



## Program Guide

### Welcome Aboard!

You are about to embark on an adventure. These five-foot, unmanned, GPS-monitored sailboats will sail the oceans of the world and bring fascinating learning opportunities to all. As long as the Global Positioning System (GPS) unit is powered and in view of the sky, these boats' speed and position can be tracked to faraway lands. Experience the international relations opportunities as students arrange for foreign students to meet their boat as it comes ashore. This project is fun and provides direct connections to oceanography, earth science, boat building while seamlessly connecting social sciences, history, and countless other disciplines.

### Implementing Your Program

This program is easily adaptable to fit different needs. We have launched over 70 boats and gained considerable experience which has been used to develop the following guidelines. Use these guidelines to help make this program easy and as rewarding as possible.

In addition to the dedicated Educational Passages' team, this project is very fortunate to enjoy international support from various professional marine organizations and institutions, ready and willing to assist us and YOU! For instance, Maine Maritime Academy helped launch mini-boats around the Atlantic and are a great resource when mini-boats land, as there are connections with Maritime alumni who work out of major ports around the world. NOAA is another amazing resource. Collaborating on a myriad of tasks, through GPS monitoring to launching mini-boats off NOAA research vessels. NOAA and other institutions are also helping us install ocean and atmospheric sensors on mini-boats to help us develop a basic and very economical ocean research platform. Educational Passages also enjoys the support of boat builders, sail makers, harbor pilot associations, marine museums, naval architects, scientists and engineers of all types.

Additionally, anyone on the web can monitor these boats making it possible for schools to join together to do Regional Boats. This hands on learning, diversity, and fun appeals to a wide population base which makes this program dynamic and unique. Educational Passages is a group of interested volunteers who think they've come up with a fascinating educational tool and would like to spread such student-lead-learning projects around the world. Our goal is to make this program as meaningful to participants as we can. We therefore pledge to do whatever we can to make your program a resounding success.



## EDUCATIONAL PASSAGES

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## **Boat Information**

### **Boat Production**

The state of Maine, where this program was developed, is known for high quality boat building. Vocational students at the Mid- Coast School of Technology in Rockland, Maine, are now producing many of the boats. 5ft (1.5m) mini-boats are molded in the same way larger boats are produced and can be laid up and molded in a couple of days, providing an economical and time efficient way to teach boat-building skills. We are fortunate to be working with many partners including state of the art boat-building company Lyman Morse Boatbuilding Inc. in Thomaston, Maine, also Mid-Coast School of Technology.

### **Boat Design**

Mark Fitzgerald, naval architect designed our boat. It was designed to sail straight downwind with a self- tending sail requiring no outside assistance. Its severely swept-back skeag sheds seaweed, keeps it tracking straight downwind, and makes it self-righting. These boats are filled with foam floatation and are strong capable sailors and usually survive hurricanes.

### **Sail Design & Rig Development**

Evolution Sails recently upgraded our sails and rig to survive severe wind & sea conditions. The cross spar is now a flexible fiberglass batten that flexes under strong winds or when it gets slammed by following seas. Most boats get re-launched and end up sailing over 10,000 miles – one sailed over 22,000 miles through a hurricane and over 30 foot seas before being picked up off the coast of Portugal.

### **A Proven Design with an Excellent Track Record**

These boats are very capable sailors and usually survive hurricanes and end up making ocean crossings. When these boats make landfall it typically makes news and people of all ages and walks of life become involved. This makes for unforgettable learning experiences. Be sure to view our map showing the landfalls of our boats shown on Educational Passage’s website boat page. Many of our boats are launched by the Maine Maritime Academy training vessel and are launched along the eastern coast of the US, the Caribbean, or off Europe’s coast. Boats have ended up in Ireland, France, Portugal, Granada, Cuba, Panama, and many other countries. We have also arranged launchings off a Brazilian Freighter, a NOAA research vessel, offshore fishing boats as well as off private boats. We have the flexibility to customize an exciting voyage to fit the needs and interests of your school.

### **Boat Specifications**

Length overall .... 56” Beam .... 16” Ballast ....12# approx. Displacement .... 35# approx. Draft .... 15” Sail area .... 300 sq. inches approx.



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### Boat Customization

You have a blank boat, a blank start of an adventure. In order to encourage finders to reach out with information on your boat, you will want to customize and put finder instructions on your boat. You can add graphics, name it, put a picture of your school or club on it, and paint it as you wish. You will also want to include instructions to the finders so they will have an idea of what to do with the boat and how to contact you.

The best way to show this information on your boat is to write your instructions and graphics on white computer paper using black or dark blue ink (lighter colors fade in the sun). We recommend you use a font of at least 12 for easy reading. Then clear-coat these instructions and pictures right onto the deck with clear or neutral fiberglass gelcoat. There is also a 4" deck plate which opens into a water tight compartments where you can put messages, pictures, trinkets, a flash drive, or anything else you'd like.

Recommend information to include in your finder's instructions: boat identification, contact person, e- mail address, phone number to call, etc. You will want to instruct finders with what to do once they find your boat at sea. You might suggest they add a message to the watertight container and make any repairs they can and put her back in the water to continue her journey. If it is found on shore what do you want them to do? Send the boat back to you, take it to a nearby school and maybe they can send her out again to continue its voyage. This could become a real interesting international experience.

You have a lot of decisions to make. Maybe you should write your instructions in several languages. We hope you're excited about the possibilities that lie ahead. We will be ready to assistance you in any way we can.

Good luck with your program. We think you will find it fun, interesting, and very educational. The Educational Passages Team



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### **Boat Monitoring**

Our boats are currently being monitored by the National Oceanic and Atmospheric Administration and can be seen on your computer at [www.educationalpassages.com](http://www.educationalpassages.com) on the “Boat Tracking” page. Most of our boats that are currently at sea can be monitored through these sites and the following information will be useful as you plan your voyage.

### **GPS Information**

We offer two different GPS units. One uses the Global Star Satellite system and covers the North Atlantic Ocean very well. The Global Star units have to be programmed by us to report at the frequency you desire and cannot be changed. These units do not allow for two way communications to your boat and cannot be used to send research data back to you in real time.

The Iridium Satellite system is approximately \$300 more but has two important advantages. It allows two way communications so as your boat approaches land you can increase the frequency of position reports to make recovery much more likely. In addition we can receive research data from sensors in real time. You could also rig up a way to steer your boat from your computer or maybe put a GoPro camera aboard, and solar panels. Before you order your boat please call Dick at (207)322-1901) so we can discuss your plans and help you customize your boat.

### **Additional Monitoring Possibilities**

NOAA has a student drifter program where students can send out drifter buoys <http://www.nefsc.noaa.gov/drifter/> and they can monitor such things as sea temperature, barometric pressure, and current/drift patterns. They also have a program for interested teachers who can even spend some time at sea aboard one of their research vessels. They might be able to help you put sensors on your boat or perhaps your boat can participate in some other NOAA project, such as studying fish migratory patterns. Talk to us if you are interested.



## Watertight Compartment

Boats have a watertight compartment that is accessible thru a 4" diameter deck plate. Compartment sizes vary according to your needs. (Standard size is 7 X 10 X 4")

1. Flash drive
2. Pictures
3. Maps of your town
4. School flyer or brochure
5. Note to suggest they keep the boat outdoors & right side up so you and everybody else can continue to monitor it
6. School tee shirt
7. Sea Glass
8. Trinkets, old coins, fool's gold, etc.
9. Notes, messages
10. Local recipes
11. Jewelry
12. State flower
13. Use your imagination!

## Final Checkout & Tips

- Did you apply 2 coats of good antifouling bottom paint? These boats as are small and will be continually wet. Barnacles will grow up on the sides and really slow your boat down. We suggest you use bottom paint right up to the deck level. Do this just before launching because most bottom paints are soft, don't dry out very well and are messy. Don't forget to thoroughly sand the boat before painting.
- Check to make sure your GPS is functioning properly BEFORE launching. Is your boat posted on our website and have you told us about your plans?
- Did you send us a photo(s) and a write up on your boat so we can post your boat to the website?
- Are you confident about your launch site? Are you launching it where it should make a nice long voyage to perhaps contentment?
- Check with us or some other professional who knows the currents and winds in your area before having your boat re-launched. Don't forget re-launching your boat in the same spot she came ashore seldom works!
- Is the deck plate cover screwed down tightly and is the little black rubber washer or "O ring in place to ensure its water tight?
- Try to get your boat recovered at sea to avoid being damaged in the surf.



## EDUCATIONAL PASSAGES

### Boat Retrieval Suggestions

One of the most enjoyable and exciting aspects of this program is arranging for the recovery of your boat. Because the boats come ashore on a following wind and sea they can very quickly be damaged on shore if they are not immediately picked up. It's best if you can arrange for your boat to get picked up at sea. Often, however there isn't enough time to make proper arrangements for meeting the boat or if it comes in late at night other arrangements will have to be made. Use the email template below to send an email to local coastal newspapers, TV stations, or government officials and ask them to ask their coastal residents to keep an eye out for your boat. The Camden, Maine, high school saw their boat traveling 35 miles down a coastal road 1 hour after making landfall. It came to a stop in someone's driveway and we were able to call the lady a couple of hours later. She nearly fainted when we asked her if she knew anything about a little boat!

### Making Initial Contact

The hardest part of arranging retrieval is usually making contact with a person who can actually help retrieve your boat. We have found the best first step is to "Google" the Embassy of the USA in the country your boat is approaching. Tell them you are calling about a school project involving international relations between our students and theirs, and we are hoping the students can work together in retrieving this boat. The embassy should be able to either provide you with helpful phone numbers, faxes or e-mail addresses. Include the event flyer on the program you are doing or one of our brochures to give them a good idea what this project is all about. Phone numbers, fax numbers and email addresses to ask for might include:

1. Nearby schools where you think your boat will land
2. Their Coast Guard
3. Their Harbormaster – they'll tell local fisherman who love to retrieve these boats
4. Local media (TV or newspapers and ask them to ask there residents to keep an eye for your boat.
5. Minister of Education
6. City Hall/Town Government

Now that you are ready to call or email you might want to include your foreign language class to help make calls or to email. Google translator has a nice site that allows you to type an e-mail in English and it will translate it into any language you want.

### Involve Lots of People

We have found the more people you have trying to track down your boat the better. You should copy the other mini boat participants and us on your emails. It is amazing how often someone involved in the search says "hey my uncle lives there", or "my father has a friend in that country".



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If you copy dick@educationalpassages.com we'll post your progress on our website for all to follow. I suspect that you'll get more people trying to help you recover your boat.

In the hunt for the Mount Desert Island boat one of the best pieces of information came from a person in Arizona who learned through the web that we were looking for a boat that landed in the jungles of Panama. A friend of his happened to be sailing in the area and was part of a cruising community and they all joined the hunt.

### For Further Assistance

We have numerous volunteers who enjoy and are really good at tracking these boats. After the Camden boat came ashore on Nova Scotia one of our volunteers was able to track the boat going down a coastal highway. It eventually came to a stop in someone's driveway and within an hour we had the person's name, address and, phone number. This boat was returned to the Camden High School and later sent out with NOAA to participate in studying the migratory patterns of the Atlantic salmon. The Maine Maritime Academy has graduates in ports all around the world and they recovered one at sea after 375 days as well as several other boats which were also successfully re-launched.

### Keep Us Posted

Every voyage is unique which makes projects very interesting to follow. If you keep us posted on your voyage, we will put it on our website for all to follow. This will give you more helpers when it comes time to retrieve your boat and the more helpers you have the better chance you will have of recovering your boat. It's also a ton of fun. And we at Educational Passages will be able to chronicle all the different voyages and interesting experiences.

### Sample Recovery Letter

Anyone who is going to try to recover your boat will need to know how to keep track of its location so be sure to let them know how to find the current Latitude & longitude. They should also probably know this is a school project involving international and environmental studies so you might want to include something like our one page informational flyer. Use the letter below if you wish.

*Dear Sirs,*

*A miniature unmanned sailboat is either just off your coastline or might have even made landfall by the time you receive this. We are hoping you or anyone else could recover our boat before it gets damaged in the surf. This is part of a hands-on learning program we are doing at (enter your school name and email address). We are learning about oceanography, earth science, geography, navigation, and hope to have a meaningful international relations experience as well.*





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*If you click on this link Take the link from the boat tracking page on the website you will see a map indicating where our boat is. Click over the boat location to find the longitude/latitude. We are hoping students could meet her as she comes ashore or maybe your local fishermen can pick her up before she comes ashore.*

*You'll find information about us in the watertight compartment and how you can email us for more information. Please take our boat to a nearby school so your students can learn as well. Let's work together, fix her up as needed and get her back to sea to continue her voyage. We'd love to see pictures and have a chance to Skype with you.*

*Thank you,*

### Environmental Stewards

Watching your mini-boat sail around the world is an amazing way to see how all water is connected. These mini-boats are high quality fiberglass boats that can sail through more than a few bumps and bruises. Still it is so important to be aware about what is put in our oceans. Everyday littering is a big problem facing our oceans. Thankfully this is a problem that everyone can help fix! When planning to launch your mini-boat, take some time and plan an outdoor clean up in your neighborhood or near your launching site. A mini-boats weighs 35 lbs. and a great goal would be to collect that much trash from your neighborhood or coastline. You'll be surprised how easy it is and you are saving the oceans, ocean inhabitants, and all people who live near the oceans from swallowing up that pollution. Of course, a great way to prevent your mini-boat from becoming ocean debris is to coordinate her rescue!

### Summation

Our mission is to provide hands-on marine science educational opportunities for students around the world. We are a 301 (c) (3) non-profit and our board of directors are made up of marine and teaching professionals. We are ready to assist your school/organization in any way we can. We want this to be an educational experience your students will never forget. We therefore encourage you to ask us questions along the way. Our experts will gladly email your school, call, Skype, or do FaceTime with your class to provide you with the best information/assistance we can.

Enjoy the passage!

Your Educational Passages Team