga, West Coast, NZL). Paul Caffyn's lone circumnavigation of Australia (360 days, 9420 mi.) Dickinson, G. PW 62(95) 2

FUF Animals and plants in and around the sea
De Les dauphins du Bassin d'Arcachon (French). A group of six female dolphins lives there. Map; Main dolphin places throughout Europe
Leucher, Brice CM 65(95) 3

GDP Open water kayaking & sea kayaking
1b Another Lesson from the School of Hard Knocks. Dangers of wave-wrecked boats backed by cliffs (see: 1q 4+5). Watch for chaos of wave-sweeping
1c Some helpful and inspiring tips on initiating a trip. How to make a group trip a success. Watch for safety and liability; adequate ability of all participants
1d Kayaking is not a Damsel in Distress. The biggest hidden danger is change. Conditions in the marine environment are subject to small and drastic changes
Lull, John KY 101(95) 1

MED Health and Medical problems
20 Notes from Wilderness First Aid Lecture by Eric Weiss, MD. Basic concepts of first aid kit. How to use. "The more that's in your head, the less you need in the kit" - Warren, R. BC 3(95) 2
21 Minimum Stroke Paddling. Reduce stresses in the wrist and forearm by keeping wrist straight, fingers hooked around the shaft, not clenched. Cranked shaft advised
22 Near Death Experiences and Run Waters. Run waters, crabs, other mollusks & crustacea often... sources of vibrio infections. Short briefing advised
23 Taking Hypothermia Seriously. Nearly every organ system... is damaged by overheating. Electrolyte formula: Y-Y teaspoon salt in a quart of water. First aid
24 Hypothermia - Impact & Prevention. Mild Hypothermia: Any heating method is fine. Severe Hypothermia: reheat through the "core" only
25 You want me to do what? How do I dispose of "human waste", especially for solo and small groups
26 Hypothermia made Simple/Fueling up. 2 articles. "Pack the patient warm, don't move" / Give warm, sweetened drinks
Tilton, Buck / Cloutier, Ray SY 95(95) 3

NAV Navigation
0a Pre-Navigate for easy on-the-water navigation. Locate prominent marks on the chart, draw radiating lines at 10 or 20 deg intervals, note their magnetic bearings
0b Pianificare la Navigazione. Dalle Gite alle grandi Traversate (Ital.). To plan all which is foreseeable gives free capacity to cope with the unexpected
0c Choosing to live with GPS (see 0k-HLL). Dan has 2 reasons "pro": 1. realize more detail, good supplement to map and compass; 2. it's simply easier
0d Imparare a navigare in un'unica lezione (con un esempio pratico) (Ital). Quick Navigation lesson, with example from Mediolana Archipelago (Sardinia)
0e Istruzioni de base pour une Navigation à l'Estime (French). Magnetic course calculation with declination, deviation, wind & current. Example: Dielette-Jersey
0f Per non perdere la bussola (anche se non ne avete mai posseduto una) (Ital); Navigation without compass (provided the sky is clear)
Saglia, Agostino AB 14(95) 2

RBU Review and Survival
18 Auto Sauvage en Kayak de Mer (French). Entering from stern. Legs forward. Detailed description, 6 drawings. 80% success at first practical attempt
19 Marooned. E-day survival test on Edward King Island, a rugged small island three miles off the west coast of Canada. Priorities: Shelter, fire, water, food
Witens, Jim SY 95(95) 3

SIC Safety
31 Safety: Make sure you are familiar with how to deal with the following situations which can occur in open water: Weather, current, topography, people hazards
32 Safety: Paddle signs of the kayakers du Ponant. A code for sending, receiving and acknowledging signals by positioning and/or moving the paddle
33 Flotation - Shark Without It. How much, where, in place. Flotation systems: Best bag; bulkheads; sea socks/pods; inflatable coils. Backing up your flotation system - Brosn, Matt SY 105(95) 3

TEC Technics and Do-it-yourself
21 Pompe elettrica per Kayak (Ital.) 'Bilge Pump MOD. 023' (28 L/min) with dry lead-acid battery FIAMM-GS (12V 2Ah) and Reed contact
22 Getting on Track. Retrofitting an old kayak with a skeg really is worth the hassle. Detailed instruction, drawings, photographs, list of materials
Brown, Jamie SY 105(95) 4

TOU Long-range paddling tours
0q Germany to Australia. Reflections of a Long-Distance Paddler. The 3-years' voyage of these friends from Europe to the Melbourne Olympics 1965
Tate-Stratton, N. SY 105(95) 7
0r UUL. Not and what's Baiting
0s How I Spent My Seventy-Ninth Birthday. Paddler still learning to kayak. "If it can't be rolled it's not a kayak and if you can't roll, you're not a kayaker"
0t 'Musings'. It's now twice as far to the shop, and they've added a hill; they are making stage steeper, people are much younger than they used to be, and...
0u Rambling on water, rambling in print. Some personal paddling experiences; 'Love and Marriage' (Oh) continued... Are BASKers over-communists?
Laurenson, Tim BC 5(95) 1

UNF Incidents, Accidents and their Causes
10 Kayaker Dies at Pillar Point: Reach, currents, sneakers, possibly deadly heat / What We Can Learn: 5 points (nothing that we didn't already know)
1p Some Lessons Learned or No Still - it Happened Just Like This. Surf incident with Seascope 2 near Newport. Wet exit twice without PFD. Boat lost
Williams, Doug KY 101(95) 1
1q WWV Weather, Wind, Waves and Tides
wd Snorklers. Experiences of three paddlers near Bodega Head. Reflections about incidents. Abundance of arrogance as possible component of causes
Wells, Pwony BC 6(95) 4

Paddling areas

- AS1 After: China, Hainan, Japan, S-E Asia
sh RIM-LAU Return Expedition. Commemorating the maritime kayak raid (South China Sea). Planning & conduct of the exercises from Batam to Singkep
ADison, John ST 17+18(94/95) 17
CB Great Britain: England, Ireland, Scotland (4)
2p Cap sur Berns Head (French). Nightly passage from Skye to the Outer Hebrides; continuing to Berns Head and back, 16 days, bad weather
Jarvis, Marc CM 65(95) 7
DIR Various Waters; Mediterranean Sea (see)
2m 11 Kayak de Mare... Momenti di Gloria (Ital.). From Oristano (Sardinia) to Oria (Italy) June 25/26, '94. 137,5 NM in 31 hours. Two kayaks and assistant boat
Monicchi, Marco AB 1(95) 1
KOP The BBE Continuum: Australia (1), New Zealand, Polynesia/Micronesia, Tennessee
0c Great Barrier Reef (German). Four-day trip round Hinchinbrook Island (National Park). Map (1:15 M), Info, Addresses, Dial-ers. No boat rentals available
Block, Franz KL 2(95) 7
uu Canoe Testing Code of Practice (see 4). Australian Canoe Federation Award Scheme. Skill awards: Basic, Proficiency, Advanced. Instructor awards: 3 levels
Aitkin, Laurie ST 1(95) 1
BPK Ibers
1p Algarve 1993 (German). Coastal trip in Klipper double, from Real Seso Antonio to Cabo São Vicente. Eight paddling and ten real days (wrist problems)
U.P. SK 4(95) 7
USB USA: Maldivian waters & General Information
1t I like 'em back and wet. Kayak carving within the Red Zones of Mt. St. Helens. Boulder-rolled wet covers discovered, later blocked again. Now looking for minor.
Clardy, J. BC 7(95) 2
Kanu-Information Joachim Hermann Egmringstr. 11 D-85653 Aying phone: 08102-3200; Fax/Modem/phone: 08102-71309 (49-8102-3200 / 49-8102-71309)

International Sea Kayak Newsletter Review

Abbreviations of Newsletter/Magazine Titles:
AII AIKM (Italy), AN ANAR (US), AS: ISKA NL (GB), CM: CR/Mar (P); IN: Investigator NL (AUS); KY: Kayak UK (US); PW: Paddlers World (GB); SK: Seckajak (D); ST: Sea Trek (AUS); SY: Sea Kayaker (US)

Table with columns: Group, Title, Abstract, FI# - River description in detail, Author's, Published, Page.

General Themes

AUR Equipment
43 Ultralight Paddles: To Know Them is to Love Them. 5 carbon-graphite/glasfiber-paddles from 21 till 32 oz. (0,6-0,9 kg), US\$350-234, tested
Schumann, Roger SY 95(95) 4
44 Water, Water Everywhere, Not Ayr a Drop to Drink. 7 water purifiers compared: price, cost per gallon, maintenance & repair, time per liter, removing viruses?
Hansen, J. SY 95(95) 5
45 Using Sea Anchors in Surf. Tests with a Driftstopper sea anchor at Pacific Beach. Solo and with partner to look for ease of surf landings
Dutton, Steph SY 95(95) 2
46 Focusing on Binoculars. Good waterproof binoculars should be able to handle dandruff in sweat or salt water. First aid, size, configuration, shopping tips, in store tests - Freeman
SY 95(95) 3
47 A Before-You-Buy Guide to VHF Radio. VHF radios cost a little over \$100. Licenses (USA & CAN). Waterproof? Batteries / Radiating the Coast Guard - Ormrod/Haimes
SY 95(95) 5
48 Inside Your Wet suit - Neoprene. How Neoprene is Made, Suit Construction, How it works; Wet suit; Wet suit; 1 would stay away from dynamite for ocean paddling - Lusher
KY 104(95) 1
49 Geschichte und Geschichten vom Rolling-Floor (German). A modern replica of the Inuit otching bladder to ease rolling up
Brosn, Matt BC 5(95) 2

BBE Kayak design, building, repair (1); Library: Unique designs and materials (1); Evaluation (1)
1m Ordering a New Boat - a learning experience. Production quality? Min. vol. covered? LI/V-hull? Screw-on/cover. hatch etc. ("Still confused, but on a higher level now") - Hill, Jon ST 30 3
1n Uome-Kayak. Un binomio chi si regimisce attraverso l'acqua (Ital). Best sitting position; seat padding; thigh supports
Saglia, Agostino AB 9(95) 2
1o Homo-Kayak. Un binomio chi se combina per l'esperienza dei viaggi - (French version of 1a; translation by Pierre Segaud)
Saglia, Agostino CM 67(95) 2
1f A Kayak Truly Your Own. Tired of the "hardshell compromise" we call sea kayaker? Ron wanted a better boat. He built his personal kayak at the Rogers' school - Custerion, Ron AN 4(95) 1

One of a Kind. 5 uniques: 19-B-Kulczycki design; 17-A-OLEN-L-Kayak (mix technique); 16 - A 18-ft-plywood-kayaks (Payne design); 22-B-cargo kayak (Farber design)
SY 95(95) 1
BSK Sea kayaks
36 Guide I.S.K.A. 1995 de l'Association de Kayaks de Mer (French): 110 single-seat sea kayaks available in Europe - Beier, De Angeli, Cadoni, Gabard, Gjessing, Ramwell, Kappers
PBK 21(95) 3
37 Making Sense of Kayaks. Reflections of the "Nordkap" design about kayaks - paddling. "The reason I am a paddler is that I enjoy paddling"
Goodman, Frank R. AS 5(95) 8
38 Comments on material from (AN)95: Heart rate is no power scale (Schellens, BBKV); volume is no load scale (Beier, BSK31); better use "fitness" F=D\*(L\*Y - Winkler, J. AN 4(95) 1

BUS Literature and book reviews
1f 2 Reviews: The Dramatic Voyage (P.Caffyn; Kayak Dundee Press, NZL). 360-day/9420-mi Australia circumnavigation
Dickinson, Glyn / Schumann, R. PW 62(95) / SY 95(95) 5
2p Various Information
50 Paring Shots. The future of sea kayaking: "Disneyland" trend, cheap plastic boats, sales gimmicks. Still some will practice safe paddling and build/buy better boats - Winters, Dan AN 4(95) 1

MED Health and Medical problems
27 Wrist Risk - One mans problems & solutions. Med. treatment, padding, pose. Now short mid weight Lemdal carbon shaft w. variable feather joint & some 'give' in it - Ross, D. AS 5(95) 2
28 Mr. Peanut and the Supermodel. Cindy Crawford's exercise videos as keys to better paddling technique. "I'm happy now to have a spine of rubber"
Cunningham, Chris SY 95(95) 1
29 Paddling Progress. "Sea kayaking has been so vital to my mental regimen as leafy greens, late-night ice cream and Kungel sausage..."
Romano-Lax, Andromeda SY 95(95) 4
2a First Aid Kit - Part 1. What should go into a First Aid Kit? How to use safety pins, accident report form, Betadine. What to do for that nasty cut, how to bandage
Williams, KY 104(95) 1
2c Shoulder or Upper Arm Pain. Typical variations of upper body by paddling. Gymnastics
Gill, Nicholas KY 105(95) 1

RBU Review and Survival
26f Un système de sauvetage Type Eriar. French version of "Rooney Stirup" (26), translated by Segaud, Pierre
CM 67(95) 2

SIC Safety
3u Weekend Scary Incident. NSW South Coast (Jervis Bay). Unforeseen strong wind. Some paddlers exhausted. Towing problems (not trained)
Nicholas Gill et al KY 104+105(95) 5
3v The Cambria Adventure. Group of 24. Two newcomers on sit-on-tops. Wind picking up to 3-6 and swell from stem. Sit-on-top couple exhausted. Toward
Goodman, Len KY 104(95) 1

TEC Technics and Do-it-yourself
2m Skags. Two retractable skags (following an article by Rob Bryan in "Wooden Boat" Feb. 95) and fitting. Skag trunk in contact with bulkhead - Bascomer, John ST 20(Aug/95) / AS 6(95) etc: 2
2n Fraser Island: Some Technicalities. "As opportunity to examine equipment used in (Australia's) eastern states and form some impressions about it"
Carter, Peter IN 9(95) 1

UAW Environment
3k In The Wake of the Brner. Two years later. Shellard appeared to come off lightly. Wind dispersed the mass of oil. Fortunately it was light oil.
Foster, Nigel SY 95(95) 5

UNF Incidents, Accidents and their Causes
1q HM Conisgarth - Canoe Incidents 1994. Data of 38 registered incidents round Great Britain
AS 5(95) 2
1r Some Thoughts on a Recent Incident. Training session resulted in Coast Guard involvement. Weather deterioration. 3 paddlers "lost". No VHF. What to learn
Winters, Dan AN 5(95) 2
1s Lost Boat/Potential Disaster in Kings Canyon. Solo. Look at rapid, boat escaped; no path out scrambling/swimming downstream, boat recovered, trip completed - Coston, R. KY 105(95) 1

WWV Weather, Wind, Waves and Tides
0e When Lightning Strikes. Be prepared to get off the water quickly. Wear PFD to escape drowning after surviving a lightning strike. 9 vital rules for sea kayakers
Foster, N. SY 95(95) 3

Paddling areas

- BR1 Great Britain: England (4), Ireland (2), Scotland (1)
es Die Themse hinauf und hinab. Fahrböfahrungen im Gezeitenbereich des Flusses (German). From Shermans to the Grand Union Canal (Brentford). Map
Hoh, Jürgen SK 50(94) 7
ic Solo Circumnavigation of Ireland 22nd June 95-23er Aug 95. Starting point: Portpatrick (Scotland). 1035 (nautical) miles, changing weather conditions
Smith, Nigel A. AS 6(95) 2
DIR Various Waters; Mediterranean Sea (see)
m5 Too hot for John. Passage Erbalunga (Corsica)-Elba (30 NM) and Elba-Piombino. Group of four in single kayaks. Problems: Mist, low visibility range, traffic
Cadoni, Sergio AS 6(95) 2
USK USA: Pacific Coast
2A Punta Gorda. Account of the most exciting leg of a 1,600 mile trip from Victoria, BC to Mexico: "California's Lost Coast". Rocks, storms, fog and a shark
Dutton, Steph SY 95(95) 2
Kanu-Information Joachim Hermann Egmringstr. 11 D-85653 Aying phone: 08102-3200; Fax/Modem/phone: 08102-71309 (49-8102-3200 / 49-8102-71309)