

## Build the ARTEMIS Sailing Canoe



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- It is forbidden to publish these building instructions or parts thereof elsewhere, or to sell or otherwise pass them to third parties.
- Kits are usually not returned and are not credited. This is no exception.
- The author has ensured that the build instructions are executable, accurate and precise. Unfortunately, he cannot be held liable for your technical skills, and therefore not for the properties of the completed boat.
- Travelling on lakes or coastal waters in small boats can be dangerous. In addition to choosing the right material, excellent seamanship, coupled with careful and

realistic assessment of your own possibilities and limitations, is critical for the success of such ventures. Also make sure that your ARTEMIS is equipped with bow, stern and side flotation as described in these building instructions, and practice your capsoze routine regularly. The author is not liable for your incidents on the water!

- Always carry clothing that is adapted to the weather and a life jacket!

### **Foreword**

When daydreaming in our youth, small boats often have a starring role. We set off on misty water to distant shores or uncharted islands. After landing we pull the boats on the beach and pitch our camp not far away. At night we read sea stories with the candlelight lamp and sleep under the stars. Perhaps, hiring an old canvas double kayak at the seaside, paddling around the headland to a secret beach, impossible to reach in any other way. A

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## Introduction & Information

Version 1.2

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first taste of on the water exploration, a wonderful memory, the first seed of a love for quiet exploration afloat.<sup>1</sup>

These dreams, and that first seed of an experience never forgotten, led me to the design of the ARTEMIS sailing canoe. The persistent desire to "get there" - to this place that we can see in the distance, but cannot reach in any other way.

Such places can be seen on each cruise: a shallow lagoon, a tidal current in the Wadden Sea, wild places with reeds, tree roots, bushes and beach. To get there, to really get close to nature, you need a light, flat-bottomed and portable boat. It would be best if it is so light that you can drive it through the surf and onto the beach and then carry it over the high water mark.

### Introduction

The simplest seaworthy boat is a canoe or kayak. Cheap boats made of plastic offer the opportunity to be out on the water in a simple natural way.

These plastic boats are extremely robust, but have the aesthetics of a recycled flower bucket and a comparatively high weight. This leads to additional work during loading and unloading, launching and retrieving and also when paddling.

The lightweight and more expensive alternative are carbon-kevlar canoes and kayaks. Kits for a DIY build made from plywood, epoxy and fibreglass cloth are more affordable and of similar low weight. These kits are suitable for home construction, are fun to build and cost about a third of the price of a carbon-kevlar boat.

I'm a cruising paddler. Of course I want to cover a good daily distance with the boat.

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<sup>1</sup> Interestingly, in these dreams there are never expensive moorings, costly launchings, heavy cumbersome rigs, stinking overheated or flooded motors, or keelboats with too much depth, keeping us away from the beach. We also never dream of sitting helpless on a capsized, or stranded boat, waiting for a tow from the Coast Guard.

At the same time I am looking for a relaxing holiday, and feeling good on the water. For me there is only one drawback to paddling: that we must, unfortunately, paddle all day long. This can be very tedious, sometimes dull and spoils the holiday mood thoroughly.

So, for a few years I preferred touring with small sailing dinghies.

Unfortunately, the wind does not always blow, and sometimes it blows from the wrong direction. If the goal is to windward, the path for the sailor becomes frustrating long. Tacking upwind means: double the distance, three times as long, four-time effort. Therefore sailing tours are very much effected by wind and weather.

How would it be if you could combine the best of a paddle boat and a sailboat? Call it a 50:50 boat. An old saying comes into my mind: "Sail when you can, paddle when you must". A boat which paddles very well when it is best to paddle yet also sails well when conditions are good for sailing. I looked back to the history of sailing and canoeing and discovered in the ancient books from the last century - the sailing canoe.

Nothing we invent is really new: from 1865 John MacGregor travelled along with his RobRoy sailing canoe over a thousand miles on the rivers and lakes of Europe and wrote a book about it. Somewhat later Warrington Baden-Powell began with the design and construction of his Nautilus sailing canoes and thus was initiated a whole sailing canoe movement, which lasted until about 1900.



*An original 1880's Nautilus Sailing Canoe*



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The concept of cruising sailing canoes is not new. In the meantime, the knowledge of hydrodynamics has evolved. Modern boats are semi-planing, thus faster than their ancestors which were built as displacement boats. The state-of-the-art boat building technology of today uses modern materials. With plywood, fibreglass cloth, epoxy and foam you can build ultra light yet strong tough low maintenance boats.

The ARTEMIS design transfers the concept of cruising sailing canoes into our time. I'm not the first to attempt this. Hugh Horton and others have done this with his SERENDIPITY series and the

BUFFLEHEAD design, achieving fundamental modern pioneering work on sailing canoes.

ARTEMIS has modern lines and is built with lightweight, modern materials without needing a strongback, building jig or moulds - which saves lots of time! The kit contains sections of planks that are connected without scarfs - very simple.

You can build it simply, in good time, and in a cost-efficient way, in a garage. I think John MacGegor and Warrington Baden-Powell would love it.



ARTEMIS without deck. I prefer this packaging layout for a cruise of several days.

### Product Description

The ARTEMIS sailing canoe is an **ultra-lightweight expedition canoe for one person, their luggage, some food and**

**water.** It is possible to carry a passenger in an emergency. The boat can **be sailed or paddled equally well.**



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Most paddlers prefer a 230 cm long **double-bladed paddle**. You can also paddle ARTEMIS as a Canadian canoe and move it with the **single bladed paddle**.

Under paddle ARTEMIS gives you a **stable position in the water** and **behaves in a very good-natured, predictable and stable way in chop**. This makes it safer than a kayak in borderline situations. Nature photographers can take their hands off the paddles without being capsized. ARTEMIS can be paddled as a double.



ARTEMIS has **several different sailing options**.



The **Bufflehead Sail** in conjunction with a carbon rig has superior quality and efficiency. It is already perfect in light winds and stows well in the boat; therefore suitable for the longer tours, for short trips as well as for the regatta.



The **lug sail** with the wooden rig is good for all-round sailing and excellent value for money.



The monster sail with carbon rig is for experienced, sporty and active sailors who want to get the maximum speed out of their boat.

I am happy about the success of ARTEMIS in sailing and endurance regattas. ARTEMIS adapts to the sailing style of its owners:

- When sailing, Koos sits on the side deck and steers with a direct tiller: very agile, very sporty, very fast, very artistic. He likes to plane a lot. In high winds, he balances on a hiking board. In little wind, he sits on a box in the cockpit. When he paddles, the box serves as backrest



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- Thomas is an experienced paddler. He prefers to sail kneeling on a knee mat. In gusts, he hikes out on seat boards that are mounted on the side of the cockpit coaming. He controls his rudder with push rods on each side of the cockpit.



- I sit on the side deck in a race, but will mostly stay in my fully adjustable HUGH HORTON VENICE canoe seat in the cockpit when touring, preferring to reef rather than hike. On my long touring days, it's all about comfort, not top speed. I have the steering push rods on either side of the cockpit within easy reach. When there is little wind, I paddle alongside with the solo paddle and in this way reach my daily distances safely, comfortably and with little effort under all conditions.



The ARTEMIS prototype weighs **less than 25 kg cartop weight** - as light as a carbon fibre-kevlar canoe. A boat made from a 3 mm kit can have a cartop weight of 23 kg only. One can **load the sailing canoe unassisted on the car roof rack and easily launch and retrieve anywhere**. At home the sailing canoe stores under the garage ceiling. On tour, you can retrieve the canoe out of the water without help, take it on your shoulder onto the lawn and **sleep at night in it** under a cockpit tent.



*ARTEMIS without deck, but including skipper, sleeping bag and mattress.*

Artemis can be built about 4 cm wider or narrower. The wider boat has a little more reserve buoyancy at the top of the coaming, therefore a little more resistance against capsize. For the narrower boat you can use a shorter paddle.

The boat is incredibly versatile for sailing or canoeing, a boat for long trips along the waterways and lakes in Europe, on the bays of the Baltic or for an afternoon on the quarry pond. A delightful stable platform for bird watching in the salt

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marshes, easily rigging the sail as the waters open up for sailing on a sparkling summer's day.

Under the front and rear deck is enough space for luggage, food and some water. **Tours over several days are possible.** ARTEMIS has proven to be consistently fast in raids.



ARTEMIS without deck, showing bow, stern and side flotation

The canoe has **bow, stern and side buoyancy** and is therefore very safe. After a capsize it floats high and almost dry. It **can be easily rolled upright in the water.** After rolling, there is very little water in the boat. It is also possible, with a little practice, **to re-enter the boat** in deep water, **and carry on to your destination.**

### Guide for Assembly

I think building a beautiful wooden boat is fun. This detailed guide is meant to be a help for the builders of the Artemis sailing canoe, so that they will have as much fun as possible building it.

The kit contains some more important documents:

- a schematic drawing showing how to join the parts and where they fit together.
- a BOM, a bill of materials, a list of all the materials needed to build Artemis.
- all drawings, with dimensions, which are important during assembly.

Info: The images in this instruction manual cover the construction of two prototypes. Slight deviations from the commercial ARTEMIS version are possible.

Quality assurance is a system of successive steps! With this kit you hold high quality materials in your hands. With carefully executed steps you are creating a high quality boat.

These work instructions are very detailed, because quality depends on every step. They show all the steps in the correct sequence. It is generously illustrated, because pictures can say much more than words. It is not difficult.

Important steps, where accuracy matters, are boxed.

Sure, you may know that your self-built boat may not quite be perfect in every corner, in your hyper-critical eyes... but the impartial observer will not notice this. To him, your boat is a perfect piece of jewellery and craftsmanship - modern wooden boat building in perfection.

When building, some very satisfactory days will alternate with ones where sometimes things go wrong: mixed epoxy in the wrong relationship will not harden properly, colour smears on the tape border... those things may happen. We humans are not perfect, and only non humans do not bungle. In these cases, don't carry on regardless.

A famous boat builder once remarked, the most important tool for damage limitation was the moaning chair, into which one can fall, and consider the work again. What went wrong? What is the best way to do now? Go back to before the previous step or repair the last step? I prefer small correction steps before they become small errors which cascade into large errors.

The ARTEMIS sailing canoe can be built in about 30 days. In general, home builders prefer shorter stints, after work or on weekends. Smaller progress will extend the construction period to several months.