



SEA KAYAK TOURING

A MANUAL FOR SEA KAYAKERS

By JOHN J RAMWELL.

FRGS MRIN

BCU L5 COACH (SEA AND INLAND)

BCU AWARD OF MERIT

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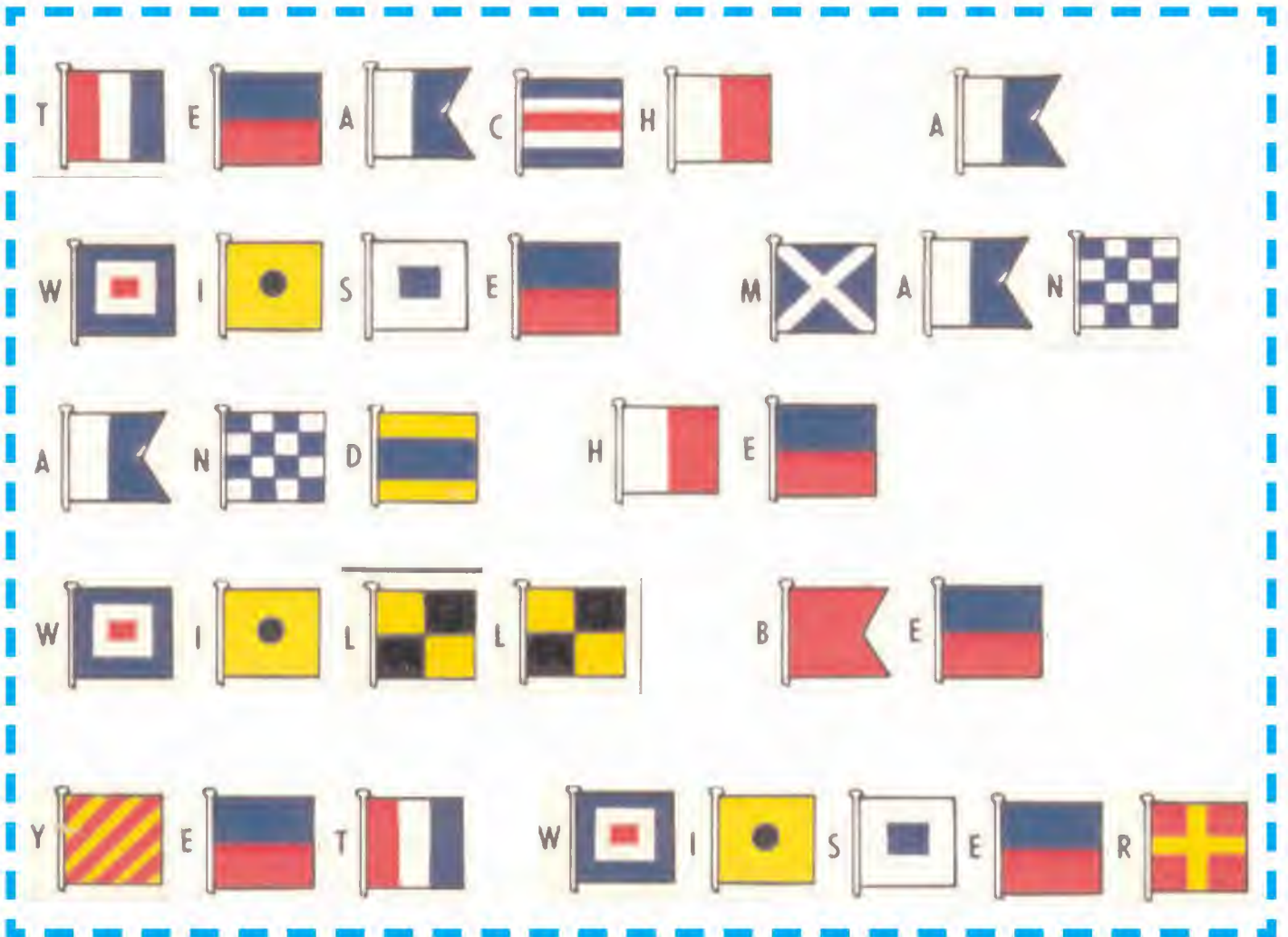
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FOREWORD

By Duncan Winning. OBE

Recreational sea canoeing has been practiced in the United Kingdom since at least the 1830s. For many years it was an activity reserved for the well to do, but fell from favour as sea canoes adopted sail and grew into cruising yachts. The introduction of folding craft from mainland Europe in the first half of the 20th century heralded a revival in this pursuit. After World War II, in a land fit for heroes, an upsurge in interest in outdoor activities, coupled with the emergence of better designs for home building, led to an increase in the number of paddlers taking to salt water. However, it was not until the 1960's that sea canoeing, or sea kayaking, in its present form started to develop. Outdoor education was added to the schools curriculum, introducing young people to paddling. The canoe coaching scheme was established, encouraging more people into the sport, safe in the knowledge that they were being led by competent, trained coaches. Glass reinforced plastic appeared as a canoe construction material, enabling production of quality craft at a lower price than was possible before. Sea canoe designers turned back to the kayak of the Inuit for their inspiration, thus benefiting from thousands of years development and in so doing produced seaworthy craft capable of using the advanced paddling techniques of the same arctic peoples. These factors all contributed to a remarkable upsurge in interest in sea paddling, accompanied by an ever increasing level in personal kayak handling skills and adventurous undertakings.

During the growth of this "Nova Sea Canoeing" scene a number of people became well known, both in the United Kingdom and abroad, writing books, coaching, leading trips, giving lectures, designing and manufacturing kayaks, equipment etc., on a professional basis. Others contributed just as much to the development of sea paddling, while continuing to earn their living in different fields. One such is the author of this book.

Starting sea paddling in early 1960s, he quickly became involved in the rapidly expanding canoe coaching scheme in which he became a level Five Coach. Not content with this he was instrumental in setting up the Sea Touring Committee of the British Canoe Union. He took over the running of the 'Advanced Sea kayak Club' shortly after its founding and single handed over last 40 years turned it into what is now the 'International Sea Kayak Association', producing a newsletter which provides a bond between paddlers in many different countries. Under the banner of the BCU Sea Touring Committee and the Advanced Sea Kayak Club he ran summer trips combining touring and instruction. In 1971, under the same banner, he ran the first Sea Kayak Symposium and started a new type of event, providing a spread of activities, gathering of lecturers and experienced paddlers at the one location to the benefit the other attendees. Sea Kayak Symposia are now run in many countries and have proved to be one of the best and most enjoyable ways of spreading good practice among sea paddlers and meeting like-minded people from other lands and many different backgrounds. He was a founder member of the Nordkapp Trust devoted to encouraging sea kayaking in the USA and he regularly contributes to Symposia overseas.

Over the years he has led the canoeing element of expeditions for the British School's Expedition Society and Raleigh International. to such places as East Greenland, the Russian White Sea, Spitsbergen and Chile. He has long been an advocate of the benefit of adventurous activities to the development of the young, where an element of danger in controlled circumstances is a vital component. In this regard he has campaigned for the establishment of an international standard for coaching sea kayaking; so far without success.

When an individual with such a massive input to sea paddling over such a long period decides to put pen to paper, the resultant work should grace the shelf of every paddler committed to sea kayaking. It has been a great honour for me to contribute this foreword.

Duncan R Winning OBE. Honorary President, Scottish Canoe Association
& Honorary President, Historic Canoe and Kayak Association. January 2005

PREFACE

The older hands among you will remember the first edition of this manual, first published in 1976. I am gratified that at the time it went to four editions and sold in its' thousands as I only originally wrote it to help me with the theory side of the British Canoe Union (BCU) Advanced Sea and Open Water Proficiency Test; there not being any similar publication available at the time. It worked in that I gained the BCU award I was seeking and hopefully it also went on to assist others, not only gain BCU awards, if like me they were 'chasing paper', but also to gain a better understanding of the sea, the skills required and the associated knowledge that must come with the territory if we are to approach our chosen activity with some professionalism. Sea kayaking has not always been so readily accepted by other authorities. It was considered foolhardy by some to take a flimsy craft on the open sea. Only by taking a professional approach and working to educate ourselves and others did we finally manage to persuade such as H.M. Coastguard that we wanted to carry on a kayaking tradition that was thousands of years old whilst turning it into a recreational activity.

All our efforts paid off and memories of officials telling us to get off the water and stop putting emergency services at risk have long faded.

I have often been asked, "why the title, 'SEA KAYAK TOURING'". I have no fancy answer. Perhaps it was because I wanted to embrace all aspects of sea kayaking to include expeditioning and all that this entails. Ultimately sea kayaking is about taking off over the horizon to explore new coastlines, embark on long open water crossings; it is about touring and touring is about journeying, exploring, discovering. There are now many books on sea kayaking. Some covering only aspects of our sport such as navigation, camp cooking, weather, etc. This one sets out to be fairly inclusive hence I have called it a manual. It can be read straight through or used as a reference. Of course it cannot be complete. For example books have been written on kayak design and construction, both early and contemporary. If you really want to know more about such as weather and meteorology than can appear in this manual, then you are going to have to do some more reading of other specialist books. I hope my book will give you a fair over-view of sea kayaking, sufficient to get you paddling and to encourage you to dig deeper into the allied subjects.

Interspersed through out the informative stuff are anecdotes which hopefully bring in a little interest whilst illustrating the points being made. Many of the stories are from my own experience following over thirtyfive years in canoe sport. Some are about friends and fellow paddlers. Either way I hope you agree that they help to add something. You will find these anecdotes as well as little poetic excerpts written in italic.

Finally to thank a few friends who have suggested amendments to the original manuscript. Raymond Rowe, Frank Goodman, Keith Maslen, Alan Byde, Duncan Winning, OBE. Drs Martin & Sue Spurling. To these people I am very grateful for their valued advice, which in the main I have taken. Of course the final responsibility for the accuracy of the contents is entirely mine.

Most of all I would like to thank Jenny, my wife, who has let me have the best of both worlds, - a home and a time consuming interest. Today, over thirty years on since my first edition was published I still paddle at every opportunity.

I am now retired from full time work and have therefore been able to complete this volume started over ten years ago. It has been great fun writing it. It will be a special bonus if it ever reaches the book shelves. I hope you find it useful.

John J. Ramwell
5th Edition 2007

"With the same inner control, he flew through heavy sea fogs and climbed above them into dazzling clear skies ...in the very times when every other gull stood on the ground, knowing nothing but mist and rain. He learned to ride the high winds far inland, to dine there on delicate insects.

What he once hoped for the Flock, he now gained for himself alone,' he learned to fly, and was not sorry for the price he had paid Jonathan Seagull discovered that boredom and fear and anger are the reasons that a. gull's life is so short, and with these gone from his thoughts, he lived a long fine life indeed "

From 'Jonathan Livingston Seagull' by Richard Bach

INTRODUCTION

IN A ONE 'SEA' CANOE YOU ARE SKIPPER AND CREW'

From the beginning we have recognised the sea as a supreme wonder and paradox of the natural world - at once a thing of beauty and terror, a barrier and a high road dividing and uniting mankind. A source of life and a fearful and capricious destroyer. The sea poets of every land sung in exaltation of its' sunlit moods and in awe of its' fury and fathomless depths.

Life itself emerged from the seas; the basic fabric of all living things was initially determined by it; the entire system of nature composing our environment is governed by it. More than any other physical feature of the planet it is the sea that makes the earth unique.

It is this majesty and vastness that attracts many of us to the sea and to kayak upon it.

So come with me on a sea kayaking journey; experience the elements first hand, be at one with the natural world. Feel the wind and spray on your face, feel the kayak sway and buck beneath you as you ride the waves, feel the exhilaration of being so close to the world around you as your body swings in rhythm to your paddling. Like an arrow, your slim and streamlined kayak cleaves through the water.

The sea is irresistible. It has a potent charm that draws us to it. It can be like a sheet of crystal in calm tranquillity with a sky reflected to its' bosom; or its' billows can roar as they dash, fume and last in fury on the rocks that dare to stand in the way. Storms and tempest can rage. The sea can be a wild thing, filling one with dread and excitement. Surfing waves, tumbling and crashing overfalls and fast tidal streams rushing through narrow gaps between islands and headlands.

It is this double attraction of the natural elements and the combination of skill and effort that is attracting an increasing number of people to this modern version of a very ancient mode of travel.

Consider the places it is possible to reach in such tiny craft. Remote islands and beaches, sea stacks and caves, bird and seal colonies. The world is full of sea kayaking opportunities. Many sea kayakers, (and I am one of them) prefer the Arctic and sub-Arctic where lies the origins of sea kayaking and where there is such an abundance of land and marine wild life. Paddling through a 'Disney World' of ice floes and bergs as big as cathedrals with the occasional snort of whales as they surface for air. Paddling right up to the face of a tide-water glacier, risking all as huge slabs of ice thunder from the face into the sea below. Seals sleep fitfully on ice floes, seemingly undisturbed by the loud claps as the glacier calves, only moving with tremendous alacrity as we approach too close for their comfort. Overhead an eagle soars, chased across the top of the cliffs by an angry seagull. If you are really lucky you will see a bear amble lightly down off a glacier to make its' way along the beach foraging to satisfy an empty stomach after a winter of hibernation.

In many sea areas of the Northern Pacific there is a return of the sea otter despite the cruel effects of the Exxon oil spill (1989) in the Prince William sound off the south coast of Alaska with the deaths of over a



...there is a return of the sea otter

thousand otters. Previously hunted almost out of existence by the Americans who permitted unlimited hunting in the last Century, they float on their backs cuddling their young to their breast or simply breaking open a clam. The sea otter is only found in the Northern Pacific and adjacent seas. It is not related to the European otters which are making something of a come back in places like Scotland.

Lengths of rocky coastline can be

carpeted by huge blubbery brown bodies of thousands of walrus. The inquisitive faces of seals, eyes wide open in amazement, pop up and down around the kayaks. Such prolific wildlife in such pristine wilderness and all intimately experienced from your sea kayak.

Overhead the skies warn of pending storms, insisting we head in for safety; or the clouds scud in beautiful formation across the expansive sky. The sun give off its' warmth and strength. The wind agitates the water. On a good day it stings the flesh with spray and induces waves that lift and crash the kayak along with reckless abandon.

There is nothing new about sea kayaking. The Arctic natives used kayaks to hunt seal, whale and walrus. The Innuited developed the kayak into a finely tuned machine that, in expert hands, could skid across the sea so straight and silently that few surface targets rarely had the opportunity to escape.

By about the Year 2000 BC the Paleo-Aleuts had made a boat from seal skin, wood and whale bone which, for its' size, was already without equal in speed or grace, in weight, simplicity or style and by the time the Innuited entered the literature of the Western World towards the end of 16th Century, their design and handling were peerless.

On its' own, this long sleek craft is beautiful to behold. But then put man and kayak together and something magical occurs. Suddenly the kayak becomes the seated extension of the man and is its' dynamic, its' soul, its' very existence. What is more, the kayak length was made exactly three times the owners height and all the ratios between kayak and man make sound mathematical sense. How do we account for this?

Either the Innuited had a flair for mathematical proportions at least equal to that of Megalithic 'astronomers' of Britain and France who were his Stone Age contemporaries, or he was a man of artistic genius. In my opinion it seems fairly obvious that since he had neither the 'logical' approach nor the fingers and toes enough to convert in excess of 20 without 'borrowing' another man, the kayak must have been an artistic



carpeted by huge blubbery brown bodies of thousands of walrus.

sea

craft and those mathematically exact proportions were based simply on the aesthetic principle that what looked good was good. But the joy he derived from making a kayak was nothing compared to the pure delight he got out of using it, ~ and this explains the appeal that sea kayaking has for modern world citizens who have taken up sea kayaking as a recreational activity.

There are many similarities between the early Inuit paddlers and paddlers today. Preparation is all important. The right gear and the knowledge of how to use it. The Inuit really had to get this right, as to not do so courted certain disaster. From an early age they were taught by their fathers and uncles how to build and how to use kayaks ~ how to hunt from them and how to survive in them. Today we rely on learning from each other and to this end the British Canoe Union has developed a graduated instructional scheme to assist beginners and to test the more advanced paddler.



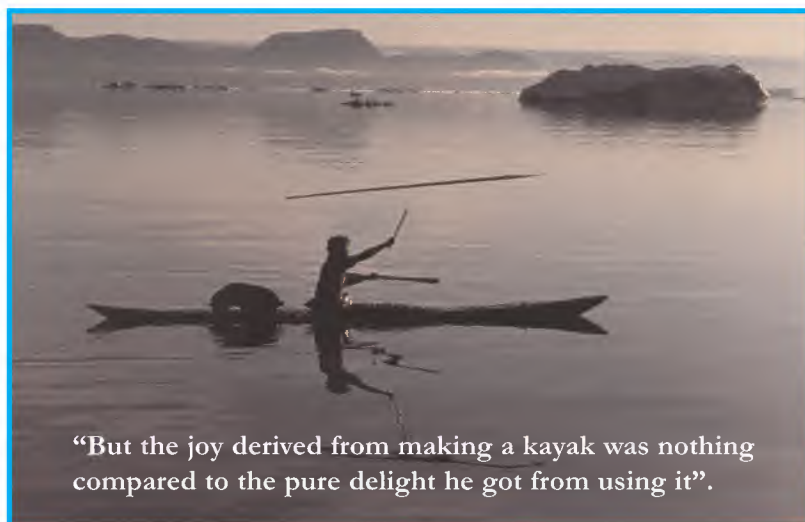
This and the picture below taken off the East coast of Greenland in 1960s

And so we must continue to ensure we retain the respect and understanding of other professional seafarers, in particular H.M.Coastguard, as we pursue our chosen activity. We have developed a range of skills and awareness that should ensure that we rely on management rather than on luck. Safety, knowl-

edge and common sense is how we avoid most incidents. I say 'most' as sea kayaking, like many other outdoor activities, carries with it some risk. This is why most of us enjoy it. Hopefully this book will provide some of the knowledge. The rest is up to you

So how adventurous can we be?

Does being so safe put a brake on our activities? Certainly not. The catalogue of sea kayaking expeditions grows more impressive year by year - around Cape Horn, across the North sea, through the Gulf of Corryvreckin or



"But the joy derived from making a kayak was nothing compared to the pure delight he got from using it".

the sounds among the Fame Islands in a storm, circumnavigation of Britain, New Zealand and even Australia, attempts to journey from England to Australia and Peter Brays successful kayak journey from Canada to Ireland, -all these expeditions and many more have been undertaken in recent years.

My book sets out to give you an insight into what sea kayaking is about. Like all those who go down to the sea again, it is imperative that due consideration be given to such as meteorology, navigation, seamanship, safety. 'In a One Seat Canoe, you are Skipper and Crew' -so the song goes and though the scale is small, an advanced paddler needs to know what he or she is about, just as does the skipper of a large ocean going vessel.

CHAPTER ONE

HISTORY OF MODERN SEA KAYAKS AND KAYAKING

WHAT IS A SEA KAYAK?

The terms 'canoe' and 'kayak' are occasionally confused. Those found on the west coast of America were called 'baidarka', a Russian word for small craft. The 'Umiak' is a large sea going canoe. One way of understanding the difference is to realise that all kayaks are canoes but not all canoes are kayaks, although Baidarkas are kayaks. Clear? Good! One dictionary definition states that a canoe is a light slender boat with pointed ends, propelled by paddles (or poles or sails) and it defines the kayak as a watertight Eskimo canoe made of skins stretched over a light wooden frame and having a deck covering that closes around the waist of the paddler.

The term 'Eskimo' is said to be a derogatory reference by inland native Americans to 'Those who eat raw meat'. The preferred term now is 'Inuit' which means 'the people' and refers to all the Arctic peoples.

Hence, the generic term is canoe and kayaks are canoes that are decked and consequently have cockpits. Arima, in his study, *'The Contextual Study of the Caribou Eskimo Kayak'* defines kayaks as completely decked, normally single-manned, skin covered water craft intended principally for hunting sea mammals, water fowl and caribou and known historically among the Inuit.

KAYAK is an Inuit word for a hunting boat, used at first only in Greenland and Alaska. The word has no connection with the Arabic CAIQUE (from the Turkish KAIK) but is a pure Inuit word. Although the term 'kayak' has a wider meaning today, it is properly applied only to Inuit craft. Although the term Kayak has a wider meaning today, it is really only properly applied to the craft used by the Inuit. There are many Inuit kayak designs -- the Caribou, Beaufort, Baffin Land, Greenland, Alaskan, Koryak and Chukchi being some of them.

Here is an interesting quote from a passage written by HANS EGEDE in 1745.

'Now as to the Greenland boats, there are two sorts of them; the one which the men alone use, is a small vessel, sharp and pointed at both ends, three fathoms in length and at most but three quarters of a yard broad with a round hole in the midst just large enough for a mans' body to enter it and sit down in it; the inside of the boat is made of thin rafts tacked together with the sinews of animals, and the outside is covered with seal-skins, dressed and without hair; no more than one can sit in it, who fastens it so tight round his waist, that no water can penetrate it They do not fear to venture out in them in the greatest storms though they may happen to be upset yet they easily raise themselves again with their paddles; but if they are upset unawares (as it often happens) and the boat be not close and tight about their waist, they are inevitably drowned'.

I must also quote from another writer who recorded in 1782 that,..... ***“ a canoe, taken at sea with an Indian man in it, about the beginning of this century. He was brought alive to Aberdeen, but died soon after his arrival, and could give no account of himself. He is supposed to have come from the Labradore coast and to have lost his way at sea”*** This Kayak is now housed in a museum in Aberdeen.

Form, variable as it is, may be described as typically long and narrow and proportionally long, (typically 1:6 to 1:8) sharp ended in top outline and low sided with a manhole (cockpit) just aft amidships. Craft with two and even three manholes were sometimes made in the Aleutian Islands, Pacific Alaska and the Belcher Islands (two holes only, built after encouragement from none Inuit influences

post WW2) in south east Hudson Bay. These two and three hole craft from the Aleutian and Alaska were introduced to meet the needs of the colonising Russians

The hull bottom may be round (multi-chine), flat or slightly 'V' in cross section while the deck may be flat or ridged. The cockpit coaming or hoop could be level or tilted upwards at the front, attached outside the cover in 'floating' fashion or inside it. End form was highly variable from pronounced rake to none; height that is level or rising or falling from the main body and often with hand grips in the form of projections, notches or holes.

Framework construction was of wood and bone, pegged and lashed together. The principal members were a pair of sturdy gunwale planks of rectangular section, joined at the ends and spread in-between by cross beams over which was usually a single longitudinal deck stringer

Construction was generally light, ranging from 35 to 120 pounds. Dimensions varied widely as well, going from 9 feet to over 28 feet in length and from 15 to 38 inches wide. Most kayaks fell between 15 to 26 feet in length and between 17 to 29 inches in width.

The kayak was made to speed across the water, usually by the use of double bladed paddles. A single paddle was also used, notably in Alaska.

Designed primarily for hunting using harpoons, darts and lances, most kayaks were built for speed to overtake game. The consequent limited stability and carrying capacity made their use for transportation quite secondary. The kayaks lateral stability was countered by rafting together two or more kayaks to cope with rough conditions, capsizes and for ferrying materials. The real answer to coping with such 'tippy' craft was to master kayaking techniques including the Eskimo Roll. Historically rolling was not a technique universal in the repertoire of the early Inuit paddlers. It became more common in Southern Greenland.

To the Inuit the kayak and kayaking had considerable conceptual, emotional and social significance as well as economic importance. It is difficult to conceive the cultures of the Inuit without the sea kayak and the use they made of it.

ORIGINS OF THE SEA KAYAK

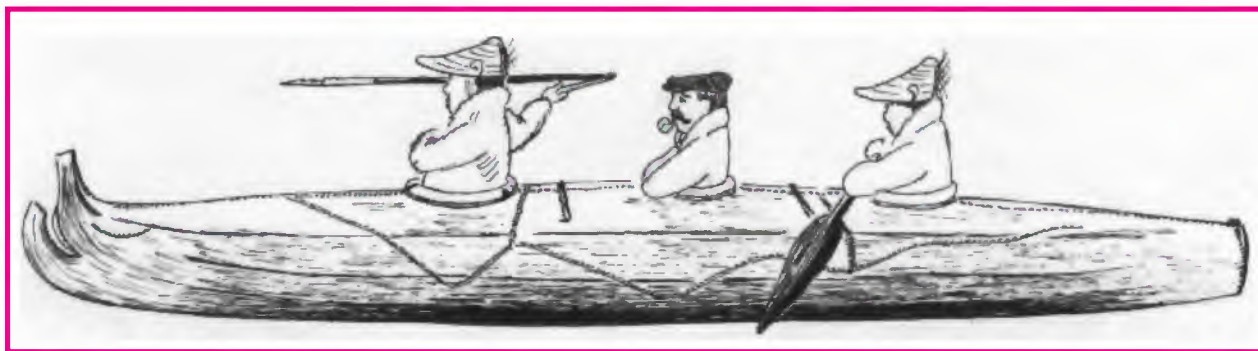
To trace the origins of sea kayaks one has to trace the history of the Inuit .There is evidence to suggest that traces of the original Inuit culture lie hidden north of north-eastern Siberia under ice-filled waters of the Arctic Ocean.

It has been reasonably established that the Inuit, probably under pressure from migrations from the south, left Asia and crossed the Bering Strait to Alaska about 6,000 years ago, a branch of them spread to the Aleutian Islands off the south-west coast of present day Alaska and there established their own special culture in which the kayak had a very special place. It is said that the Inuit multi-family grouping, based as it was on sibling relationships, was dependent on a set of major artifacts of which the primary one was the kayak.



'Towards his (a boys') tenth year he (the father) provides him with a kayak to practice rowing, over-setting and rising, in company with other boys. In his fifteenth or sixteenth year he must go out with his father to catch seals. The first seal he takes is consecrated to make a festivity and from that very day the females begin to think of finding him a bride. But the poor wretch that cannot catch seals is despised to the last degree'. (From the 'Contextual Study of the Caribou Eskimo Kayak' by Eugene Arima).

The bulk of the Inuit migrated inland through the tundra of northern Alaska and northern Canada to Hudson Bay. (Read 'ALASKA' by James Michener.) Since the migration of the caribou herds are roughly north-south, these early Inuit may even have entered the forest belt further south only to clash with Indians who would have forced them back northward to the Arctic coasts.



The Inuit occupied the coasts between Coronation Gulf and Boothia Peninsula and their implements under went adaptation to allow hunting on ice. We are now on surer ground since this is the period of the Cape Dorset culture.

The Inuit then spread east to Baffin Island and back to Alaska. In the region around Point Barrow, Northern Alaska, under the influence of even richer whale and walrus herds, a new culture evolved based upon the hunting of aquatic animals from umiak and kayak, and it passed through a period of unequalled prosperity.

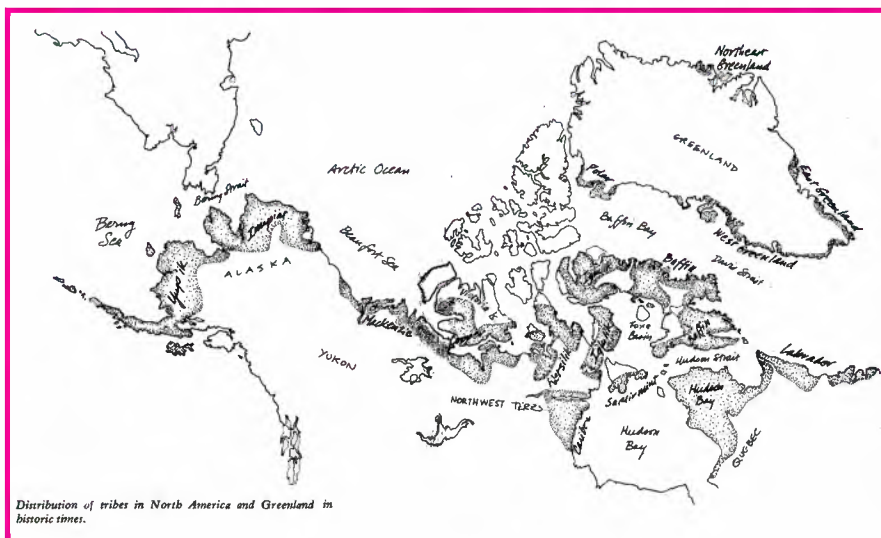
This new vigorous and wealthy culture was known as the THULE culture. It spread to the coasts of the Bering Sea and even across the Bering Strait to re-occupy a corner of their ancestral home, Siberia. It spread through several waves of migration, eastwards through the Northwest Passage to Hudson Bay and Labrador; north to Baffin Island and right over to Greenland to settle in the north-east of Greenland where they were to die out due to worsening climatic conditions maybe as early as 1,000 AD. Several subsequent waves passed through Thule in the north west of Greenland and the western and south-western coasts of Greenland with its' rich sealing, became one of the true homes of the Inuit. The last migration wave almost certainly over-ran the dying out Norse settlers when trading ships from Norway or the Bergen failed to supply them, circa 13th century.

Now the Inuit are divided into three groups. There is the EASTERN INUIT which include the Eastern Greenlanders, the Western Greenlanders and the Polar Inuit whose culture descends from late phases of the Thule Culture. There is the CENTRAL INUIT who culture is a recent adaptation of the original inland culture and there is the WESTERN INUIT which consists of the Mackenzie and Alaskan tribes, including the Aleut.

Everything about the Inuit, their appearance; the way they live and even the way they think and feel is largely determined by the extreme Arctic conditions under which they live. I can only recommend that you take time out to learn more of these wonderful people who designed and developed the forerunner of our modern day sea kayak. You will find several useful books listed in the Bibliography at the back of this book. Dog sleds as used for transport and how this is achieved also makes for fascinating reading.

There is one place in the Inuit world where dog sleds are not known at all. This is the southern tip of Greenland where the sea does not freeze all the year round. Here the UMIAK is used for transportation. The umiak is a large deep boat made of one or two layers of sealskin or walrus hide, tightened over a framework of wood and whalebone. It is rowed with regular oars and it is usually rowed by women. The umiak has always been thought of as a regular feature of the Inuit, yet it is not really common except in the two extremes of Inuit country, viz. Alaska where it is used for whaling and in south Greenland. In fact one of the most beautiful Umiak remains were found in Perryland, NE Greenland.

Historically these craft were often used for whale hunting when they would be crewed by the men using their kayak paddles as a single paddle, i.e. one blade only. There is evidence that they made their own 'dry suits' from pieces of sealskin. Nothing much new in the world!



The performance of these large skin boats is a delight, they float like giant birds on the waves and take no water except for a little spray from the waves. Even this could add up considerably if it were not for the escort of the kayakers. On a journey the umiak is often surrounded by kayakers like a battleship surrounded by destroyers. Empty kayakers would, in the event of rough weather, be lashed to the sheer of the Umiaks on both sides which would have the effect of raising the freeboard so deflecting waves and adding to stability.

But what of the origins of the sea kayakers themselves?

In the chain of food where so many animals that were competing with him were either faster or a good deal stronger, the Inuits' only hope of survival lay in directing all his talents on the weakness of his quarry. Now this presented the Inuit with no great problem as far as land animals were concerned, for these could be caught with snares, traps, nets or tricks of one sort or another; but those whose natural element was the sea were a tougher proposition. To get on terms with them he needed a boat, a one-man floating armoury that could skid across the sea so arrow straight and silently that a surface target had a fair chance of being captured.

By about the Year 2000 BC the Palaeo-Aleuts had made a boat from skin, wood and bone which, for its size, was already without equal in speed or grace, weight, simplicity or style. By the time the Inuit entered the literature of the western world towards the end of the 16th Century, its' design and the techniques of using it were extremely well advanced.

Naturally, this had greatly impressed the early explorers and some had even gone to the trouble of measuring the kayak in the hope of discovering the secret of its speed; but no amount of measuring can describe a work of art, for the harmony of shape and line which is so pleasing to the eye is in its' structure as a whole. These early explorers had, in any case, failed to realise that all measurements take on a new relationship when kayak and man are one. With the hem of his waterproof anorak (kamlika) tied tightly around the coaming of the kayak cockpit and around his wrists and face, he would feel

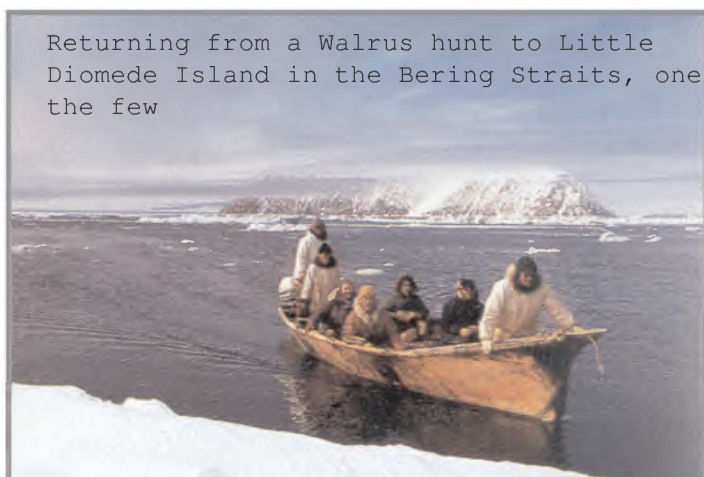
united with the sea. If he capsized he could right himself by skillful movement of his paddles, or if this was lost he could use his harpoon and some men could use their hands alone to regain balance. All his gear, harpoon, line, lance and knife and the sealskin bladder (avataq), were carried on deck under thongs of skin.

On the coast of Greenland, where the kayak was used mainly for hunting seals, a special stand on which the harpoon line lay coiled sat on the foredeck within arms' length and midway between the stand and the bow of the kayak a white screen was set square rigged like a sail. This was his camouflage which allowed him to close up on the short-sighted seal.

Hunters today use the gun which is carried in a sheath on the foredeck; while his spare sweater and socks, his primus stove and the waterproof bag in which he carries his tea, sugar and hard tack biscuits are stuffed into the tiny space just behind the seat. Thus equipped he can paddle away alone or with others to hunt and so keep himself and family fed.

EARLY KAYAK CONSTRUCTION

The construction of a kayak was a communal affair, both men and women contributing their particular talents. The building and eventual shape of the kayak was determined by local preferences, traditions, available materials and tools, together with the prevailing sea and hunting conditions.



Returning from a Walrus hunt to Little Diomedes Island in the Bering Straits, one of the few

The making of a kayak was supervised by an expert builder. He would have the form of the kayak in his mind and could calculate the various measurements with his hands and arms. As he walked or paddled along the beaches looking for driftwood he assessed just how each piece might fit into his plan. Many builders stored their designs and measurements on lengths of wood which they used as measuring sticks. By the use of notches they recorded signs to measure various parts of a kayak.

There were gunwales, stringers and ribs. The builder often collected more material than was needed, thereby making allowances for errors. The whole task might take a year.

The first step was shaping and smoothing the two gunwale pieces that gave the kayak frame its' strength. The ends were fastened together and the gunwales were then sprung apart to establish the actual shape of the kayak. This form was made permanent by mortising deck beams between the gunwales; straight across if a flat deck was intended or slightly curved to give the deck a camber that would readily drain any water.

Towards the centre of the kayak a humped deck beam, known as the 'masik', was inserted to support the front edge of the cockpit coaming. The deck frame was turned over and rested on supports. Next came the shaping of the ribs before mortising their ends into holes in the underside of the gunwales. These ribs were of split cedar or spruce which was softened in hot water to allow bending. Sometimes green willow withes were used that required no such soaking. It was the rib curve that gave the kayak either a rounded bottom for speed or a flat bottom for stability.

With all the ribs in position, a keelson was laced to each rib outside the frame, curved from bow to stem, -the profile varying from region to region. Further stringers were laced outside the ribs to fill out the kayaks' particular local form and to increase its' longitudinal strength.

There was enormous variety in the shaping of bow and stem; design distinctions that affected the behaviour of the kayak in the water and gave it a recognisable local character.

In some kayaks the keelson simply curved upward to join the gunwale ends in a sharp point. In others the gunwales, keelson and stringers were joined at each end into curved bow and stern pieces.

The kayak was now righted and the cockpit hoop tied into position. This framing was circular, oval, 'D' shaped or essentially triangular with rounded comers. It might be raised upwards at the front, or it might lie level with the deck. In many cases giving a raised front to the cockpit actually made for easier access to the kayak by the paddler.

As the frame neared completion the women began to prepare the sealskins that would cover it by scraping and curing the skins. The skins were matched and trimmed to size before being chewed at the edges to allow them to be sewn together with threads of animal sinew. . When different animal sinews were available then these sinews were used within the kayak construction so that best use was made of their characteristics.

Working as a group around the wet skins, the women sewed them into one long sheet with over-lapping seams and blind stitching. This sheet of skins was then draped over the upturned kayak and drawn tight over the stringers and around the gunwale. The long edges were pulled together over fore and after decks with a cross thronging. Nimble fingers sewed rapidly before the skins had chance to dry and consequently shrink to provide a drum-tight, water tight and hard 'shell' within a few hours.

This sealskin sheath seldom lasted more than one season. When ice locked the sea the skin covering was replaced. It was at this time that the Inuit made the accessories and hunting tools. Many of the old implements reveal an exquisite artistry in utilitarian forms; work which would have taken many months to complete with their Stone Age tools.

THE HISTORICAL USE OF KAYAKS

The kayak was a source of pride to the hunter who owned it. It proved that he was capable of acquiring the necessary raw materials and mustering the necessary help from the community to build it. To the family it was an economic necessity as it was the means of obtaining their food and clothing.

The paddlers seat in most kayaks consisted of a portion of skin with fur attached. Sometimes this was supported by a few short thin battens laced loosely together. In some areas the seat battens were lashed to the ribs of the kayak. These and the fur seat were as long as the paddlers legs. No back rest was known to have been used.

The kayak was usually entered by floating the kayak by a low bank and stepping into it having first wiped the foot quite clean. The body is steadied and the other foot is also wiped and placed into the kayak. The paddler then slides downwards and works his legs under the deck until he is seated with his hips in the cockpit. Getting out of the kayak is almost the reverse of this process. Great care is taken to avoid any dirt getting into the kayak as this would get between the frame and the skin and rub holes in it.

The practice of entering the kayak ashore and throwing the kayak and paddler into the water, undoubtedly very rare, is said to have been the method of getting onto the water in King Island and parts of Greenland. Alaskan and Greenland hunters would often raft up together in order to rest in rough weather, using their paddles and sometimes their deck straps to secure the 'raft'. This is something we ourselves often do when stopping for a break. It is essential to prevent the kayaks knocking together, a problem in bigger seas. Many kayakers using narrow models laid the paddles athwartships across the

deck to help steady the kayak when resting or throwing a weapon.

The method whereby a paddler was able to right a capsized kayak whilst still in the cockpit (rolling) was used by the King Islanders, some Aleuts and the Greenlanders. The use of rolling was not new in that we know it was fairly wide spread among the Baffin Island kayakers. It was said they would roll intentionally to avoid a particularly large wave which might have had the affect of breaking the kayakers back.

The proper use of the kayak is dependent on a highly developed sense of balance and a series of continuous, unconscious counter movements necessitated by the impact of wind and sea. To this must be added an intimate knowledge of how to handle the kayak and right it if it capsized. The kayaker had to know each individual kayak in order to use it properly. Many years of training went into mastering the difficult art of kayaking. Training begins on the shore whilst still a boy; later he begins to kayak in sheltered waters, and is finally taken by his father on the open water.

The skill is kept up by the daily hunting expeditions, and if the kayaker gets off form on account of a long period of illness or through months of ice covered waters, his first few expeditions would usually entail great risks. The so-called 'kayak vertigo' may suddenly seize the expert kayakers who would lose his balance and feel fear. If he goes to sea in spite of his 'vertigo' he may well have been drowned. Many a 'fauger' has died in this way or has had to stay on dry land for the rest of his days, no matter how poor and miserable his families' condition must have become as a consequence.

On the southerly shores of Greenland the kayak was the only vessel which could be manoeuvred among the ice floes and was light enough to be carried over the floes when the water froze over.

The frailness of the kayak was due to the vulnerability of the skin cover. Razor sharp new ice would easily destroy the skin beyond repair. Blubber was always taken along in the kayak so that holes could be plugged. Before the Eskimos took to the water, their frail little boats were always checked and work of maintenance was carried out with the most meticulous care. It was, after all, a matter of life and death, and even the smallest defect had to be mended on time.

It was deemed important to keep not only the kayak itself in good repair, but also the equipment that went with it. The weapons and implements each had their special places on the kayak so that the 'fauger' could grasp them almost blindly. These were held to the decks by means of cross straps of leather.

In front of the cockpit was the harpoon line rack. This was a three-legged stool with a tray on top on which a harpoon line was carefully coiled. The line was made from the skin of the Bearded Seal, by cutting up the skin continuously around the animal so that a one-piece cord was the result. One end of the harpoon line was fastened to the bladder float which was within reach, just behind the cockpit, so that the kayaker could quickly throw it into the sea. The other end of the line was attached to the harpoon head on the shaft. Most kayakers owned two harpoons, but only one was brought along at a time, carried on the kayak deck to the paddlers right, (or left for a left handed paddler). One harpoon was of the long knob type, the other was the somewhat shorter winged harpoon. To his left lay the bladder dart which was a light throwing spear varying in length from about one and a half to two metres.

The bladder dart was provided with a long head with one or perhaps two barbs. Towards the tail end the dart had a bladder made from the throat of a bird or seal to tire the game out, especially if the seal hunt was a joint enterprise. The hunter would also use it if he was trying to catch small seals on his own. Like the harpoon, it was thrown by means of a throwing board, and thanks to the bladder it was given a rotary motion.

Nearer the hunter, but to his left, was the bird dart. This was a light weapon, about one and a half metres

in length, characterised by its' long head with only one barb. About one metre from the point the dart was provided with three or four side prongs with several barbs on the inner sides. In a sense, this is the forerunner of the shot cartridge technique. The target is the bird (whether it is on the water or in the air) but in any case it is not very large. If the point of the dart does not hit the bird directly, the side prongs of the shaft may get hold of its wings or neck and force it down. Much imagination has gone into the creation of this weapon. It is also thrown by means of a throwing board and is placed in front of the kayaker, perhaps under the nearest deck strap. To the left of the bird dart, is the small lance, the hunting knife and the kayak scraper, which was used for removing the ice that could quickly cover the boat.

Behind the kayaker, next to the bladder float is the big lance. This is about two metres long and sturdy, consisting of a wooden shaft of one and a half metres long, to which is lashed a bone head of about 50 cms, ending in a blade, usually of forged iron. The big lance was usually placed to the left of the hunter in order not to become tangled with the bladder float which must be ready to go overboard. The crucial moment for the hunter comes when he must throw out the bladder float after the harpoon has been thrown, and see to it that the harpoon line comes free of the kayak rack, at the same time keeping his balance with the paddle in his left hand.

When the seal had been caught and killed, the wounds were sealed with plugs of bone or wood. A knife was used to loosen the skin near the animals head and air blown into the hole before sealing it and tying the seal to the kayak. The air trapped kept the seal afloat. In this way the catch was towed ashore to the settlement. Naturally, there was a limit to the number of seals one single kayak could take in tow, but without doubt four seals at a time were possible, since the killed animals stayed afloat on their own.

There was a famous method of sea otter hunting which employed a 'surround'. Usually six kayaks or more went out together. They formed a generally straight line as they scanned an area. The man who sighted a sea otter immediately raised his paddle vertically above his head and remained stationary. The other kayakers then formed a circle about him. If the otter dived again, the nearest man remained by it. Again, the others formed a circle. The animal seldom remained underwater more than six minutes, less on each successive dive. A light harpoon with a detachable ivory point was cast using a throwing board. The multi-barbed point remained in the animal, but the harpoon shaft floated back to serve as a drag. The point was attached to the harpoon shaft by about four or five metres of sinew line in two places, first, on the lower wood shaft portion and second near the juncture of the wood shaft and single-piece whalebone socket. These two attaching arms of the line formed a 'Y', or martingale. Since the bone piece was heavy, the harpoon floated vertically in the water with the fore-end down, thus serving as a drag on the otter and a marker for the hunters. Once the harpoon was set, the sea otter never escaped. Interestingly, the man whose harpoon point entered closest to the tail received ownership of the animal.

In pre-Russian times the sea otter was an honoured animal, considered by the Aleuts to be of human origin and seldom hunted. Sea otter meat did not taste good and its skin was of limited use. This belief in the human origin of the sea otter did not prevent the Aleuts from hunting them, although they observed many precautions to win the goodwill of the 'person' of the sea otter. Always practical, the Aleuts were more interested in the edible than in the incredible.



A model of a Greenland
Kayak as brought
back by the author
from Greenland

Commercial hunting for furs was initiated by the Russians. It was the most lucrative trade ever known to man. The lowest deckhand on a vessel engaged in this trade had only to survive one voyage and he had earned sufficient to buy an English country estate and never work again!!

Before leaving this chapter of the history and early use of sea kayaks I thought it worth including a short piece on a more recent evolution of the kayak, that of the military canoe.

THE EVOLUTION OF THE MILITARY KAYAK

One of the better known individuals in the British Forces to conceive the idea of using lightweight canoes as a means of attacking the enemy shipping and landing raiding or reconnaissance parties on an enemy held coastline is probably Lt. R.COURTNAY; Royal Engineers.

This does not necessarily make him the first. I believe there were groups based in the south west of England who specialised in running agents in and out of France from ex French fishing vessels somewhat earlier. The 'trick' was to get through the surf and experiments were made using decked and open canoes. It is said that a replica Inuit kayak, similar to those as used by Gino Watkins (of more a little later) was tried but soon discarded after almost drowning several servicemen

In the summer of 1940, this army officer, who before the war had paddled a canoe down the River Nile from Lake Victoria into Egypt, put his idea of using canoeist to the Chief of Combined Operations. His theory was treated with scepticism. Courtney, however, was undaunted and told the Chief of Combined Ops. that he would board a ship in the Clyde undetected and bring back proof of the success of his attack. This he did with a great deal of success. He and a companion boarded the Landing Ship (Infantry) HMS GLENGYLE, and removed gun covers and breech blocks and marked chalk crosses on the side of the ship to represent places where limpet mines would have been placed. Lt.Courtney, clad in swimming trunks, then burst in, without ceremony, upon a high level Naval Conference being held on shore and deposited one of the gun covers in the middle of the table.

After this spectacular demonstration of the soundness of his ideas, Courtney was given permission to train a unit of canoeist. The craft they used was a collapsible British canoe made by the Folbot Company of London. Over 60 years later this type of canoe is still favoured by Special Forces units around the world.

The Folbot Company had gone out of business in 1940 owing to their works being bombed during the London blitz. However, enough canoes were obtained to equip Courtney's unit. The Folbot was approximately 15 feet long, weighed about 50 pounds with a beam of 30 inches. It was made of rubberised canvas on a collapsible wooden frame. It was very fragile, very fast, but having no built-in buoyancy, was prone to readily swamp if capsized. Also, the framework was liable to come apart at the wrong time so the canoes were normally kept assembled with all the joints of the frame secured with insulating tape. With a beam of 30 inches the craft was too large to allow passage fully erected through a submarine's forward torpedo loading hatch. The craft. became known in service jargon as the 'Cockle Mark 1'.

The next step in the evolution of the military canoe was the 'Cockle Mark 1 ** (two star). This canoe incorporated bow, stern and longitudinal buoyancy bags and it had a rigid frame. It was approximately 16 feet in length and had a beam of 2 feet 5 inches and weighed 100 pounds. An adjustable cross member was fitted which allowed the beam to be reduced by 2 inches to allow the craft. to be brought from inside a submarine onto the deck through the torpedo loading hatch. Once on deck the cross member was re-fixed before launching.

As the war progressed, the canoe continued to evolve. The Cockle Mark 2 and Mark2** were craft with a plywood bottom and deck with canvas sides. A strut could be hinged forward to collapse the canoe to a height of 6 inches for stowage. The kayak was designed to be dragged, fully laden, over beaches. It was used in the famous 'Cockleshell Heroes' raid on Bordeaux Harbour in December 1942. It was still in use in the late 1950's.

The 'Cockleshell Mark 3***' was a rigid kayak made of one-eighth of an inch thick plywood which was covered with doped fabric and lined with rubberised stockinet to prevent leaks. It also had two fabric covered wooden outriggers to increase stability. The hull was in three sections, all watertight, with the bow and stem sections filled with table tennis balls for buoyancy. It was 28 feet (8.4m) long with a beam of 30 inches (76.2cm) and a depth of 16 inches (40.6cm).

Incidentally, when the Australian Special Forces were issued with Mark 1 * * canoes, they removed the bow and stem buoyancy bags and replaced them with coconuts. These acted as a flotation aid if the kayak was holed by small arms fire and as emergency rations for the paddlers.

As the war progressed, more and more sophisticated kayaks were designed. The Mark 6 kayak was powered by a 4hp two stroke engine which could move it along at 7 knots in calm conditions as compared with 3 knots under muscle powered Mark 1, 2s and 3s. The Mark 6 had a range of 93 miles at a cruising speed of 5.6 knots. It was 18 feet (5.4m) long. The engine and propeller could be raised on board for beaching and if the engine failed completely it could be removed and thrown over the side and the crew revert to paddle power to complete their mission. This kayak was used very successfully in Burma against the Japanese. It was fitted with Vickers 'K' machine guns.

A Mark 8 and 9 kayak was also designed, built and issued but never used on operations. After the Second World War canoe developments produced light-weight fibreglass craft for use by sports canoeists which proved unsuitable for military use. A military canoe must be strong, reasonably light, able to carry a large amount of stores and equipment and be very stable in rough conditions. It must be capable of being parachuted from an aircraft or launched from a submarine. It must be collapsible and capable of being 'bagged up' and carried on the backs of the crew across country.

In the late 1950's the Klepper Company of Germany started to produce its 'Aerius' model. Although designed and sold as a sailing canoe complete with mast, sails, tiller and lee-boards, with slight modifications it is used all round the world by Special Forces units.

It is approximately 17 feet (5.1m) long, 34¼ inches (87cm) in the beam and 10 ½ inches (27cm) deep. It consists of a collapsible wooden frame covered in skin made up of a rubber and polyester sandwich for the hull with a cotton and hemp deck covering. Inflatable tubes run internally either side from bow to stem. It weighs 59½ pounds (27kg). The measurements given are from the 1959 Klepper catalogue for the civilian version. The Military version is much heavier, having a thicker black skin with blind markings to assist with assembly in the dark. This canoe was used on at least one occasion during the Falklands Campaign in the raid on Pebble Island.

In the eighties a design was considered, comprising fabric covered air tight small diameter tubes which could be inflated to high pressure by a canister or manually by a pump. The whole device and its' war-like load would sink into a kelp bed when a valve on the tubing was released. A floating marker was left in shallows near the shore and the crew would swim for the coast. When the kayak was required, the floating marker, a Coke can perhaps, would have a lanyard attached. The obvious problem of what happened when it was shot at was soon perceived!

MORE RECENT DEVELOPMENTS

I have devoted several pages to the Inuit and their historical use of kayaks and I have given an account of the military use of kayaks in more modern times. I now want to touch on the development of our more recent interest in sea kayaking and some notable events and individuals emerge.

John MacGregor has to be the first name to start with. John had a London-based boat builder construct his first kayak of thin Cedar strake over bent Oak frames in 1865. He named it 'ROB ROY' and this and

Thames, a Club still going strong to this day.

W. Baden-Powell (elder brother to the founder of the SCOUT movement) developed a craft more suited for sailing, though constructed after the style of the Rob Roy. Making voyages in Sweden and the Baltic in 1870 and 1871. From this time the design of paddling and sailing canoes diverged until they were constructed on entirely different lines.

By 1882 the sailing canoes had a deck seat and tiller whilst the sail area increased the cockpit grew smaller and smaller. Watertight bulkheads were fitted. Then in 1887 an American invented the sliding outrigger seat which allowed the canoeist to sit out to windward to balance the wind pressure on the sail.

THE DEVELOPMENT OF SEA KAYAKING FROM A BRITISH PERSPECTIVE

Moving on now to the recent developments over the last one hundred years or so and then on to more contemporary times, a lot of which I have been able to be iether aware of as developments ocured or even experience first hand. I have been lucky in that I have lived through such heady times as the sport of sea kayaking has gone from a minority interest to that of a global one attracting thousands over the period of my own involvement, viz. over sixty years.

It is often believed that we in the UK based our early kayaks on the Inuit model. There is much archaeological evidence to demonstrate that canoeing in Britain goes back into pre-history. Skin covered curraghs (type of Irish boat with wooden frame covered over with animal skins) and coracles (small light weight rounded one seat craft traditional to Wales) from the ancient Celtic period have been uncovered during excavations for the building, for example, of canals. Though bearing little resemblance to our modern Inuit style of sea kayak, they do represent the start of the evolution of man propelled water craft in the UK, very much as they did around the rest of the civilising world.

FROM THE CELTS TO MUCH MORE RECENT TIMES.

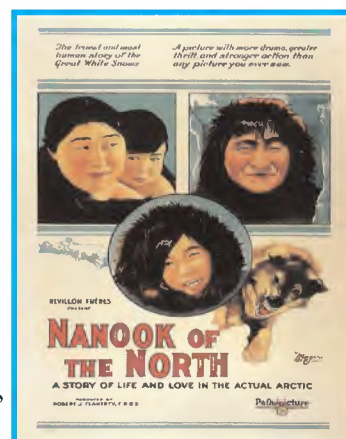
The tradition of long open water and coastal kayaking journeys has always been a feature of our sport. Though most long distance journeys were undertaken in Umiaks as shown on the left The Inuit would often travel long distances in their kayaks as they hunted for seal (or in their search for brides from other coastal Inuit communities, often in big seas- (have a look at the film, 'Nanook of the North', 1922 – to be found on Utube), .



Channel Islands.

In the 19th and 20th Century these long trips have been emulated by European paddlers as they pushed the boundaries of open water recreational kayaking; this time to pursue adventure and exploration rather than sustenance – or brides!

Among the first known recreational craft that can be described as a kayak comes to our notice in 1830 when a Mr. Canham, a London based engineer, paddled from France to the



A description of his craft appeared in a newspaper of the time and reads as follows, “*much like an Icelanders ‘caiak’, consisting of a light weight wooden framework some 10ft by 2ft, covered with tarred canvas. At one end was a receptacle for containing provisions and at the other, one for holding Congrave rockets, to be used in case of ship wreck. Each gunwale had attached to it a long thin bag filled with bladders to aid stability. The owner, sitting in the centre, was protected from spray by a covering of tarred canvas*”

So not much is that new after all!

In 1865 a Scot, John MacGregor, had a wooden lapstrake* kayak built, reputedly modelled on native canoes of North America and Alaska. It was 15ft long and 28ins wide and 9ins deep. It weighed 80 pounds. He named it ‘Rob Roy’. An unfeathered 7ft paddle and a lug sail (The lugsail is an evolved version of the classical square sail. In both rigs, the upper side of the sail is attached to a spar, or yard, which is hoisted up the mast by a rope) and jib were the two methods of propulsion. John



MacGregor went on to write accounts of his journeys and the first of these he called, ‘*A Thousand Miles In The Rob Roy Canoe*’. This book did a lot to encourage canoeing in Britain at the time. With other like minded spirits John MacGregor started the Canoe Club on the banks of the River Thames in London in 1866. Soon afterwards the Prince Of Wales became the club’s commodore and the Canoe Club became the Royal Canoe Club. To this day it continues as a popular and active club.

In 1873 the Clyde Canoe Club was formed and I have copies of reports of some truly fascinating sea kayaking trips off the west coast of Scotland, many of which I have published in the ASKC (Advanced Sea Kayak Club, now the International Sea Kayak Association) newsletter. The Scottish Hostellers Canoe Club flourished before WW2. They are known to have had specifications for Life Jackets before 1950, as well as their own sea kayak design, safety rules and recommendations, some of which exceed the current British Standards document. We know their members paddled extensively in Ireland and Norway as well as, of course, along their own beautiful coast in Scotland.

Before the Second World War, lath and canvass kayaks were often built by paddlers themselves, -usually using plans bought from commercial designers. There were few manufacturers as kayaks were expensive to produce commercially as they were labour intensive and thus beyond the pocket of most young folk. Also few had their own transport or, indeed, long holidays. So, unless they lived by the sea they were limited to either folding kayaks (particularly expensive) or short kayaks that would fit in the freight compartment of the train. Post war saw the advent of new materials being employed to make kayaks. Marine ply was incorporated into some designs whose seams could be readily stitched and re-inforced with Glass Reinforced Plastic (GRP). Kits and the finished boats came on the market. At last it was possible to construct a marine ply kayak that did not leak at the seams.

We must not overlook the development of kayaks once G.R.P. together with other revolutionary new products such as Kevlar came on the scene. Kayak and canoe moulds became available for keen paddlers to make their own from GRP. My first prized new slalom kayak was from Dave Patrick (P &H) who turned these kayaks out from his garage at home. I even went into production myself and the problems we had over which mould belonged to which designer was manifest!

*Lapstrake refers to the method of attaching planks to the frame by lapping one edge over another as opposed to butting their edges together. Sometimes referred to as ‘clinker built’.

Together with new production techniques (roto-moulding, etc), it became possible to construct near replicas of Eskimo kayaks in a strong, durable and easily repairable material that we take so much for granted today. It was in 1960 that we saw the first commercial GRP sea kayaks and much development has taken place leading up to the plastic polyethylene roto-moulded sea kayaks that are now in full production.

I could go on to elaborate on other canoeing exploits in the 19th Century. Suffice to say that the Scots undertook some remarkable and pioneering trips. A visit to the north west coast of Scotland will make it clear why; this area is a mecca for sea kayaking.

Just before leaping ahead to discuss the developments in the 20th Century I will mention that in 1887 the British Canoe Association was formed and though it only lasted thirty years it was the embryonic start of the forming of the British Canoe Union (BCU), of which more later.

In moving to the 1900s I recognise that I do grave injustice to the many other pioneering individuals of the 19th Century and their exploits. They did much to lay the foundation of many equally innovative exploits that occurred in this, the 20th and 21st Century. Again the Scottish paddlers led the way. Also the advent of folding kayaks and more available time and money led to the sport becoming so much more available, particularly between the two world wars.

Apart from improvements in kayak and paddle design and other relevant equipment, one of the most important safety factors when undertaking long open water crossings was not only an ability to paddle with skill and endurance, but also to be able to roll, first time, every time. The 'Eskimo Roll' was introduced to Britain by an Austrian, H. W. Pawlata in 1927 and until a few years ago his technique, in reality the standard Greenland roll modified for feathered paddles and whereby the paddle is extended prior to rolling, was taught to beginners. Now we, or at least many of us, start by teaching the 'screw roll', i.e. no prior extension of the paddles by gripping low at one end of the shaft in order to gain extra leverage. Teach as you mean the paddler to go on is the maxim.

For me one personality stands out, that of Gino Watkins. In 1930 he led the British Arctic Air Route Expedition to Greenland. He and his team obtained kayaks from the local Inuit who taught them how to use these craft. Gino became very adept at using his kayak and was able to provide much of the fresh seal and fish to feed his group. He returned to Greenland in 1932 to continue his survey work for the air route over the Arctic and whilst out hunting met his untimely death. His body was never recovered but his kayak lies in a corridor at the Royal Geographical Society building in London. I have often campaigned for its proper location and preservation but there it lies, hardly in state.



You may think that Peter Brays' crossing of the Atlantic from St Johns to Ireland in 2001 was remarkable, as indeed it was. But in 1928 Franz Romer set out alone from Portugal, travelling 4,000 miles, spending 58 days continuously at sea before landing at Puerto Rico. Perhaps you may have heard of Oskar Speck. For the longest time his story went untold but his journey by kayak remains one of the longest at over 30,000 miles. He left Germany in 1932 and



paddled to Australia, arriving there in 1939. He was met by the police who, after congratulating him, promptly arranged for his internment. World War Two had just started. Speck used a wooden framed 'Folboat' double kayak.



Oscar Speck



Another legendary journey and one by which all open water expeditions by kayak are measured is probably that done by Hannes Lindemann when he crossed the Atlantic in 1956. While he was not the first to make such a crossing, his book, 'Alone At Sea', caught

the imagination of many. His trip from the Canary Islands to the Bahamas took 72 days. It was quite a feat of survival. He used a 17 ft folding Klepper Aeriuss double kayak. (A folding kayak with wooden frame and covered with canvas as made by Klepper of Rosenheim in Germany).

Now I realise that Speck's and Lindemann's exploits were not British but any history of kayaking should not, in my opinion, fail to mention them.

In 1970 Geoff Hunter, an old paddling buddy of mine, almost circumnavigated Britain in his self made Ammassalik kayak. I say almost as he cut through the middle of Scotland rather than go round the northern end of Scotland and encountering the wrath of Cape Wrath. Geoff stayed at the home of my parents the night before he attempted to cross the Solway Firth, the twenty mile or so stretch of water separating



Klepper Aeriuss Quattro XT in military colors

Scotland from England on the west coast.

Within sight of the English coast Geoff became separated from his kayak and clung to a buoy for many hours before swimming to the English coast. Once

recovered, he borrowed another Ammassalik kayak from Ian Bourn and went on to complete his trip to Maidstone, his departure town on the south coast. His subsequent book, 'Ammassalik Round Britain' became a popular read and probably inspired Paul Caffyn and Nigel Dennis to complete their circumnavigation of mainland Britain in 1980 in 85 days and subsequently Bill Taylor et al to go on and complete their circumnav-

igation of mainland Britain and Ireland in 1986.

Before focussing on the development of sea kayaking in the UK I will add a few further names and their exploits to the list of 'interesting' kayaking journeys.

In 1975 Derek Hutchinson and team attempted to cross the North Sea, west to east. A crossing not without epicI know, I was there.

In 1977 Frank Goodman et al rounded Cape Horn. In the same year Geoff Hunter and Nigel Foster went round Iceland. In 1981 Nigel went on to paddle from Baffin Island to Labrador, this trip also was not without incident as he came to grief at the south end of his Hudson Bay crossing. It is a fascinating tale of survival and good fortune.

In the same year I went to the Bering Sea with two buddies to circumnavigate Nunivak Island. Another paddling story; if only I had the space.

The list of 'interesting' kayak journeys goes on as boundaries are pushed outwards. South Georgia, Bass Strait, Gulf of Carpentaria; these are the venues of fairly recent expeditions that come to mind as are Australia to New Zealand in 2007 and the circumnavigation of Madagascar, 5000Km in 12 months.



Dr. Hannes Lindeann Standing Next to the Folding Boat He Crossed the Atlantic Ocean

These expeditions continue to fuel an even greater interest in sea kayaking as more and more clubs, schools, organisations and individuals take up the sea kayaking challenge. Many years ago I led a small group towards Fingal's Cave off the west coast of Scotland. I was extolling the fact that we were enjoying an activity yet to be discovered. Hardly had I got the words out of my mouth when 20 or so kayaks appeared from around the headland also making their way to the Cave which soon became rather crushed with kayaks; a sign of things to come.

We have moved on from a small clique of paddlers all known to each other to a huge number of ever increasing paddlers. Long may this continue.

Along with this increasing attraction and interest we have seen a plethora of kayak designs with improvement to kit such as paddles, hatches, rudders, PFDs, camping gear. Watching the docudrama of Scot and the Antarctic I am never failed to be amazed at the gear they had to use, all state of the art for the period but light weight and reliable it was not. We have come a long way thanks to the progress of technology. My first paddle across the English Channel (a distance of +/- 20 nautical miles between England and France) was done in a slalom type touring kayak with a skeg held in place with a shock cord. No bulkheads, no pumps and little directional stability. Sponges sufficed to keep the kayak dry-ish. Improvisation was the order of the day. I kept my flares dry by keeping them enclosed in a length of plastic plumbing pipe and used dry bags to keep kit dry-ish. Now we have a huge choice of kayaks fitted out with electric pumps, GPS navigation and equipment that remains truly water proof. Cell phones in particular have made a big improvement over the recent years as they are more reliable and have features like navigation and cameras. All far removed from the 'good old days'.

Earlier on I mentioned the birth of the British Canoe Union; said it was initially the formation of the British Canoe Association in 1887. Though this Association lapsed it was reborn in 1933 when it merged with the Canoeing Section of the Camping Club Of Great Britain. The problem with this arrangement was that being merely a section of an organisation that's main interest was not canoeing, the international canoeing fraternity did not consider it worthy of recognition as a national governing body

for the sport and consequently would not accept it into affiliation. Only by being affiliated to the international body would it be recognised by the Olympic Games Committee. So in March of 1936 nearly all the big canoe clubs and organisations met in London to agree on the establishment of the British Canoe Union; thus allowing British paddlers to compete in the 1936 Olympic Games. It was not until 1978 that it was agreed to form a federal structure to allow for the Scottish, Welsh and Irish Canoeing Associations; so defining the constitutional structure of the BCU for the next 20 years. Currently the BCU Ltd.

Runs with representation from the Scottish and Northern Irish Associations together with Canoe Wales and Canoe England; this

process is still evolving. I hope this is all clear as there will be questions later!!

One of the most important contributions to canoe sport from the early BCU was the introduction of a coaching scheme. This provided a comprehensive syllabus of skills and knowledge combined with a series of tests and awards to take a paddler from novice to senior coach. It made for a progressive learning and teaching structure which encouraged the sport to flourish at all levels, be it recreational or competitive, with an appropriate balance between adventure and safety. The BCU Coaching Handbook became the bible. I sometimes think we are caught up with our own success as I firmly believe the BCU should remain within its own geographical boundaries and encourage other national governing bodies around the world to devise their own coaching scheme, albeit based on that of the BCU should they so wish. I digress.



There have been books on canoeing that included chapters of sea kayaking going well back. Alan Byde's book, 'Living Canoeing' was an early inspiration to me as was such as 'A Thousand Miles In The Rob Roy' and 'The Rob Roy On The Jordan', both by John MacGregor. As far as I know the first book devoted entirely to sea kayaking was mine. I called it 'Sea Touring' and first published it in 1976. This was an attempt to bring together a variety of relevant subjects important to sea kayakers such as meteorology, navigation, charts, buoyage, safety, expedition planning, etc. It clearly served a purpose as it went on to four editions and sold, even in those early days, over 22,000 copies. Apparently, so I was told, it was the book most often filched from outdoor centre libraries.

Even before the formation of the BCU there were many flourishing canoe clubs around the country. With a well structured coaching scheme it was easy to welcome and retain many new comers to canoe sport. The fairly rapid growth of sea kayaking was therefore well supported. Improved kayak design together with the advent of glass fibre sea kayaks in the early 1970s and the tenacity and enthusiasm of a particular bunch of paddlers from the North East of England meant that sea kayaking was here to stay, here to flourish and here to be enjoyed by a growing number of enthusiasts.

Turning now to the more recent past.

Credit for the first ever sea kayak commercially produced in glassfibre in the UK must go to G.L.Gmach, a UK based Hungarian who called his kayak the 'Wessex Sea Rapier. Though a good sea kayak it bore no resemblance to a Greenland kayak. In terms of providing the impetus for the design of modern day kayaks based on the Inuit kayak, the Igdlorrsuit should take pride of place. This original West Greenland seal skin covered kayak was brought back to the UK, (Scotland) by Ken Taylor back in 1959. Ken was an under-graduate at Glasgow University when he undertook a three month solo expedition to West Greenland to study the kayak and it's place in the Inuit culture. Here he learnt how to use these craft and was clearly an avid student and subsequently keen to share his new skills and knowledge with fellow paddlers back home in Scotland. It was his kayak that was probably the one used as a template for our contemporary sea kayaks.

In 1966 another Brit., Chris Hare, also returned home to the north east of England from Greenland with his own Inuit kayak (interestingly made by the son of the Inuit who made Ken Taylor's kayak) and, for my money, this became the real spark that lit the present day fire. Names such as Derek Hutchinson, Chris Jowsey, Lofty Wright et al, all from the NE England, joined Chris in encouraging the growth of sea paddling which was to spread around the world as a recreational activity. It seemed that all the necessary ingredients came together. Available kayaks designed for the British paddler and based on the Inuit kayak, (after all, why re-invent the wheel when the Inuit had successfully produced a sleek hunting machine and had take thousands of years to do it), an enthusiastic bunch of young people looking for an adventure outdoor activity, a local environment with some fantastic paddling opportunities (The Farne Islands with its fast tides, plentiful wildlife and close enough to the coast to be accessible) and a strong local history of boat building. The cake was ready for cooking.



It was from Duncans' paper, "**It's Inuit I'nt it**" that I learnt Geoff Blackford used the kayak brought home by Ken Taylor in 1959 as his inspiration when designing his own kayak for the benefit of the bigger torsos of the Europeans, a kayak he called the 'Anas Acuta'. This design was subsequently taken up by Frank Goodman who used it to make drawings of his first sea kayak to be produced by Valley Canoe Products (VCP). Frank used it to make drawings of his first and most successful sea kayak design; the kayak he called the Nordkapp. He was asked by Colin Mortlock to design a directionally stable, fast and

sound (water tight) kayak with good carrying capacity and with bulk heads and hatches fit for Colins expedition to Norway in 1975 when he, with others, completed a journey from Bodo to Nordkapp in Northern Norway. Rough seas and weather tested this new design and it was not found wanting. The design principles incorporated in the Nordkapp (a moderately 'V'd keel, softer chines and distinct Inuit kayak profile became so widespread that these characteristics have become known as the 'British Style') led to the production of this kayak in many different versions to suit varying torso and purposes. This model has stood the test of time in that it remains synonymous with the term 'sea kayak' around the world.



Derek Hutchinson followed with the NORTH SEA KAYAK and of course Derek has remained a leading sea kayak designer. Ken Littledike was the first to seam his plywood kayaks with Glassfibre strips. Ken was a teacher of wood and metal work at the Masonic Boarding School. I suppose he can lay claim to be the first to ever use GRP for boat construction. Some of you may remember Barry Bucknall of early television fame (for his DIY programmes) who made his own sailing boats and he received the credit for this technique. Not so, it was Ken who

got the idea from watching his mother stitch garments together.

It took a while to distribute our early British made kayaks around the world. I had to arrange for three of these kayaks to be transported from the UK to Nunivak Island in the Bering Sea for our 1987 expedition to go round this Island. This feat of logistics alone deserves a story but I must move on.

Though the initial market was the UK they were soon finding their way to USA and beyond. Of course countries around the rest of the world soon started up production based on their own designs so that there are very few places, remote or not, where sea kayakers cannot be hired or bought today.

By the early 1970s the BCU identified the need for a specialist committee to cater for this blossoming aspect of canoe sport. The BCU functions on the back of such committees which care for all the different aspects of canoeing such as slalom, white water, sailing, coaching, racing, surfing, touring, river access etc. Hence the Sea Touring Committee came together with myself as it's first chairman. I pulled together a group of fellow enthusiasts including many from the NE England. I saw communication as being essential and so regularly produced a broad sheet of information regarding progress and potential agenda items to keep the ball rolling between meetings. Thus was inadvertently started the International Sea Kayaking Association which was separate from the BCU Committee but worked in parallel with it to bring in paddlers from all over the globe. It certainly fulfilled a role as it lasted for over forty years, producing a 20 page newsletter every two months. There was no internet in those days and my newsletter provided a whole range of material from trip reports, gear reviews, general information, etc. to promoting such as meets and symposiums.

Though producing this newsletter was always lying over me like a cloud in that every spare moment was taken up, it was always a 'labour of love' and gave me tremendous satisfaction. In the early days I used an old battered printing machine bought for a few pounds from an auction. Ink and bad language used to spray around my garage at each publication. Then I moved to a state of the art Gestetner machine linked to my computer and was able to produce something that actually looked like a newsletter.



I miss it but after 40 years and with the advent of the internet and professionally produced specialist magazines both from the USA and Britain my efforts were becoming redundant. Quit whilst ahead has been my belief.

A huge impetus to canoe sport in the UK was the annual Canoe Exhibition as staged by the BCU and Sports Council at Crystal Palace Sports Centre in London. I had a stand there as long ago as 1969 when I represented my local canoeing association. The Exhibition organisers were keen to attract anyone willing to lay on a stand or stall, commercial or voluntary, as the venue was very big and the canoeing fraternity smaller than today. My first stand there was amateurish to say the least. I had taken a party of borstal boys with me and I had them hump large rocks from the grounds of the Crystal Palace (you would not get away with this today) and place them on our allotted stand space. I then lay clear polythene sheets over the rocks, placed a slalom kayak on top complete with a mannequin to look like a paddler. I suppose it did not look that bad but, most importantly, it was fun.

Soon space at this Exhibition became more valuable as the sport grew. Because of my early involvement I was able to retain my space and for years I used it to promote ISKA.

This annual event, held every February, kicked started the season for many. It was such a social affair as old friends met up and often planned canoeing meets for the following summer. Canoe clubs, scouts and

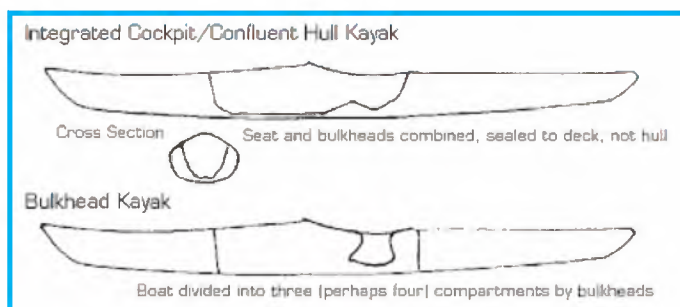
other youth organisations, schools and individuals flocked there as did manufacturers and retailers of all things canoeing. A major attraction was canoe polo played in the Olympic sized pool. I recall putting on demonstrations in this pool, not all of them working out as planned!!



Unfortunately this event moved from Crystal Palace as this venue was thought to be too difficult to reach for many from the north of the country, it being on the south side of London. It moved to Sheffield for a couple of years and then to Birmingham where it was amalgamated with the Leisure Show and thus lost some of

it's identity. Though it remained in Birmingham it became part of the annual Great Outdoor Show where canoeing took its place alongside all other outdoor activities. For me, at least, this annual event has lost much of its attraction, becoming totally commercial in purpose. All good things must end.

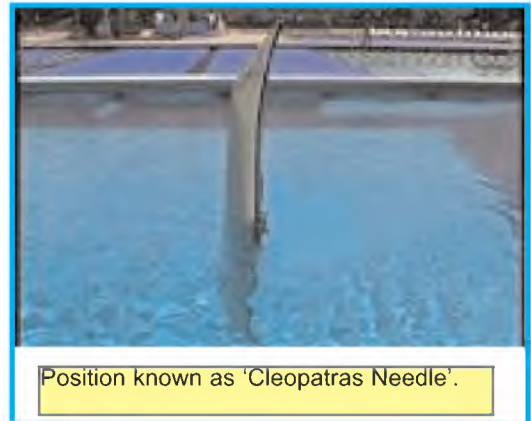
One story worth the telling from my days of running ISKA concerns the 'Kayak Flooding Experiment'. The key players in this saga were (and hopefully still are) friends of mine and emotions ran high over the issue of safety and water logged kayakers. In 1988 advocates of the Sea Tiger kayak (designed by Alan Bye and passed to Nick Padwick to market and produce as a coastal touring and surfing kayak) and integrated cockpit* craft in general pointed to the rescue off the Welsh coast (Anglesey) of a paddler in a Sea Tiger kayak.



*a kayak cockpit in which the seat and bulkheads are combined in one unit and sealed to the deck to form a cockpit which is isolated from the rest of the internal space in the boat.

Previously Nick had promoted his kayak as being ultra safe – if there such a craft, - The Titanic comes to mind - because of it's integrated cockpit (rigid sea sock) which would prevent water entering the hull of the kayak. Should it do so against the odds, it would not cause loss of trim as the free flow of water in such a confluent hull with built in buoyancy at both ends would not effect the trim of the kayak to any great extent. In other words it would not suffer the problems caused by a water logged fore or aft bulkhead where the flooded end of the kayak sinks and the other end goes vertically skywards making on the water rescue difficult, a position known as 'Cleopatra's needle' as illustrated on the right. Not so says Frank Goodman and Derek Hutchinson who maintained bulkheads were quite sufficient. It all became very controversial. Even so Frank agreed to offer buyers of his sea kayak the sea sock should they wish to purchase. No one did.

As editor of the ISKA newsletter this, at times, quite vitriolic debate provided some meaty content. Nothing like controversy to increase sales and so I published everything and anything. I was accused of being partisan by both sides whilst, in fact, getting a sore bum sitting on the fence. Hey Ho!



SYMPOSIUMS

I believe I am credited with putting on the very first sea kayaking symposium back in 1975at least Duncan Winning says so in his official history of canoeing. I do not remember where the idea came from, it just seemed right at the time. I staged in the middle of England, in Birmingham at their university. It was not possible to get further away from the sea and I took some criticism for this but I stuck to the line that this was to be a true symposium where the flow of ideas and information would take precedence over paddling. 51 weekends of the year could be used for getting wet; this was to be a learning and sharing experience. The university provided food, accommodation and lecture facilities and we made excellent use of them all as well as the bar.

Since this first event symposiums, albeit most often water based, have become a regular feature of the sea kayaking scene the world over. Nigel Dennis's meets on Anglesey, North Wales encapsulated everything that was good about symposiums. They are based on a wonderful coast line with plenty of exciting tide rips, overfalls and destinations worth exploring. There are coaching sessions, mini expeditions and plenty of presentations by class speakers.



This group photograph taken at one of our earliest symposiums staged at Ullswater in Cumbria, November, 1983.

Our first symposium in Birmingham did not get off to a good start. I had invited H.M.Coastguards to talk to us. I saw this as important as I wanted to change their attitude towards us. This government body is charged with the safety and protection of all mariners using UK coastal waters. They co-ordinate every response to any emergency

situation along and within our coastal area from flooding, ship wreck, environmental pollution and rescue from distress. They were at best uninterested and at worse very dissuasive each time we informed them of a kayaking trip that would be considered 'adventurous'.

In the event, though they had clearly agreed to attend and address us, there was a 'no show' and we had to improvise in order to fill the vacant session.

I wrote to the Coastguards and told them just what I thought. I felt they had let us and themselves down. Here we were doing our best to approach our sport in a safe and responsible manner with a wish to bring them on side by involving them in our activities. Their less than professional failure to meet with us having agreed to so do was nothing short of crass behaviour. It worked. At the following symposium the Deputy Director of H.M.Coastguards himself, Dick Richards, turned up. He became our best advocate. He joined the BCU Sea Touring Committee. He opened the pages of the Coastguard house magazine and I wrote a lengthy article explaining what sea kayaking was about and asked for an acceptance of our sport alongside that given to the yachting fraternity. This was readily given and no longer were we told that our proposed trip was unsafe and should not be attempted.

In fact the relationship between us and the Coastguards has changed. They have been reorganised and no longer have look out stations around the coast. Modern technology such as radio, radar and cell phones allows for effective monitoring. All small boat pleasure craft are expected to rely on a shore based third party to raise the alarm with the Coastguards should they go beyond their ETA and/or sea and weather conditions suddenly deteriorate. None the less, at the time it was important to bring this professional organisation on side and this we achieved.

Finally a word or two about the Historic Canoe and Kayak Association. H.C.K.A.

This is group interested in the heritage of canoeing in all its aspects ; in the types of boat and how they were used around the world, notable canoeists and their exploits, past competition under paddle and sail, manufacturers, construction and restoration, museums and literature.

H.C.K.A. organise occasional meetings for paddling (chatting) and camping and produce a quarterly journal which is a mine of information on world canoeing heritage. Members can also advise on aspects of boat renovation.

The HCKA started as a result of a national rally of historic boats being organised in the autumn of 1989 at Low Wray, Windermere. The response was encouraging and a lot of support was given to the idea of further contact with each other as a club.

The variety of boats together with the stories from their owners was fascinating - too good a time to let go of. So the group was started with a view to contributing information and articles to a quarterly newsletter and occasionally getting together for a time on the water over a weekend. Tony Ford, a good friend

of mine, a much experienced canoe instructor and a great investigator into canoeing history, took on the job of running the club in 1995 along with canoe manufacturer Graham Mackereth. The newsletter is now known as 'Paddles Past' and has grown to quite a substantial booklet - a valuable resource for any with an interest in how the boats developed, how they were used in work and leisure and how today's sport started. If you need to identify a boat or estimate its age, if you want advice on restoration or materials supply, if you want to find literature or if you'd simply like to make contact with other owners of older boats, then the odds are that one of their members may be able to help.

Their URL is www.hcka.org.uk



A meeting of the HCKA. Tony Ford on right holding the sail.

In 1873 the Clyde Canoe Club was formed and I have copies of reports of some truly fascinating sea kayaking trips off the west coast of Scotland, many of which I have published in the ASKC (Advanced Sea Kayak Club, now the International Sea Kayak Association) newsletter. The Scottish Hostellers Canoe Club flourished before WW2. They are known to have had specifications for Life Jackets before 1950, as well as their own sea kayak design, safety rules and recommendations, some of which exceed the current British Standards document. We know their members paddled extensively in Ireland and Norway as well as, of course, along their own beautiful coast in Scotland.

Before the Second World War, lath and canvass kayaks were often built by paddlers themselves, -usually using plans bought from commercial designers. There were few manufacturers as kayaks were expensive to produce commercially as they were labour intensive and thus beyond the pocket of most young folk. Also few had their own transport or, indeed, long holidays. So, unless they lived by the sea they were limited to either folding kayaks (particularly expensive) or short kayaks that would fit in the freight compartment of the train.

Post war saw the advent of new materials being employed to make kayaks. Marine ply was incorporated into some designs whose seams could be readily stitched and re-inforced with Glass Reinforced Plastic (GRP). Kits and the finished boats came on the market. At last it was possible to construct a marine ply kayak that did not leak at the seams.

We must not overlook the development of kayaks once G.R.P. together with other revolutionary new products such as Kevlar came on the scene. Kayak and canoe moulds became available for keen paddlers to make their own from GRP. My first prized new slalom kayak was from Dave Patrick (P &H) who turned these kayaks out from his garage at home. I even went into production myself and the problems we had over which mould belonged to which designer was manifest!

Together with new production techniques (roto-moulding, etc), it became possible to construct near replicas of Eskimo kayaks in a strong, durable and easily repairable material that we take so much for granted today. It was in 1960 that we saw the first commercial GRP sea kayaks and much development has taken place leading up to the plastic polyethylene roto-moulded sea kayaks that are now in full production.



As the younger generation of sea paddlers search for ways to gratify their quest for adventure they are going to have to have to find new ways to push out the boundaries. There will always be new challenges but I wonder whether modern technology and equipment has put a limit on such endurance as experienced by the early explorers. As Theroux said, "Any fool can be uncomfortable" so I see no purpose in not taking advantage of modern advances such as satellite navigation, mobile telephones using satellites, computers; in fact the whole array of Information Technology has a lot to offer us in this new age of communication improvements.

Apart from improvements in kayak and paddle design and other relevant equipment, one of the most important safety factors when undertaking long open water crossings was not only an ability to paddle with skill and endurance, but also to be able to roll, first time, every time. The 'Eskimo Roll' was introduced to Britain by an Austrian, H. W. Pawlata in 1927 and until a few years ago his technique, in reality the standard Greenland roll modified for feathered paddles and whereby the paddle is extended prior to rolling, was taught to beginners. Now we, or at least many of us, start by teaching the 'screw roll', i.e. no prior extension of the paddles by gripping low at one end of the shaft in order to gain extra leverage. Teach as you mean the paddler to go on is the maxim.

Another name to mention is Geoff Blackford who built the ANUS ACUTA (Pintail Duck) sea kayak in 1970, from a survey drawing of an original Eskimo kayak brought back from Greenland (Iglordusuit) in 1959 by Ken Taylor of the Scottish Hostellers Canoe Club. This kayak went into commercial production in 1972. Derek Hutchinson followed with the NORTH SEA KAYAK and of course Derek has remained a leading sea kayak designer. Ken Littledike was the first to seam his plywood kayaks with Glassfibre strips. Ken was a teacher of wood and metal work at the Masonic Boarding School. I suppose he can lay claim to be the first to ever use GRP for boat construction. Some of you may remember Barry Bucknall of early television fame (for his DIY programmes) who made his own sailing boats and he received the credit for this technique. Not so, it was Ken who got the idea from watching his mother stitch garments together.

The north east of England played a prominent part in the development of sea kayaking, probably because of its' sea-faring tradition and its coastal features which include the Farne Islands. I could call out a roll of honour of some of the names who should have a place in Sea Kayaking's Hall of Fame but I would probably miss one or two out so shall resist.

Alan Byde, whose book 'LIVING CANOEING' was my bible in the early 60's, and has been a major force through his writings, coaching and design thinking. In 1975 Colin Mortlock, a lecturer from Charlotte Mason College, came up with an idea of a publicised expedition and asked Frank Goodman to design a kayak for it. He did, and it was called NORDKAPP after the expedition in which Colin took his team to kayak around Norway's most northerly point, the Nordkapp.

stage this sort of event in Newfoundland Here they have now well established their annual Sea Kayaking Symposium over on the west side of the Island and I doubt you will find a more fitting venue.

Much of this chapter has been spent on the Inuit. I have touched on the construction methods of a kayak but only to give you a flavour for it. There are some excellent books, many mentioned in the bibliography at the back of this book, that describe kayak construction in detail.

