



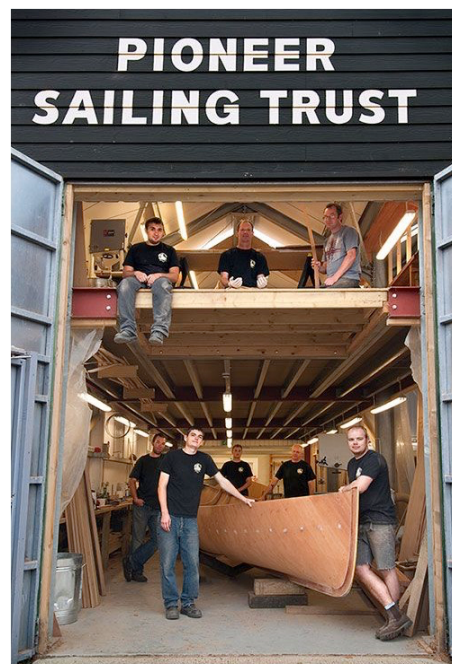
Pioneer Sailing Trust

Apprenticeship Training

Heritage Engineering Marine Technician Employer and Apprentice Information sheet

This programme has been designed by specialists from across the UK to ensure that essential skills and knowledge are passed on by experienced craftspeople to the next generation of Heritage Engineers in the marine sector.

Duration: 42-48 months
Location: Pioneer Sailing Trust, Brightlingsea, Colchester
Delivery: Block release
Group size: Maximum 12 Apprentices
Start Date: September 2023



Programme aims

To train apprentices to maintain, service, operate, repair, build, restore and conserve traditional and historical vessels professionally and with confidence. They can be propelled by sail or oar, powered by electric, steam, petrol or diesel prime movers. The fabric of the vessel may be constructed of wood, iron, steel or composites.

Heritage Engineering Marine Technicians carry out routine maintenance and restoration understanding the importance of retaining historic fabric and the original design and functionality of the vessel. The application of modern materials is undertaken in a sympathetic manner ensuring the original vessel structure, design and functionality.

Programme content

Induction, Health and Safety, Joinery

- Induction – programme, group, ethos, health and safety in the workshop
- Joinery foundation
- Hand tools and hand skills
- Use of all workshop equipment and machinery
- Trees, timber conversion, seasoning, storage, fault and effects
- Produce cutting lists
- Health and safety and environmental legislation, Sustainability

Boatbuilding and -maintenance

- Boatbuilding technology and terminology
- Historic and modern hull construction methods using wood, steel, iron, aluminium and plastics and appropriate use of materials in restoration
- The use of modern materials and methods in historic and modern vessels:
Fibreglass, carbon, natural fibres, resin, fibre-reinforced plastic, vacuum pressure and -infusion

Heritage Engineering Marine Technician

Employer and Apprentice Information sheet continued

- Technical drawing and lofting, interpretation of drawings
- Use of old and new technology to produce drawings
- Fitting out historic and modern boats
- Decks, Deck Fittings, Yacht Joinery
- Rigging, Chandlery, and Cordage
- Sailmaking, Oars and spars
- Operate historic and modern vessels
- Stabilise historical vessels to limit damage to keep a safe working environment
- Using lifting, slinging and jacking operations without endangering the vessel, components or persons
- Finishing- paint, varnish, other wood treatments and appropriate systems for longevity



Conserving Historic Vessels

- Understanding and assessing the significance of historic vessels
- Surveying of historic vessels
- Choosing appropriate pathways and materials to rebuild, restore and conserve historic vessels, ensuring authenticity and provenance.
- Using working case studies of a number of historic vessels to gain an understanding of correct terminology, different methods of propulsion, including oar, sail, diesel engines and steam, and why these vessels were chosen to restore.
- Learn the operation of historic vessels in action

Engineering

- Propulsion systems: Diesel engines, 2-stroke and 4-stroke engines, steam engines, electric and hybrid engine systems. Hydraulic drives, generators, propellers, auxiliary systems. Identify, install, service, fault finding and repair
- Engine Beds and Stern Tubes, Steering Systems
- Manufacture and replace components using conforming materials to a specification
- Operate boats and yard equipment to aid engineering tasks

Project management, Behaviours and Attitudes

- Optional work placement
- Project management, planning a refurbishment, producing a cost plan, planning, negotiating and undertaking of work to customer or funding requirements
- Develop a positive attitude and commitment toward personal responsibility and compliance, working effectively in teams, effective communication, interpersonal skills, quality problem solving, continuous professional development, equality, diversity and ethical values.