

Pleasure Craft Boatbuilders



Occupational Brief Title Codes:

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Occupational Subtitles:

- Assemblers
- Boat Outfitters
- Boat Riggers
- Fiberglass Laminators
- Joiners
- Marine Machinists
- Press Operators
- Sail Cutters
- Sail Layout Workers

Work Classification Based Related

D.O.T. Occupations:

- Aircraft Body Repairers
- Automobile Assemblers
- Boilermakers
- Riveters
- Sheet-metal Workers
- Steelworkers

Interests Based Related

G.O.E. Occupations:

- Aluminum Pool Installers
- Awning Makers and Installers
- Coppersmiths
- Elevator Constructors
- Riggers (Acrobatic Equipment)
- Tank Builders and Erectors

Skills Based Related

O*NET Occupations:

- Brickmasons and Blockmasons
- Cabinetmakers and Bench Carpenters
- Drywall Installers
- Metal Fabricators, Structural Metal Products
- Recreational Vehicle Service Technicians
- Rough Carpenters
- Ship Carpenters and Joiners
- Stonemasons

Pleasure craft boatbuilders (ˈplea-sure ˈcraft ˈboat-build-ers) construct and repair motorboats, cabin cruisers, sailboats, rowboats, canoes, and other boats used mainly for recreation.

Over the centuries, many people and cultures have sailed, rowed, or paddled boats both to earn their livelihood and for pleasure. They propelled the boats through the water with oars or paddles, or equipped the boats with sails to catch the wind.

In the twentieth century, the internal combustion engine, adapted for boats, made the motorboat possible. Boating for pleasure became a worldwide pastime. People travel in boats, fish from boats, and race boats. Some people actually live on boats.

In the United States, pleasure boating takes place in all kinds of water craft. They may include rowboats, canoes, yachts, motorboats, cabin cruisers, launches, houseboats, and pontoon boats. They may be made of wood, aluminum, fiberglass, or composite materials.

The term boat refers to small and medium-sized craft that operate on inland rivers, lakes, and canals; along the coastal waters; and at sea. The boatbuilding industry does not include shipbuilding and repairing, or inflatable boats. The term ship refers to large craft that navigate on the oceans and the Great Lakes. In general, shipyards build ships. Some shipyards, however, build large boats.

The boatbuilding industry does build some boats for commercial use. One such boat is the small craft used for police patrol, for fishing on inland and coastal waters, and for passenger carrying services. There is a substantial workboat industry in the Gulf Coast states, but the greatest production in the boatbuilding industry consists of pleasure craft. They produce boats ranging in size from canoes to sailing vessels for the America's Cup.

Although it is not a large industry, boatbuilding requires skilled craftworkers with both standard and new techniques for the building and repair of boats. Building an aluminum canoe may be a fairly straightforward process conducted on an assembly line. Constructing a custom-built sailing yacht takes a great many special skills.

Work Performed

Some boatyards produce custom-built boats by age-old methods. Pleasure craft boatbuilders adept in many skills make wooden boats. They follow blueprints and designs to make patterns and forms. To begin, they use markers, scales, and protractors to lay out a full-scale outline of the boat on a loft floor. From the outline, they make templates (pattern pieces of the parts). They place these templates on wood or lumber and outline them. They cut and shape parts such as keels, ribs, and siding.

To assemble the hull (body) of the boat, pleasure craft boatbuilders may have to bend some of the pieces to make them fit. They put the pieces in a steam chamber to soften them. Then they bend and fasten them to the keel. The keel is the long timber or plate extending through the center of the bottom of the boat.

They may fasten the ribs to the keel and cover the ribs with planking. Metal boats are fabricated the same way, but workers assemble the pieces by riveting or welding them together.

Pleasure craft boatbuilders also build and install structures such as the pilot house, cabin, rudder, and the foundations for machinery, shafting, and propeller supports. They install the decking, masts, booms, and ladders.

Joiners install the wooden furnishings on boats. These include the woodwork, doors, paneling, and so forth. The wood may be mahogany, plywood with a special surfaced veneer, teak, or oak. They may have to match the grain of the wood, and shape irregular parts to fit. They also fit hardware to these units. They install glass in the cabins, skylights, and other parts of the boat.

Boat riggers install the accessories in inboard or outboard motorboats. They attach brackets and install items such as lights, batteries, ignition switches, fuel tanks, steering controls, and guide pulleys. They may install inboard and outboard motors.

Boat riggers may also install equipment used on fishing boats to net or catch fish. They may install machinery to haul in nets, or booms to guide the loads as they rise from the water and are deposited in the hold.

Aluminum boats have preshaped parts or assemblies, which workers put together. In plants that make small aluminum boats and canoes, **press operators** tend a press that molds sections to shape. They insert a sheet of aluminum into the press, apply pressure, and remove the shaped part. **Assemblers** fit and rivet the aluminum sections together. When the boat is assembled, they seal the seams with aluminum caulking compound. They may smooth rough seams with a file. Other assemblers install hardware and apply sealers or paint.

Many pleasure craft are made of fiberglass. Some are 100 to 120 feet long. **Fiberglass laminators** build up layers of resin-soaked fiberglass on a full-scale wooden or plastic mold to form a hull, deck, or other boat part. They select precut fiberglass mat, cloth, and wood bracing materials according to the model of the boat. They fit layers of mat and cloth to the mold and smooth out the wrinkles. They trim off the excess material. Then they brush or spray a mixture of resin and catalyst into the cloth and mat. They work the mixture into the layers and use a squeegee to smooth the material against the mold and squeeze out air bubbles.

Fiberglass laminators may bond fiberglass or wooden stringers to the fiberglass hull before it hardens. Stringers are horizontal wood or fiberglass strips that strengthen the hull of the craft. They may also place sheets of plywood or plastic foam in the molded fiberglass hull to strengthen the boat bottom. When the whole assembly hardens, workers lift it from the mold. In some boatyards, workers pressure-spray materials into the mold. Firms that mass-produce

smaller fiberglass boats may use a vacuum press to shape hulls.

Boat outfitters install parts such as hatches, hardware, metal trim, seats, cabinets, and windshields on fiberglass, aluminum, and wooden boats. They find and mark the position for the parts, install mounting braces, and bolt the parts in place. They may apply caulking around windows and windshields. These workers may saw aluminum trim and fasten it in place. They may grind interior and exterior surfaces of the hull to remove burrs and rough edges.

Marine machinists install and repair boat engines or motors. They may work on diesel, electric, or gas engines. They install generators, pumps, heaters, condensers, blowers, and other units. They work from the manufacturer's installation manuals and blueprints.

Workers also make the sails for sailboats and yachts. **Sail layout workers** follow design specification and dimensions and draw patterns of sails on the loft floor. They compute the dimensional allowances for the draft of sail and the stretching of sail cloth, and then draw the actual size and shape of the sails on the loft floor with chalk, chalkline, and measuring tape.

Sail cutters spread sail cloth over the floor patterns and fasten it in position using weights or awls. They mark the outlines on the cloth and cut the cloth along the outlines to correct length and shapes for sewing into sails. They mark seam lines and other guidelines for assembly. Other workers sew the sections together and install grommets, metal fittings, and fasteners.

Working Conditions

Boatbuilders may work outdoors in large boatyards, in sail lofts, or under sheds. Workers for companies that build boats on assembly lines work indoors. On large boats, workers may bend, stretch, kneel, and stand while performing their tasks. They work with hand and machine tools. Boatyards observe government rulings on safety to insure that workers follow rules to avoid injury.

Hours and Earnings

Most pleasure craft boatbuilders work forty hours a week. Some may work overtime or on weekends when working on special projects with specific deadlines. Self-employed boatbuilders may work irregular hours.

The diversity of skills required to build a boat creates a broad wage structure for these workers. Pay reflects skills, experience, and time on the job. Unions negotiate the pay rates of workers in union shops. The Bureau of Labor Statistics classifies these workers with other carpenters. In May 2003, these workers earned an average of \$16.00 an hour. Wages ranged from a high of more than \$28.00 an hour to a low of less than \$10.00 an

hour. Skilled workers may make much more than the average. For instance, according to recent listings, sail layout workers may make \$50,000 or more a year.

These workers get overtime pay for working more than forty hours a week, and for working on Saturdays, Sundays, and holidays. Workers in small boatyards with seasonal slumps may experience layoffs. Workers in most boatyards and plants have paid vacations, holidays, and sick leave. Benefits may vary with the size of the company.

Education and Training

Boat manufacturers who produce boats on an assembly line may hire unskilled workers and train them on the job. Boatyards that produce custom-made fiberglass, wooden, or aluminum boats must have skilled workers. Most employers prefer to hire high school graduates.

Students interested in boatbuilding should take high school courses related to their special interest, as well as mechanical drawing, computer-aided drafting and design, carpentry, and machine shop. An interest in boating and practical skills in boat navigation will also be useful to individuals who build and repair boats.

Many pleasure craft boatbuilders acquire their skills in an apprenticeship. This kind of formal training usually takes three or four years. It is available in boatyards or shipyards. Apprentices learn their craft under the supervision of experienced workers. As they gain experience and proficiency, new workers progress to more difficult tasks. Those who successfully complete the apprenticeship become journeyworkers.

A few technical schools offer programs of study in boatbuilding and repair. Studies cover courses such as woodworking tools and machinery, traditional boatbuilding, small craft design, and so forth.

Marine machinists should have a basic knowledge of electronics, which are used increasingly in many components of boat engines and equipment. Machinists should be familiar at least with the basic principles of electronics in order to recognize an electronic malfunction that may be causing a problem.

Unions and Professional Societies

Many craftworkers in this industry belong to unions representing specific trades. The principal union representing more than 100,000 pleasure craft boatbuilders is the International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers.

The National Marine Manufacturers Association is a group of more than 1,400 companies that produce about 80 percent of all the boats sold in the United States. This organization certifies marine products and also participates in the development of safety standards for recreational craft.

Personal Qualifications

Pleasure craft boatbuilders should be able to work well with others since they are often a part of a team. An interest in tools and machines is also important. Those working on an assembly line should be able to tolerate the monotony of doing the same task over and over.

Occupations can be adapted for workers with disabilities. Persons should contact their school or employment counselors, their state office of vocational rehabilitation, or their state department of labor to explore fully their individual needs and requirements as well as the requirements of the occupation.

Where Employed

Boatyards operate along the coasts of the United States as well as near inland lakes. Many are in Maine, which has a three-hundred-year history of boatbuilding and shipbuilding. New Hampshire, North Carolina, Massachusetts, Rhode Island, and Connecticut also have many boatbuilding firms. New Jersey and Florida are other states active in boatbuilding. Michigan, Minnesota, and Wisconsin, bordering the Great Lakes, have numerous boatbuilding firms. Many others are in inland states such as Ohio, Tennessee, Arkansas, and Indiana. California, Washington, and Oregon also have boatbuilding plants, many of which build large boats and yachts.

Employment Outlook

According to the Bureau of Labor Statistics, in the year 2003, about 60,000 pleasure craft boatbuilders were employed in boatyards or self employed throughout the United States. More than 6,000 marinas, boatyards, and yacht clubs serve American boaters. About 1,800 boatbuilding firms exist in the United States. Many employ hundreds of workers.

Recreational boating is extremely popular and will continue to be so. Each year, more than 50 million Americans use more than 18 million recreational boats. The increase of disposable income in the years of economic prosperity should give consumers more dollars to spend on luxury items like boats.

Entry Methods

Job seekers should go to boatyards or boat manufacturers and submit an application. Information on apprenticeships is available from any state employment office. Unions also sponsor apprenticeships.

Graduates of vocational or technical schools can get job leads from their school placement office. They can also read magazines or journals about the boatbuilding industry to get an idea of where these plants are located and what they require of workers. Newspaper want ads, employment agencies, and the Internet are other sources of job leads.

Advancement

Advancement in production plants usually takes the form of higher earnings for time on the job or for skills acquired. Skilled workers in boatyards usually advance by accepting more responsibility. They may become group leaders or supervisors over a group of craftworkers.

Skilled craftworkers may also transfer to the shipbuilding industry, which pays higher wages. The shipbuilding industry is highly unionized, however. Workers entering this field will be the lowest in seniority.

A unique opportunity for boatbuilders is in ship restoration. Several museums are in the process of restoring vessels to their original condition. They need workers with traditional boatbuilding crafts. Museums prize these workers and pay them attractive salaries. The Maine Maritime Museum has a training program in ship preservation skills that is eighteen to twenty-four months long.

For Further Research

International Brotherhood of Boilermakers, Iron Ship Builders, Blacksmiths, Forgers and Helpers, 753 State Ave., Kansas City, KS 66101. Visit their Web site at: www.boilermakers.org

National Marine Manufacturers Association, 200 E. Randolph Dr., Suite 5100, Chicago, IL 60601. Visit their Web site at: www.nmma.org

WoodenBoat Publications, Inc., Naskeag Road, P.O. Box 78, Brooklin, ME 04616.

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Noteworthy Quote

"Boating is a craft, learned over time. While certainly not the highest paid occupation, one gains a great sense of accomplishment from taking a piece of paper and converting that into a working, operating craft. A boat is different from a house—there are no square corners, and she has to move through the water. A sailboat must do this by her own design."

-Nimble Boats, Odessa, Florida.

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