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Working vacations: Jobs in tourism and leisure

Royce Rosenhauch knows how to have fun. As a resort activities director, it's his job to keep guests entertained. "On a given day, I might be setting up anything from bingo night to s'more-making to paddle boats."

Vacation jobs, like Rosenhauch's, often mix work and play. And for some, the job is their ticket to career happiness.

Keep reading to learn more. The article's first section describes four selected vacation jobs. The second section helps you decide if a vacation career is a good fit for you. A third section explains how to find and get these jobs. Sources of information are at the end.

Vacation jobs

Vacation-related jobs are as varied as types of vacations themselves. Many vacation jobs are associated with travel, lodging, food, entertainment, or leisure.

Flight attendants, bus drivers, and other transportation workers help people get to their destinations. Travel agents arrange vacations. Bellhops, front desk personnel, housekeeping staff, and others provide accommodations in resorts, hotels, and other lodging places. Landscaping and groundskeeping workers create and maintain idyllic outdoor settings. And cooks, servers, and bartenders, are among the food service workers providing vacationers with food and drink.

Together, these occupations provide many opportunities—and many have few requirements for workers who are new to the jobs.

In certain settings, almost any occupation can be a vacation job. For example, electricians are needed aboard cruise ships to ensure that the boat's electrical system works. Retail workers sell souvenirs to tourists. And accountants help resorts balance their books.

However, some occupations focus primarily on vacations. This section takes a closer look at four jobs specific to entertainment and leisure: cruise ship musician, destination marketing manager, resort activities director, and river rafting guide. Workers in each of these occupations help vacationers enjoy their

leisure time. And see the box on page 5 for a brief description of work in the relatively new, but increasingly common, field of sustainable tourism.

Cruise ship musician

People who are on vacation like to be entertained. That's why cruise ships offer musical entertainment ranging from Broadway productions to top-40 bands. And many types of musicians provide this entertainment.

Most cruise ships have an orchestra or show band, as well as a variety of other group performers or soloists, such as piano bar entertainers and lounge musicians. Ships typically have several lounges, each featuring a different type of music. One lounge may feature a classical string quartet; another may offer the syncopated sounds of a jazz trio.

"There are so many different music positions on board ships," says Dave Hahn, a keyboardist who has had several cruise ship jobs. His first job was in the show band, where he performed at welcome receptions and as the backup for all main stage performances.

In his position, Hahn would work about 10 to 20 hours a week, mostly in the evenings. "We would do about four or five sets a night, six nights a week," he says. Many of the musical offerings aboard cruise ships are at night, but when the ship is at sea, musicians sometimes play during the day. Musicians also attend rehearsals, although they should be ready to play with little preparation.

Cruise ship musicians often have other responsibilities besides practicing and performing. "When you're not playing your instrument, you're like a crew member," says Hahn. This means that musicians are required to take part in the regular safety drills required of crew members, such as lifeboat drills. It can also mean living in crew quarters, often with a roommate.

Musician jobs vary considerably. In his second job on a ship, Hahn was hired as a guest performer. "I was kind of like a performing passenger," says Hahn. He performed about 5 hours a week, stayed in a passenger cabin, and didn't participate in safety drills.

Elka
Maria
Torpey

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Cruise line musicians usually work under a contract, which stipulates the duration of the job, pay, and other benefits. Most contracts last between 3 and 6 months. Many musicians are on cruise lines for a limited time. “People tend to work between 6 months and 3 years,” says Hahn, “although there are a few lifers.”

The fact that musicians must live aboard the ship is one reason why careers are short. “You don’t ever leave work. You’re always there,” says Hahn. Cruise ships also have rigid rules and regulations. That’s something musicians don’t encounter in other jobs, and some feel inhibited by the lack of freedom. “Cruise ship musicians often have problems with the structure,” says Hahn. And although constant travel can be great in the short term, many prefer more stability in the long term.

But these musicians also have a lot of free time, especially when the ship is in port. During this time, they are free to leave the ship and enjoy the locale. “The ships follow beautiful places and beautiful weather,” says Hahn. “Every day we’d go to some gorgeous place.”

*Cruise ship musicians
play a variety of
musical styles.*



Employment and wages. In May 2009, there were 47,260 musicians and singers employed in the United States, according to the U.S. Bureau of Labor Statistics (BLS). A small percentage of these jobs were held by cruise line musicians; because many of these workers are considered to be self-employed contractors, however, their employment is not included in the data.

BLS data show that the median hourly wage of all musicians and singers was about \$22 in May 2009. (BLS does not publish annual wage data for these workers because most of them are paid an hourly rate that might not span a full year of employment.) But cruise line musician wages vary significantly. Sources suggest that wages range between \$450 and \$2,000 or more a week; health insurance coverage may also be included. Cruise line jobs have other benefits as well, such as free travel, room, and board.

Qualifications. Musical ability is the primary requirement for getting a job aboard a cruise ship. To secure a position, musicians must first audition. Being able to play a variety of musical styles and repertoires can improve the chances of getting a job. Employers also take into account a musician’s previous performance history and related education or training.

Orchestra or show band musicians must be able to sight read music. Skilled players of the keyboard, piano, saxophone, guitar, electric bass, drum, trumpet, and trombone are in greatest demand. Big band or jazz band experience also is required for some orchestra positions. In addition, ability to improvise is beneficial.

Some cruise line musicians get their jobs directly from the cruise line, and others go through a talent agency. Agencies facilitate the hiring process, but they also take a percentage of the musicians’ pay.

Destination marketing manager

In planning a vacation, or in planning what to do while on vacation, you’ve probably encountered the work of destination marketing managers. These workers promote vacation

Vacation alternatives: Sustainable tourism

Vacation careers are directly linked to the tourism industry. A popular segment of that industry is sustainable tourism, which promotes economic development, cultural preservation, and environmentally friendly tourism in underdeveloped countries.

Cat Wood recently spent 2 years in the Dominican Republic involved in sustainable tourism. She awarded U.S. Government grant money to local community-based organizations for ecotourism projects. “Tourism is the Dominican Republic’s number one export,” says Wood. “But most of the tourism is in all-inclusive resort towns.”

Part of Wood’s mission was to bring visitors to other regions of the country to diversify the economic effects of tourism while limiting environmental impact. For example, Wood helped to build cabins for visitors in a remote area near the Cordillera Central mountain range; she also oversaw installation of safety equipment at a series of waterfalls down which vacationers jump or slide.

Wood spent some of her time at a desk, but her work also presented her with



opportunities to enjoy her surroundings. “I oversaw the progress on projects,” she says, “sometimes taking hikes on new trails or testing new ecotourism activities.”

International development jobs abroad, such as the one Wood had, usually last only as long as it takes for the grant projects to be completed. But even in the short term, these jobs can be a great way to gain leadership and other practical experience.

“The best part was working with the rural communities. Dominicans are known for being hospitable,” says Wood. “And once you get out into the countryside, the scenery is breathtaking.”

spots or attractions to tourists and other visitors. They work for a variety of employers, including visitors’ and convention bureaus, State tourism agencies, and marketing firms. And they have a variety of job titles, including tourism marketing managers and destination marketing coordinators.

Destination marketing managers draw people to a destination in several ways. They start by identifying possible market groups for their destination, which may include everyone from local families to international travelers. They then develop a plan to reach those groups within a specific budget, targeting them through promotional materials—such as newspaper ads, visitors’ guides, and television commercials—and they often oversee the creation of these materials.

Lilly Kelly works as a destination marketing manager for the Anchorage, Alaska,

visitors’ bureau. “We advertise at the local, national, and international levels to draw people to Alaska,” she says. Many visitors’ bureaus, including the Anchorage one, publish official guides for tourists. These guides usually include information about local restaurants and entertainment, as well as audience-specific resources, such as guides for budget-conscious travelers.

To create these materials, destination marketing managers work with advertising agencies, photographers, graphic designers, and others. Destination marketing managers also work with the local businesses that are members of the visitors’ bureau and are featured in its publications.

The job tasks of a destination marketing manager vary by the size of the visitors’ bureau and by individual position. Teresa Ide works for the Spokane, Washington, visitors’

Excellent research and communication skills are important for destination marketing managers.



bureau. Her job involves managing social media, such as Twitter and Facebook. “I post to the Visit Spokane fan page on Facebook once or twice a day, I tweet about five times a day, and I blog for our Web page,” she says in describing some of her activities.

Some of Ide’s messages promote Spokane itself; others are about some of the 600 hotels, bars, and other businesses that are members of the visitors’ bureau. Still others are conversational. “In a post, I might ask questions like, ‘What are you doing tonight in Spokane?’” she says. Fans then reply, listing their activities, and these interactions serve as indirect advertising for the locations and attractions the marketing manager represents.

E-newsletters are another way that destination marketing managers promote their locales. “Whenever we go to trade shows or have visitors come into our visitors’ information center, we have people fill out a form to get on our mailing list,” says Ide. People sign up to receive emails on different topics, such as food or art, depending on their interest. An e-newsletter on the outdoors, for example, might feature short stories about picking

apples at local orchards or cross-country skiing. “It’s challenging always coming up with new ideas,” says Ide, “but it’s fun.”

Communication is a big part of destination marketing managers’ job—and not just talking to others, which they do a lot. “Between the print publications, our Web site, and email, I do a lot of writing,” says Kelly.

Sometimes, destination marketing managers participate in the vacation activities that they write about. “Last weekend I went to a play in Spokane, and I wrote about that in our blog,” says Ide. She is occasionally invited to events, but mostly she uses personal time to visit area attractions.

The work of destination marketing managers is similar to that of other marketing managers; however, there are nuances unique to the travel and tourism industry that set it apart. One difference stems from the products being marketed: namely, a vacation destination and its numerous options for fun and leisure. “I get to write about different, exciting things,” says Ide. “I’m always researching what’s current and the latest fad.”

Employment and wages. Cities and towns of all sizes have visitors' bureaus, and many of them employ destination marketing managers. In May 2009, there were 169,330 marketing managers, according to BLS. Some of these workers market tourist destinations.

Wage data from BLS show that marketing managers had a median annual wage of \$110,030, or a median hourly wage of about \$53, in May 2009, although anecdotal sources suggest that destination marketing managers may earn less than this amount.

Qualifications. Requirements for destination marketing managers vary, but most workers have at least a bachelor's degree. Degrees are usually in marketing, business administration, advertising, or a related subject. An emphasis in travel industry management or tourism studies, or coursework in tourism marketing, is helpful.

Hands-on experience in the tourism, hospitality, or convention industry is also important for these workers. Ide was an intern at an advertising firm that works with the Spokane visitors' bureau, for example; Kelly worked as a tour guide for the Alaska Railroad.

And destination marketing managers must be creative and work well with others, as they often complete projects as part of a team.

Some of what it takes to be successful in the field isn't related to education, experience, or skills, however. Most people in the occupation are fond of both the places they promote and the concept of these places as a destination spot. "I feel like I got the job because I love the location," says Ide. "I've lived in Spokane my whole life, so I really know the area. And I love to travel, so I know what people want to know when they travel."

Resort activities director

Vacation resorts exist nationwide, and most offer a wide range of activities for their guests to enjoy. A ski resort, for example, might offer after-ski activities such as ice skating or wine tastings. A beach resort might organize cookouts, water sports, or luaus.

The person in charge of these offerings is the resort activities director. Activities

directors either lead activities themselves or oversee the work of others who run them.

Royce Rosenhauch is an activities director at a ranch resort in Canton, Texas. There are four facets to his work. "I do activity, event, Web, and brochure development," he says. "The last two are very important because otherwise, no one knows about the first two."

Activities directors might put together a calendar of events and schedule of activities, which are usually posted on the resort's Web site. They also help to create brochures for distribution. Other promotional materials, such as newspaper or magazine advertisements, may also be created under the activities director's supervision.

When planning events, activities directors consider the interests of their clients. Some activities directors develop programs specifically for children, for example; this is true of Rosenhauch, who welcomes many guests to the resort for family reunions.

Activities directors usually offer a variety of recreational options—including some that involve less strenuous fun. "Almost anything you'd have in a physical education class can be an activity," says Rosenhauch, "but I'm working on a cooking show because some of our guests don't want to do something physical." Music and skits are among the other activities he helps to organize; sometimes, he performs in the skits himself.

Rosenhauch is especially involved in developing new ideas for activities because his resort is fairly new. Other activities directors oversee well-established or recurring programs and events. Often, these events play a larger, promotional role for the resort. Well-attended events can serve as an attraction themselves, bringing in more people and stimulating new business. Last summer, for example, Rosenhauch organized a fishing tournament, which helped draw more people to the resort.

Employment and wages. Many resorts hire activities directors. Other vacation-related jobs exist on cruise ships, where the person in charge of coordinating activities is often referred to as the cruise director. BLS does

not collect data specifically for resort activities directors. Their duties, however, closely match those of workers in the broader occupation of recreation worker. In May 2009, there were 286,230 recreation workers in the United States, and 8,760 workers were employed in the accommodation industry.

According to BLS, in May 2009 the median wage for recreation workers in the accommodation industry was \$22,280 a year or about \$11 an hour—somewhat less than the corresponding wage for all types of recreation workers. Activities directors, however, reportedly earn more than this amount.

Qualifications. Organizational ability, leadership, and communication skills are important qualifications for activities directors. And being able to assume responsibility and work well with diverse people of all ages is critical.

Computer design skills are also valued. “The more you can do with the Web and graphics, including photo and video editing, the more desirable you are to employers,” says Rosenhauch.

Employers also look for workers with experience running activities or events, particularly in a social or recreational program. This experience might include an internship at a resort, a summer spent as a camp counselor, or time volunteering to run church events. “When I was looking for jobs,” says Rosenhauch, “more people said experience, rather than education, was what they wanted to see.”

But higher education also may be required. Many activities directors have a bachelor’s degree, often in parks and recreation or a similar field, and some have a master’s degree. Activities directors in other settings, such as nursing homes, may have additional or different requirements.

River rafting guide

Adventure travel is a popular vacation choice for some. River rafting guides lead clients on single- or multi-day whitewater rafting adventures.

When leading people down a river, guides experience—just as their clients do—the

thrill of the rapids and the beauty of their surroundings. “It’s great to be in these incredible places,” says river rafting guide Kamron Wixom. Wixom works on the Colorado River as it runs through the Grand Canyon in Arizona.

Navigating the river is a big part of guides’ job, but it’s not the only one. Preparing for a trip is among their first tasks. “We load up a truck with ice, coolers, food, oars, paddles, spare motors, rubber rafts, and frames,” says Wixom. “Then we bring it to the ‘put in,’ where we unload, assemble the rafts, and strap everything in.”

River rafting guides are responsible for the safety of their clients, so they must be sure to have life vests and other safety equipment on board. When the clients arrive, guides talk to them about safety and what to expect on the river. Depending on the clients’ rafting experience, guides might seek extra whitewater excitement or traverse through calmer waters.

Guides also give environmental talks about an area’s geology and the flora and fauna around the river. They might discuss the history of an area or engage clients in other ways. “Talking and exchanging stories is a really important part of the trip,” says Wixom. Sharing information adds to a trip’s value, often creating lasting memories for clients and guides alike.

River rafting guides’ jobs vary, depending on the length of the trips they lead and on their employer. Some guides, for example, take multiple short trips in a single day. Wixom usually works overnight trips, staying out for 10 or more days at a time. On these extended trips, he helps to set up campsites and prepare meals. Other guides might also work off-river, helping to manage equipment rentals or to make reservations for trips.

But a key part of any guide’s job is making sure that clients are enjoying themselves. “One of the best parts is seeing people experience a trip down the river for the first time,” says Wixom. “We’re out there all the time, so it’s like our own little playground, but they’ve never seen it before. I love seeing their excitement and seeing the change that comes over

them. It really can change their lives, and that's cool to see.”

Employment and wages. Employment of river rafting guides is possible only near rivers that have a water level deep enough for rafting.

BLS includes river rafting guides in the larger category of travel guides. In May 2009, there were 4,270 travel guides of all kinds in the United States. They earned a median hourly wage of about \$15. Anecdotal information suggests that river rafting guides earn \$50 to \$100 or more per day. Some also receive tips, and pay can be higher for trip leaders.

Work as a river rafting guide is seasonal. “There are some guides who work all year long,” says Wixom, “but you definitely have to move around, because the rivers dry up.” Many river rafting guides supplement their income by working at ski resorts or some other adventure-related endeavor.

Qualifications. No formal education is required to become a river rafting guide. However, these workers need special training. Training is often provided by employers and covers first aid, cardiopulmonary resuscitation

(CPR), food safety, wilderness response, swift water rescue, and river safety training.

Through on-the-job training, guides typically learn about the logistics of planning and leading a trip and about geology and related topics. Some guides start their training as “swampers,” or extra crew members, learning the job tasks while they help more experienced guides. Certain States, such as Utah, require guides to be licensed before they can become trip leaders.

Experience with river rafting is also helpful, although not always required, to get a job. Rapids are generally classified by difficulty level, and only the most experienced guides lead trips down higher level rapids.

In addition to being friendly and dependable, river rafting guides should be athletic. “It’s very physical work,” says Wixom. “You have to be limber and able.” Guides who are outgoing, have an engaging personality, and can entertain guests also stand out. “We have one guide who does hula-hooping,” says Wixom. “Employers are looking for someone personable and with an interesting story to tell.”



“It’s great to be outdoors and in these incredible places.”

*—Kamron Wixom,
river rafting guide*

Is a vacation career for you?

People doing vacation work say that it's often fun and dynamic: The jobs are associated with enjoyable activities, and workers interact with an ever-changing clientele as vacationers come and go. "Every day is different, every day holds something new," says destination marketing manager Lilly Kelly. Teresa Ide agrees. "I'm not one who likes to do the same thing over and over again," she says. "The best part is that everything is always changing."

Many vacation workers enjoy meeting new and interesting people, whether they're

Travel and tourism workers experience vacation destinations firsthand.



colleagues, vacationers, or local residents. "The camaraderie between the guides is fun," says Wixom. Hahn adds, "I got to meet people that I never would have had a chance to meet and to learn about cultures that I never would have known about."

Undoubtedly, some of the appeal of vacation work is the chance to see the world and experience vacation destinations firsthand. "The travel is amazing," says musician Hahn of his jobs aboard cruise ships. "After my first gig, I'd seen 32 countries—the best parts of those countries."

And many times, these workers benefit when they take their own vacations, often receiving discounts for travel, accommodations, or other services. They might also have a better idea about where to go or what to do on vacation, given their experience in the tourism industry.

But, says Hahn, it's not all fun in the sun. For example, the work felt isolating to him at times. "People come and go so much," he says. "It's a very transient lifestyle."

In contrast to vacationers, who are relaxing and having fun, vacation workers have many responsibilities. "There's a lot of potentially backbreaking work," Wixom says. "It's not 100 percent glamour." Some of the jobs require working long days or nonstandard hours to accommodate vacationers' needs.

Also, because people tend to vacation seasonally—such as during the summer—vacation work itself is often seasonal. Workers might be very busy at some times and less busy, or not working at all, during others.

Vacations aren't always perfect, but vacation workers strive to make them seem that way. Workers who deal directly with vacationers need to be extroverted and upbeat. "People like to see enthusiasm, because they're on vacation," says Rosenhauch.

Remaining cheerful all the time is sometimes challenging, says Wixom, but that's where workers' traits can help: "Having a personality that's fun and entertaining, and that can remain that way even during difficult times, is important."

But good customer service can't fix everything. "Bad weather can be a challenge," says Rosenhauch. "You always have to have a backup plan."

Despite its occasional pitfalls, however, vacation work has at least one advantage over many other types of jobs: location. For many of these workers, a vacation career offers the chance not only to be outside of an office but to actually be outside. "The best thing about my job is being outdoors," says Wixom. "I'll be swimming in a waterfall and think, 'Man, I'm getting paid for this.'"

Getting the job

Depending on the type of vacation job that you want, you might approach jobseeking several ways. Often, the best way to find a job in a specific destination is to search locally. Visit nearby resorts or other tourist-oriented businesses and ask about available openings. Check classified ads online or in newspapers to see who's hiring. Visitors' bureaus and chambers of commerce can help you identify businesses in your area that cater to tourists.

When searching for jobs online, target your search. For example, go directly to the Web sites of resorts, cruise lines, tour companies, or other vacation-related businesses to find out if they're hiring. Most sites have a section on employment opportunities that is accessible from their home page.

There also may be specialty Web sites dedicated to vacation work, such as jobs at resorts or on cruise lines. However, use caution when accessing these sites. Some charge for information that may be available elsewhere free of charge. Job postings for some positions are also on association Web sites.

Getting a vacation job requires persistence. Internships or volunteer work can help prospective workers gain experience and make contacts in their field. "Hands-on job experience in the tourism industry can give you more of a competitive advantage," says Kelly.

And networking is crucial, say workers. Rosenhauch stresses the importance of

networking because of the competition for vacation careers: "There aren't a lot of these jobs," he says, "so who you know is really important."

Rosenhauch applied for several positions before he landed his current one—and getting the job meant relocating. Nevertheless, many vacation workers say that their jobs are well worth the effort it took to get them.

For more information

The *Occupational Outlook Handbook* provides detailed information on many vacation-related occupations, including waiters and waitresses and retail sales workers. The *Handbook* is available in many public libraries and career centers or online at www.bls.gov/ooh.


In addition, check the resources below to learn more about vacation jobs. Keep in mind, however, that the resources featured are not the only ones available. Broaden your search by researching businesses in your desired locale.

To learn more about becoming a cruise ship musician, visit www.musicianwages.com. And Cruise Lines Association International has links to several cruise lines' career sites at www2.cruising.org/shipboardEmployment.cfm.

Find available job openings at visitors' and convention bureaus on the Destination Marketing Association International's career site, <http://careers.destinationmarketing.org>, and by visiting the Web sites of individual visitors' and convention bureaus.

Hospitality jobs are listed on www.hcareers.com, also accessible through the American Hotel and Lodging Association's Web site, www.ahla.com.

For information about river rafting guide opportunities, Rafting America, online at www.raftingamerica.com, has a list of selected companies in the United States and Canada that offer whitewater river rafting.

Information about scholarships for travel and tourism or hospitality students is available from Tourism Cares: www.tourismcares.org/scholarships. 

A photograph of a wind farm at sunset. The sky transitions from a deep blue at the top to a bright orange and yellow near the horizon. Several wind turbines are silhouetted against the sky. One large turbine is in the foreground on the right, with its three blades blurred from motion. Three smaller turbines are visible in the background to the left and right. The overall scene is peaceful and highlights renewable energy.

Careers in wind energy

You see them with growing frequency in some parts of the country: wind turbines, their large blades rotating through the air, far overhead. As a common form of renewable energy, wind power is generating more than just electricity. It is increasingly generating jobs for workers in many different occupations.

The wind energy industry has experienced rapid growth in the past decade. According to the American Wind Energy Association, in 2000, installed wind energy capacity in the United States was less than 3,000 megawatts. It is now more than 35,000 megawatts, enough electricity to power almost 10 million homes.

According to the association, about 85,000 Americans currently work in the wind power industry and related fields. Many workers are employed on wind farms: areas where groups of wind turbines produce electricity from wind power. Wind farms are frequently located in the midwestern, western, and north-eastern regions of the United States. Texas, Iowa, and California are the leading States in wind generating capacity.

But many other States are in the process of substantially increasing their wind-generating capacity, and there are wind energy jobs nationwide. Much wind turbine manufacturing is located in traditional manufacturing areas in the Great Lakes and Midwest. Even the Southeast—an area that does not have sufficient wind for generating power—has plants that manufacture wind turbines and components.

This article provides information on some of the career opportunities in wind power. The first section provides an overview of the wind energy industry and the work that goes into building a wind farm. The second section describes selected professional, construction, production, and transportation occupations in the wind energy industry. The third section gives information on typical education and training backgrounds for

workers in these occupations. A final section contains sources for additional research.

Building a wind farm

Developing a wind farm is a challenging process and usually takes several years from inception to construction. This section describes that process, from site selection to operation, and the equipment used in building wind farms.

Site selection and preparation

The wind farm development process begins with the selection of an appropriate site. Engineers and scientists evaluate sites based on several factors, including wind speed and variability, availability of land, the ability of the ground to support the weight of turbines, and environmental concerns.

Project development also has many legal and financial components, such as contract development and financing. Lawyers and permitting specialists are necessary to deal with local, State, and Federal regulations. Land purchasing agents are required to purchase or lease the land.

Because of the size, cost, and complexity of turbines and the difficulty in selecting a site, turbine manufacturing usually runs concurrently with site development. So, developers order turbines during the project development phase.



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Turbines

Wind turbines consist of three major components—the blades, tower, and nacelle—each of which must be designed and produced separately. Modern turbine blades are made of fiberglass and, in onshore models, are frequently more than 100 feet long. Towers are made of several steel segments placed atop one another and can be up to 300 feet tall. The nacelle is the brain of the wind turbine. It is a box resting atop the tower and contains the turbine's controls, gears, generator, and other mechanical components.

The nacelle also contains many highly sophisticated electronic components that allow the turbine to monitor changes in wind speed and direction. To safely and efficiently harness power from the wind, these components direct the wind turbine to turn on and off or change direction automatically.

The blades, tower, and nacelle may be manufactured by a single company or by several working together. But even companies that assemble all their own turbine pieces buy components from third-party suppliers. Smaller companies that make specialized parts, such as blade epoxies and gears, are an important part of the wind industry.

After turbine parts have been manufactured, they need to be delivered to the worksite. Many wind farms are located in remote locations far from turbine manufacturers. Because of the extremely large size of these components, specially designed trucks and railcars are necessary to transport them to worksites. Construction crews build access roads to accommodate these unwieldy vehicles and the valuable components they carry.

When turbine parts are onsite, erection can begin. Under the supervision of more experienced wind-industry workers, local construction firms help build the foundations, made of reinforced concrete, that support the turbines. Skilled crane operators stack the tower segments atop one another before adding the nacelle and blades to the top of the turbine. Electricians build the plant's electricity distribution system and connect the turbines to the power grid.



Wind techs diagnose and solve turbine problems.

Wind farm operation

Once operational, wind turbines can run with little need for human oversight. Energy companies do, however, employ workers to monitor, either locally or remotely, the energy flows and to inform technicians of any problems. All wind farms employ local workers, but remote monitoring of wind turbines allows for a cost-effective way to ensure that the turbine is generating power most efficiently and can alert technicians to any potential problems.

Wind turbine service technicians, also known as “wind techs,” are responsible for keeping turbines running efficiently. When a problem arises, wind techs must be able to diagnose and fix it quickly, as any time that a turbine spends shut off represents lost revenue for the energy company.

It takes a large number of people to build and maintain a turbine, from machinists in factories to technicians working on wind farms every day. Each of these workers along the wind energy supply chain contributes to making wind a viable source of energy in the United States.

Working with wind

This section contains brief descriptions of some selected occupations in the wind energy industry. The occupations are grouped into four different categories—professional, construction, production, and transportation—according to the tasks that workers in each perform.

The U.S. Bureau of Labor Statistics (BLS) does not currently publish employment or wage data specific to the wind energy industry. However, the table below shows the median annual wage (across all industries) of the occupations described in this section.

Wages for selected wind-related occupations, May 2009

Occupation	Median annual wage, May 2009
Professional occupations	
Aerospace engineer	\$94,780
Electrical engineer	83,110
Civil engineer	76,590
Atmospheric scientist	84,710
Wildlife biologist	56,500
Logistician	67,960
Construction occupations	
Construction laborer	29,150
Electrician	47,180
Construction equipment operator	39,770
Production occupations	
Machinist	37,650
Computer-controlled machine tool operator	34,460
Assembler	26,820
Quality control inspector	32,330
Transportation occupations	
Truck driver, heavy and tractor-trailer	37,730
Crane and tower operator	44,140

Professional occupations

Workers in these occupations perform a variety of skilled functions, such as computing, teaching, and designing. Professional occupations in the wind energy industry include engineers, scientists, and logisticians.

Aerospace engineers. These workers design, test, and supervise the manufacture of turbine blades and rotors, and conduct aerodynamics assessments. They are frequently involved in site selection and work closely with meteorologists to determine the optimal configuration of turbines at a wind farm site.

Electrical engineers. Electrical engineers design, develop, test, and supervise the manufacture of turbines' electrical components. The components include electric motors, machinery controls, lighting and wiring, generators, communications systems, and electricity transmission systems.

Civil engineers. These engineers design and supervise the construction of many parts of wind farms, including roads, support buildings, and other structures such as the tower and foundation portions of the wind turbine. Because of the scale of wind turbines, these engineers must deal with some unique problems, such as designing roads that can withstand very heavy loads and accommodate trailers that are up to 100 feet long.

With many wind farms located in the Midwest and western States, civil engineers must consider potential hazards, ranging from extreme winds and cold temperatures to earthquakes. Civil engineers in wind power typically specialize in structural, transportation, construction, or geotechnical engineering.

Atmospheric scientists. Often referred to as meteorologists, atmospheric scientists monitor the atmosphere around a potential project to ensure that there is adequate wind to produce electricity. They also assess whether the wind or other weather conditions may be too extreme for viable wind development.

Atmospheric scientists take wind measurements over a period of months or years and use computer models to judge whether the wind is adequate for turbine operation. In addition, these scientists help decide the

Atmospheric scientists use charts and weather models to determine the best sites for wind farms.



placement of turbines at the site to ensure that the greatest possible amount of energy is obtained from the wind.

Wildlife biologists. These workers evaluate the wind farm's effect on local animal life. Although wind turbines do not take up a lot of space, construction can be disruptive to the natural environment. Operational turbines also pose a serious threat to local and migrating bird and bat populations. Biologists must make sure that the impact on these populations is minimal.

Wildlife biologists spend a great deal of their time outdoors at a site, cataloging the surrounding wildlife and making recommendations on how to avoid interfering with local ecosystems. They also write reports on environmental impact.

Logisticians. Logisticians are responsible for keeping transportation as efficient as possible. Because wind farm projects are expensive and run on tight schedules, time spent waiting for delayed turbine components costs money. Logisticians work extensively with both manufacturers and construction teams

to develop a schedule for timely delivery of turbine components.

State-to-State differences in heavy trucking regulations present unique challenges to logisticians. Some States require police escorts within their borders, and others do not even allow trucks over a certain tonnage to travel on their roads. Logisticians must consider these varied regulations when planning routes. They must also take mechanical considerations, such as a truck's turning radius, into account when mapping routes.

Construction occupations

Workers in these occupations build and repair roads, buildings, and other structures. Construction occupations in the wind energy industry include laborers, electricians, and equipment operators.

Construction laborers. Construction laborers often work on wind farms as contractors and are responsible for preparing the site and building the surrounding infrastructure. Their work includes clearing trees and debris from the wind farm, cleaning machines, and

helping prepare the ground that will support the turbines.

Construction workers employed by companies that specialize in developing wind farms sometimes have supervisory roles. They might work under the project manager to direct local contractors and confirm that all onsite work is performed safely and correctly. Construction workers might also be trained as wind turbine service technicians.

Electricians. These workers help get the energy from the turbine's generator to the power grid on the ground. They wire the turbine to connect its electrical system to the power grid. When installing wiring, electricians use hand tools such as conduit benders, screwdrivers, pliers, knives, hacksaws, and wire strippers, as well as power tools such as drills and saws.

Construction equipment operators. With the help of construction laborers, construction equipment operators build accessible roads to the construction site. Their efforts ensure that the wind turbine components arrive without damage or delay. They use bulldozers, road graders, and other equipment to set up the construction site.

Production occupations

By operating machines and other equipment, workers in this group assemble goods and distribute energy. Production occupations in the wind energy industry include machinists, machine tool operators, assemblers, and inspectors.

Machinists. Machinists use many different tools to produce precision metal and plastic pieces in numbers too small to be manufactured with automated machinery. They use their technical knowledge to review blueprints and ensure that pieces are machined to precise specifications.

Machinists may also finish parts that were made by automated machinery.

Before beginning to cut, machinists must plan how to position and feed the materials into the machine. And during the machining process, machinists must constantly monitor the feed rate and speed of the machine while staying alert for any potential problems.

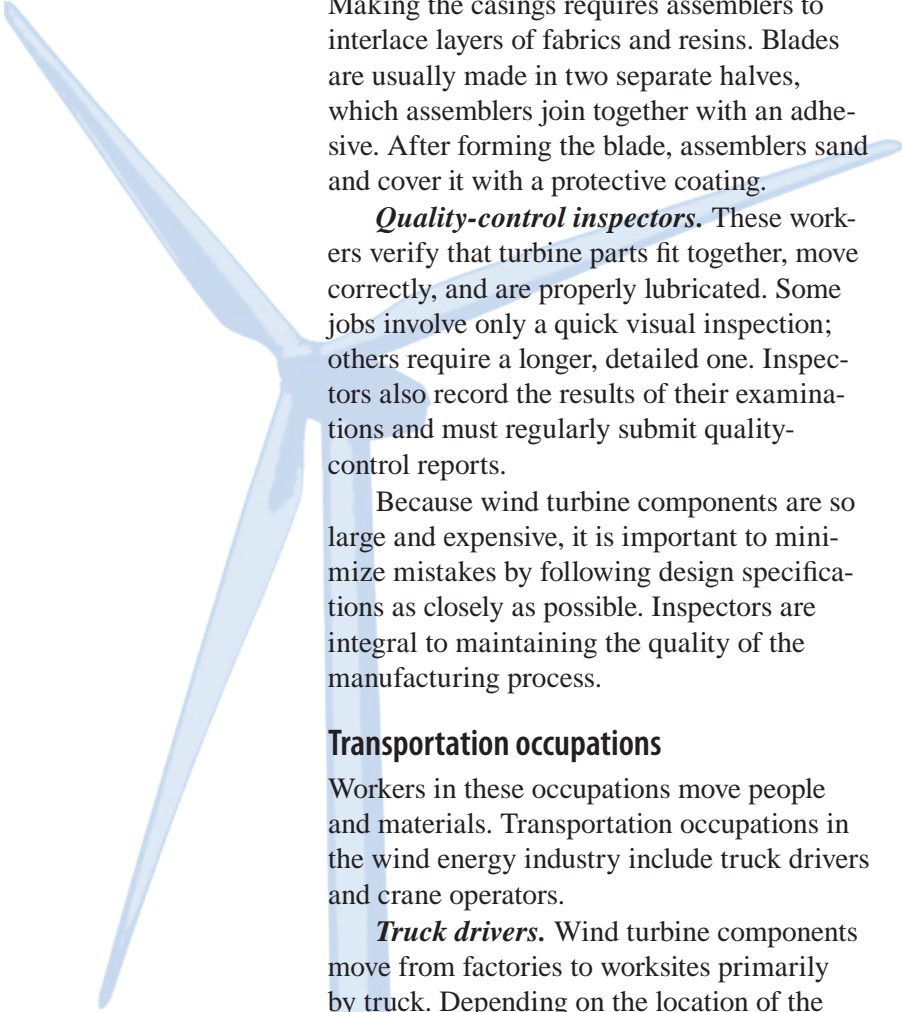
Computer-controlled machine tool operators. These workers run computer-controlled machines, which use the machine tool to form and shape turbine components. The machines use the same techniques as many other mechanical manufacturing machines but are controlled by a central computer, instead of a human operator or electric switchboard. Some highly trained workers also program the machines to cut new pieces according to designers' schematics.

These operators usually use machines to mass-produce components that require cutting with a high level of precision. In the wind-turbine supply chain, they manufacture many of the finely cut pieces, including those which are part of the generator or drive train.

Assemblers. Assemblers put the turbine components together. Despite increased



Wind turbine components are manufactured to design specifications by machinists, machine tool operators, and assemblers.



automation, many parts still have to be put together and fastened by hand. After determining how parts should connect, assemblers use hand or power tools to trim, cut, align, and make other adjustments. When the parts are properly aligned, assemblers connect them with bolts and screws or by welding or soldering pieces together.

Assemblers work extensively in the production of all turbine components. Manufacturing blades, for example, is labor intensive. Making the casings requires assemblers to interlace layers of fabrics and resins. Blades are usually made in two separate halves, which assemblers join together with an adhesive. After forming the blade, assemblers sand and cover it with a protective coating.

Quality-control inspectors. These workers verify that turbine parts fit together, move correctly, and are properly lubricated. Some jobs involve only a quick visual inspection; others require a longer, detailed one. Inspectors also record the results of their examinations and must regularly submit quality-control reports.

Because wind turbine components are so large and expensive, it is important to minimize mistakes by following design specifications as closely as possible. Inspectors are integral to maintaining the quality of the manufacturing process.

Transportation occupations

Workers in these occupations move people and materials. Transportation occupations in the wind energy industry include truck drivers and crane operators.

Truck drivers. Wind turbine components move from factories to worksites primarily by truck. Depending on the location of the manufacturer and the worksite, rail and water transportation are also sometimes used. But because wind farms are frequently built on remote inland sites, truck drivers are usually hired to transport components.

Each blade, tower segment, and nacelle is hauled individually in specially fitted vehicles. Highly trained drivers are responsible for handling their large vehicles expertly, regardless

of road conditions, to deliver turbine components safely and on time. Truck drivers are expected to regularly update managers, informing them of any schedule changes or delays.

Crane operators. Because wind turbine components are so large, building them on a wind farm requires the use of heavy equipment. As a result, crane operators are integral to the construction job, too. For example, these workers operate cranes to lift the pieces of the turbine off the trucks, stack the tower segments, and lift the blades to the hub.

Education and training for wind workers

Because workers from so many occupations are employed in the wind energy industry, they have diverse education and training backgrounds. Careers in wind energy are available for people at many different education, training, and skill levels.

Workers in professional occupations, such as engineers, scientists, and logisticians, usually have at least a bachelor's degree. Some jobs, however, require additional education, such as a master's or doctoral degree. Postgraduate education in wind-specific issues is also usually necessary for professional workers who want to enter the wind energy industry.

Many construction and production jobs have no specific education or training requirements, although some workers receive more formal training through apprenticeships. Many workers learn skills on the job and by assisting more experienced workers. Some construction workers, including construction equipment operators and electricians, require more training and might need certification.

Truck drivers transporting turbine components need a commercial driver's license. Training for this license is offered by many private and public vocational-technical schools. Employers also have training programs for new drivers who have earned their commercial driver's license. Because of the

difficulty in driving the specialized vehicles that transport turbine components, drivers must be highly skilled. Drivers may operate larger vehicles as they gain experience.

For more information

For information about careers in wind energy, visit your local library or One-Stop Career Center. You can locate a nearby career center online at www.servicelocator.org.

In addition to workers in the occupations discussed in this article, many others are involved in the wind energy industry.

Like most businesses, companies in wind energy employ workers in administrative positions, including secretaries and receptionists, human resources specialists, accountants and auditors, lawyers, and managers. People in these jobs ensure that companies involved in the wind energy industry run smoothly by taking care of personnel, budget, and legal issues.

For facilities to be properly maintained and secured, wind energy firms rely on janitors, maintenance workers, and security guards. Janitors and custodians are responsible for the cleaning and upkeep of facilities, and maintenance workers make sure that machinery are kept in safe operating condition

and repair broken equipment. Security guards ensure that the facilities are free of unauthorized people and that problems are reported as soon as they occur.

Information about these and hundreds of other occupations can be found in the *Occupational Outlook Handbook*. It is available in print at many public libraries and career centers. The *Handbook* is also online at www.bls.gov/ooh.

Excluded from the occupations discussed in detail in this article is wind turbine service technician. This occupation, which is critical to the wind energy industry, is described in the fall 2010 *Occupational Outlook Quarterly* article "You're a *what?* Wind turbine service technician." This article is available online at www.bls.gov/ooq/2010/fall/yawhat.htm.

Additionally, more detailed information on the wind energy industry is available in a recent BLS report, which can be read online at www.bls.gov/green/wind_energy.

For more information about the wind energy industry, contact:

American Wind Energy Association
1501 M Street NW.
Suite 1000
Washington, DC 20005
(202) 383-2500
windmail@awea.org
www.awea.org





BLS green jobs info online

Interest in environmentally sensitive, or “green,” industries is growing. The U.S. Bureau of Labor Statistics (BLS) has launched a new initiative—and a new Web page—to provide information about employment in these industries.

The goal of the BLS green jobs initiative is to develop information about the employment and wages of workers in green jobs. To meet this goal, workers in several BLS programs have developed a green jobs definition and are researching and developing statistical methods for measuring employment in these industries.

Detailed information about the green jobs initiative is available on the BLS Web site at www.bls.gov/green. Current information online includes an overview, results of research, and a list of frequently asked questions. The page will be updated as work on the initiative continues. For more information, write to BLS Measuring Green Jobs, 2 Massachusetts Avenue NE., Suite 2135, Washington, DC 20212; call (202) 691-5185; or email green@bls.gov.

Career guidance for the golden years

Most career guidance resources focus on helping young people decide what they want to be when they grow up. But what about adults interested in exploring what they want to be when they grow older? AARP has resources for them.

The organization, formerly known as the American Association of Retired Persons, has a “Work” section on its Web site that provides information on job searching, worker rights and benefits, and several other topics. Much of the information is geared toward people over age 50. Examples include lists of job fairs specifically for older workers and articles about entering second careers later in life.

Of special interest is the AARP Best Employers for Workers Over 50 program, a list of 50 employers whose policies AARP has determined to be particularly friendly to a multigenerational workforce. The list is available online with a detailed explanation of how each employer’s policies earned its place there.

Planning a career in logistics

Humanitarian aid for flood victims needs to be coordinated. Details of a satellite launch must be planned. The protocol for a complex medical procedure has to be organized. The masterminds behind these activities? Logisticians.

Logisticians are responsible for managing the minutiae of complicated events. They analyze each detail of a procedure and piece together a plan for smooth implementation. Some logisticians work as generalists, doing tasks in more than one area of expertise. Others focus on a specific activity, including disaster relief, space launches, or public events planning. Still others concentrate on an industry, such as defense, manufacturing, healthcare—or, as described in an article elsewhere in this issue of the *Quarterly*, wind energy.

According to the U.S. Bureau of Labor Statistics (BLS), there were about 100,400 logisticians employed nationwide in May 2009, with a median annual wage of about \$68,000. Employment of logisticians is projected to grow much faster than average over the 2008–18 decade.

Most logisticians have at least a bachelor’s degree, but SOLE (the International Society of Logistics) offers additional training and certification. For more information, write to the society at 8100 Professional Place, Suite 111, Hyattsville, MD 20785; call (301) 459-8446; email solehq@erols.com; or visit the society’s Web site at www.sole.org.

To get the list or more information about career guidance for older workers, write to AARP, 601 E Street NW., Washington, DC 20049; call toll free 1 (888) OUR AARP (687-2277); email member@aarp.org; or visit online at www.aarp.org/work.



Cooking up education funding

Money is an important ingredient in the recipe for higher education. For students interested in a culinary career, the James Beard Foundation can help supply that ingredient.

The foundation, named for the late food writer and chef, offers an extensive menu of awards in culinary arts and wine studies. Available scholarships and the criteria for awarding them vary from one year to another, depending on the foundation's donors. Students receive scholarships either as cash awards or as tuition waivers. In 2009, the foundation awarded 34 cash scholarships worth a total of more than \$112,000 and 24 tuition waivers valued at more than \$96,000 total.

Applicants must be high school seniors or graduates who are planning to pursue an associate or bachelor's degree at a licensed or accredited culinary school. In some cases, relevant work experience may substitute for a high school diploma or equivalency. Among the criteria used to evaluate applicants are academic achievement, community activities, and financial need. Application for some awards requires an essay.

There is no fee to apply, and a single application puts candidates in the running for all Beard scholarships for which they qualify. Previous scholarship recipients are eligible to reapply each year.

Scholarship information and application materials will be available in early April 2011, and the application package must be postmarked by May 16. For more information, write to the foundation at 6 West 18th Street, 10th Floor, New York, NY 10011; call (212) 627-1128; email dhbrown@jamesbeard.org; or visit its Web site,

www.jamesbeard.org. You can also visit Scholarship America, the organization that administers the scholarships, online at sms.scholarshipamerica.org/jamesbeard.



Hiring outlook looking up for Class of '11

The transition from college to work can be stressful for students. That's especially true when soon-to-be grads hear a steady drumbeat of bad economic news. But data from the National Association of Colleges and Employers (NACE) should cheer the Class of 2011 somewhat.

Employers responding to a recent NACE survey indicated that they expect to hire 14 percent more graduating college students in 2011 than they did in 2010. The best prospects are in the West and Midwest, but employers in all regions anticipate increased hiring.

Survey respondents also indicated that most of their hiring—two-thirds—will come in the fall, as they attempt to recruit top candidates early. The data are from NACE's Job Outlook 2011 Fall Preview, which will be updated throughout the year.

Another NACE survey, the 2010 Salary Survey, provides rankings of recent job offers by employer type and by pay for college major. The highest number of job offers to 2010 bachelor's degree graduates came from employers in accounting services. Among top employers, those in healthcare services offered the highest average starting salary: about \$74,000.

As for which majors were offered the highest salaries, the clear answer is engineers. Nine of the top 10 spots on the list of rankings of highest paid majors were in engineering disciplines.

For more information on both surveys, write to NACE, 62 Highland Avenue, Bethlehem, PA 18017; call toll free, 1 (800) 544-5272, or call (610) 868-1421; or visit online at www.naceweb.org.

House work: Jobs in residential upkeep



For many people, domestic bliss does not involve cleaning, home repairs, or yard work. But that doesn't mean that their vision of a happy home involves a dirty, broken-down house with an unkempt yard. It simply means that they prefer to pay others to do the grittier tasks of residential upkeep. And in doing so, they create employment opportunities for the care and cleaning of homes.

This article highlights three occupations—handypersons, maids and housekeepers, and landscaping and groundskeeping workers—that involve specific types of house calls. These occupations may not be at the top of every jobseeker's choice careers, but they offer some advantages. In general, entering these occupations requires little formal education, and paid training occurs on the job. Workers often have the opportunity to work part time, and self-employment is possible.

The following pages describe the job duties, training, wages, and more for each occupation. You'll also find sources of additional information at the end of the article.

Handypersons

Most homeowners encounter household maintenance and repair projects that they can't, won't, or shouldn't do themselves. Maybe a lock needs to be changed, a porch needs to be painted, or storm windows need to be installed. For these types of jobs, homeowners often rely on help from a handyperson.

Handypersons are fix-it generalists who have a knack for thinking through a problem to find a solution. They are hired to complete household maintenance and repair tasks that are not complex enough to require the specialized training of a licensed tradesperson, such as a plumber or electrician, but that require certain skills and knowledge. They also are responsible for recognizing when a job is above their skill level and requires the expertise of a tradesperson.

Handypersons usually know basic construction tasks. Services might involve both interior and exterior work and require a variety of skills. For example, replacing an outdoor light fixture could require basic

carpentry skills, as well as an elementary knowledge of electrical wiring.

Most handyperson jobs for hire begin with meeting the prospective homeowner-client to learn about the work that needs to be done. Some jobs are straightforward and simple, but others may be complicated. The handyperson explains how he or she will approach the job and how much it should cost. A more detailed cost estimate might be provided when the homeowner hires the handyperson to do the job.

The variety of tasks that a handyperson performs can be complicated by the range of conditions under which he or she must work: in confined or cramped spaces, in all kinds of weather, or at great heights, for example. And because home maintenance and repair runs the gamut from simple to complex, handypersons must be adept at using many kinds of tools and at understanding wiring diagrams, installation instructions, and other informational documents.

Legal requirements governing handypersons vary by State and locality. Some jurisdictions require handypersons to register or file insurance paperwork. In most places, however, there are few barriers to entering the occupation. Many handypersons are self-employed, and others work for small companies.

There is an increasing trend toward large construction companies operating handyperson divisions for home maintenance and repair. These companies generally provide their employees with insurance, tax payments, and assignments.

Training and skills. There are few formal training requirements for becoming a handyperson, and specialized training is not required. Although most of a handyperson's duties are not complex or difficult, they may need specialized knowledge and skills. Practical training, available at many adult education centers and community colleges, is helpful for learning tasks such as drywall repair and basic plumbing.

Math aptitude is especially useful for handypersons for tasks involving measuring and calculating areas. They also need

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good interpersonal skills to interact with a variety of clients. And because clients hire a handyperson to do work that they may not be able to be themselves, the handyperson must be able to communicate concepts in a way clients can understand.

Job market and wages. BLS does not collect employment and wage data specifically for handypersons. Their duties, however, closely match those of general maintenance and repair workers, an occupation for which BLS does produce data. In May 2009, there were nearly 1.3 million of these workers employed by establishments nationwide, and they earned a median annual wage of about \$35,000. These data, however, exclude self-employed workers, and anecdotal information suggests that many handypersons may fall into this category.

Employment of general maintenance and repair workers is expected to grow about as fast as the average for all occupations over the 2008–18 decade. But prospects should be excellent overall as the need arises to replace workers leaving this large occupation.

Maids and housekeepers

For most homeowners, a happy home is a tidy one. But housecleaning is sometimes considered more chore than cheer. Homeowners who would rather hire someone to do the work than to do it themselves turn to maids and housekeepers.

Maids and housekeepers clean and do a range of other household tasks. Typical duties

include vacuuming, mopping, and dusting throughout the house, as well as sanitizing kitchens and bathrooms. Some maids and housekeepers also empty trash bins, wash dishes, and do laundry.

Almost anything inside a house can be cleaned or tidied by maids and housekeepers. For example, workers might wash windows; clean appliances; wash, fold, and iron clothes or other linens, such as tablecloths; polish furniture or silver; and clean floors.

When cleaning, maids and housekeepers must be careful with clients' possessions. Clients usually pick up clutter before maids or housekeepers arrive, but some general straightening may be necessary. Workers often bring their own cleaning supplies, although sometimes clients prefer to provide certain products.

Work arrangements for maids and housekeepers vary considerably. Some maids and housekeepers are employed by large cleaning companies that service many homes; others are self-employed and have informal relationships with a few clients.

Larger companies handle most administrative tasks for their employees, such as scheduling and arranging payment from the client. Maids and housekeepers working for a company may be required to pass a background check, and the employer often must be able to secure a bond on the employee—a kind of insurance against losses to the client. These procedures protect the employee, the homeowner, and the service company.

Maids and housekeepers who are self-employed usually manage scheduling and payment matters themselves. They also have other responsibilities, including building a clientele. Workers typically gain new clients through referrals from existing, satisfied ones.

Housekeeping is physical work but is generally not strenuous. Bending, standing for long periods, reaching and twisting, and repetitive motion are routine in this occupation. Maids and housekeepers also work with cleaning chemicals, which are sometimes toxic; however, cleaning products that are natural and less harmful are widely available.

Maids and housekeepers must understand what each client expects, such as which rooms are to be cleaned or which linens are to be changed. Because the client is frequently absent from the home while the cleaning is done, details of the job must be explained before the time or price is established. For example, clients might request that additional rooms be cleaned thoroughly for special occasions, such as a family party, in which case workers must adjust their schedules and the amount they charge for that particular day.

Training and skills. Formal training is rarely required for maids and housekeepers. But some knowledge, such as how to safely and efficiently use cleaning chemicals and equipment, is essential.

Maids and housekeepers interact with clients and may work as part of a team, so interpersonal skills are important. Basic math and accounting are helpful in calculating and tracking payment, especially for those who are self-employed.

Job market and wages. There were about 888,000 maids and housekeepers employed in establishments across the United States in May 2009, according to BLS. These data

include workers in hotels, hospitals, and other institutions, however, as well as residential housekeepers, and self-employed workers are excluded. Data also show that these workers earned a median annual wage of about \$19,000.

BLS projects slower-than-average employment growth for maids and housekeepers over the 2008–18 decade. But prospects should be good because of the need to replace workers leaving this large occupation.

Landscaping and groundskeeping workers

A beautiful yard helps homeowners present a favorable impression to visitors and passersby. And homeowners unwilling or unable to invest the time and effort to create such an impression may instead invest in the services of landscaping and groundskeeping workers.

Landscaping workers, also called landscapers, create aesthetically pleasing outdoor spaces. Groundskeeping workers, also called groundskeepers, maintain previously established landscapes. Although their duties are distinct, landscaping and groundskeeping workers may perform some of the same tasks and sometimes work together.

Landscapers begin a project by talking with a prospective client about what he or she wants. They take these preferences into account when planning a new design for front or backyard spaces. Then, landscapers measure the area and consider soil types, sunlight availability, and other factors before drawing up plans for the layout.

The work involved in each job depends on the landscaper's vision—and the client's budget. For example, landscapers might lay sod and plant trees, bushes, and flowers to enhance a yard's beauty. By adding edging and mulch around their plantings, landscapers establish sections and help to minimize weeds. Retaining walls, walkways, patios, water gardens, and other structures create ambiance. And to address other considerations, such as safety or convenience, landscapers might install in-ground lights or sprinklers.





After completing installation of their design, landscapers must devise a plan for its upkeep. This plan, which also requires client approval, includes timetables for watering plantings, mowing the lawn, and trimming existing vegetation.

Groundskeepers implement the plan for maintaining existing yards. In addition to watering and mowing, they might apply fertilizers or other lawn products to eliminate weeds or pests. They also trim grass in areas that the lawnmower can't reach and replenish mulch around plants, as needed.

Landscaping and groundskeeping workers use tools such as push and ride-on lawn mowers, clippers, rakes, and shovels. Some lawn-care work may require use of tractors, backhoes, or other heavy equipment. Repairing and maintaining these tools and equipment is another of their tasks.

Work arrangements for landscapers and groundskeepers vary. Many of these workers are self-employed; others work for landscaping companies. Their jobs are physically demanding and often require working in severe weather, including extreme temperatures.

Except in warmer regions of the United States, landscaping and groundskeeping work is largely seasonal. Workers are usually busiest during the growing seasons, but

opportunities also exist at other times—for raking and mulching leaves in the fall, for example, and for clearing snow or ice from walkways and driveways in the winter.

Training and skills. There are no specific educational requirements for landscaping and groundskeeping workers. To advance or specialize, however, formal training in horticulture or landscape design is beneficial. This training is available at community colleges and adult education centers. In addition, professional organizations offer certification based on experience and successful completion of an examination.

Because of the work involved in these occupations, landscapers and groundskeepers should be physically fit. And workers must be able to work with poisonous or allergy-inducing plants and insects, as well as fertilizers, pesticides, and other chemicals.

Some States require that landscape contractors be licensed, and most require certification or licensure—usually acquired by completing a written test—for those who apply pesticides. And workers who operate motor vehicles or heavy equipment must have the relevant driver's or operator's license.

Job market and wages. Landscaping and groundskeeping workers held almost 860,000 wage and salary jobs in May 2009, according to BLS. Their annual median wage was

about \$23,000. These data, however, exclude the self-employed, and other BLS data suggest that a significant number of people in these occupations work for themselves. Higher skilled workers are often able to earn more.

BLS projects employment of landscaping and groundskeeping workers to grow faster than average over the 2008–18 decade. This growth is expected to come from both commercial and residential clients. Factors driving residential growth include time constraints faced by an increasing number of dual-income households and physical limitations of an aging population.

For more information

In addition to the occupations described in this article, other workers serve people’s household-care needs. The *Occupational Outlook Handbook* has descriptions of a wide variety of occupations, including their job duties, wages, training requirements, and more. Find the *Handbook* in libraries, career centers, or online at www.bls.gov/ooH.

Professional associations also offer information for people interested in the careers discussed in the article.

For general information about handypersons, contact:

The Association of Certified Handyman Professionals

www.achpnet.org

For general information about maids and housekeepers, contact:

The Association of Residential Cleaning Services International

7870 Olentangy River Rd., Suite 300
Columbus, OH 43235
(614) 547–0887

www.arcsi.org

For information about landscaping and groundskeeping workers, contact:

The Professional Landcare Network
950 Herndon Pkwy., Suite 450
Herndon, VA 20176

Toll free: 1 (800) 395–2522

www.landcarenetwork.org



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You're a *what?*

Recycling coordinator

It's 6 a.m. Sunday, and Joanne Shafer is at Penn State's Beaver Stadium. She's helping to count recyclables from the football game the day before, one of many tasks she manages as a recycling coordinator for Centre County, Pennsylvania. "We have a good recycling program here, and we wanted to know how much was collected," she says.

Weekend mornings at football stadiums might not seem like an obvious time and place to find recycling coordinators, but being adaptable is part of their job. Joanne knows this firsthand, because she has seen the work evolve in her nearly two decades on the job. "Over the past 20 years in the field," says Joanne, "I've had the opportunity to watch this develop as a career path."

Recycling coordinators supervise curbside and dropoff recycling programs for municipal governments or private firms. Today, recycling is mandatory in many communities. And advancements in collection and processing methods have helped to increase the quantity of materials for which the recycling coordinator is responsible.

In some communities, including Joanne's, consumers presort their recyclable materials before the materials are sent to a transfer station or processing facility. In others, all recyclables are collected together and then are sorted at the facility. Both types of processing facilities prepare the sorted materials for shipment to the paper mills, glass plants, and other companies that create new products from recyclables.

The movement from consumer to company is what makes recycling a reality. After all, explains Joanne, "a product hasn't been recycled unless a new product has been made



from it." Recycling coordinators spend time on the computer or the telephone arranging to sell commodities, such as paper or aluminum, to brokers and firms.

Many types of materials can be recycled. In addition to paper, glass, plastics, and metals, for example, construction materials, cell phones, and printer cartridges can all be collected for reuse. Joanne also helps coordinate collection of hazardous waste by organizing special collection days and making the public aware of them.

In fact, community outreach is an important part of a recycling coordinator's job. Joanne speaks about recycling to local groups, such as the Girl Scouts or Rotary Club, and

Elka Maria
Torpey

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works with businesses to do waste assessments and to train employees about proper recycling methods. “I’ve worked with everyone from preschoolers to the elderly,” she says. “It helps to relate what you do to the big picture. I can show people that we removed the equivalent of 68,000 cars from the road or saved enough energy to power 28,000 households.”

As a recycling coordinator, Joanne is responsible for about 60 employees who collect recyclables and run the recycling processing facility in her county. Her personnel duties include coordinating collection schedules and assigning workers to the pickup routes.

Each recycling coordinator’s job is a little different, depending on the size of the program he or she oversees. A coordinator in charge of a small program, for example, might go out on a recycling truck for collection or operate a forklift in the processing facility. Recycling coordinators for large programs perform more administrative duties, such as managing contracts and budgets.

Data management skills, including the use of basic software programs, come in handy for administrative tasks. Coordinators evaluate the success of their program by analyzing information ranging from recycling rates to financial stability.

Communication skills are essential. In addition to speaking to the public, recycling coordinators create brochures and marketing material and write grant proposals, reports, and other documents, such as employee handbooks. Joanne also writes requests for proposals to hire specially trained contractors who can help handle and transport hazardous waste.

Requirements for becoming a recycling coordinator have changed in the two decades since Joanne started. Joanne doesn’t have a college degree, and her background is in hotel, restaurant, and institutional management. But most entry-level recycling coordinators today need at least a bachelor’s degree in a field related to recycling, such as environmental resources management or environmental education. In some States, such as New Jersey,



recycling coordinators must be certified; in others, optional certification is available.

Work experience is also important for recycling coordinators. Jobs in municipal government, manufacturing, education, personnel management, or marketing provide good preparation. Volunteer or internship experience with a local recycling program or private waste management company is another way to gain practical knowledge.

The U.S. Bureau of Labor Statistics does not collect employment or wage data for recycling coordinators. In 2009, first line supervisors/managers of helpers, laborers, and material movers (the occupational title under which recycling coordinators falls) earned a median annual wage of \$42,940. Anecdotal evidence suggests that annual earnings for recycling coordinators range from the low \$30,000s to as much as \$100,000, depending on a recycling program’s size, the worker’s experience, and other factors.

For recycling coordinators, the passion for what they do is often a greater reward than the paycheck they get for doing it. “I have the opportunity to do something that makes a difference,” says Joanne. “I love watching fifth graders come in and say, ‘That’s cool. I’ll tell my mom not to throw that out.’ And then to tie it in with reducing greenhouse gas production—that’s very important to me.”

Opposite page, Joanne Shafer examines materials for recycling. Above, she discusses program details with a local citizen.



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The road to high wages: Transportation occupations

What's a good route to a career with high wages? Data from the U.S. Bureau of Labor Statistics suggest that working in some transportation occupations might help you reach that destination.

The chart shows selected transportation occupations in which workers earned median annual wages that were higher than those earned by 75 percent of all workers in May 2009. The median annual wage—the point at which half of all workers in an occupation earned more than this amount and half earned less—was \$33,190 in May 2009 for workers across all occupations.

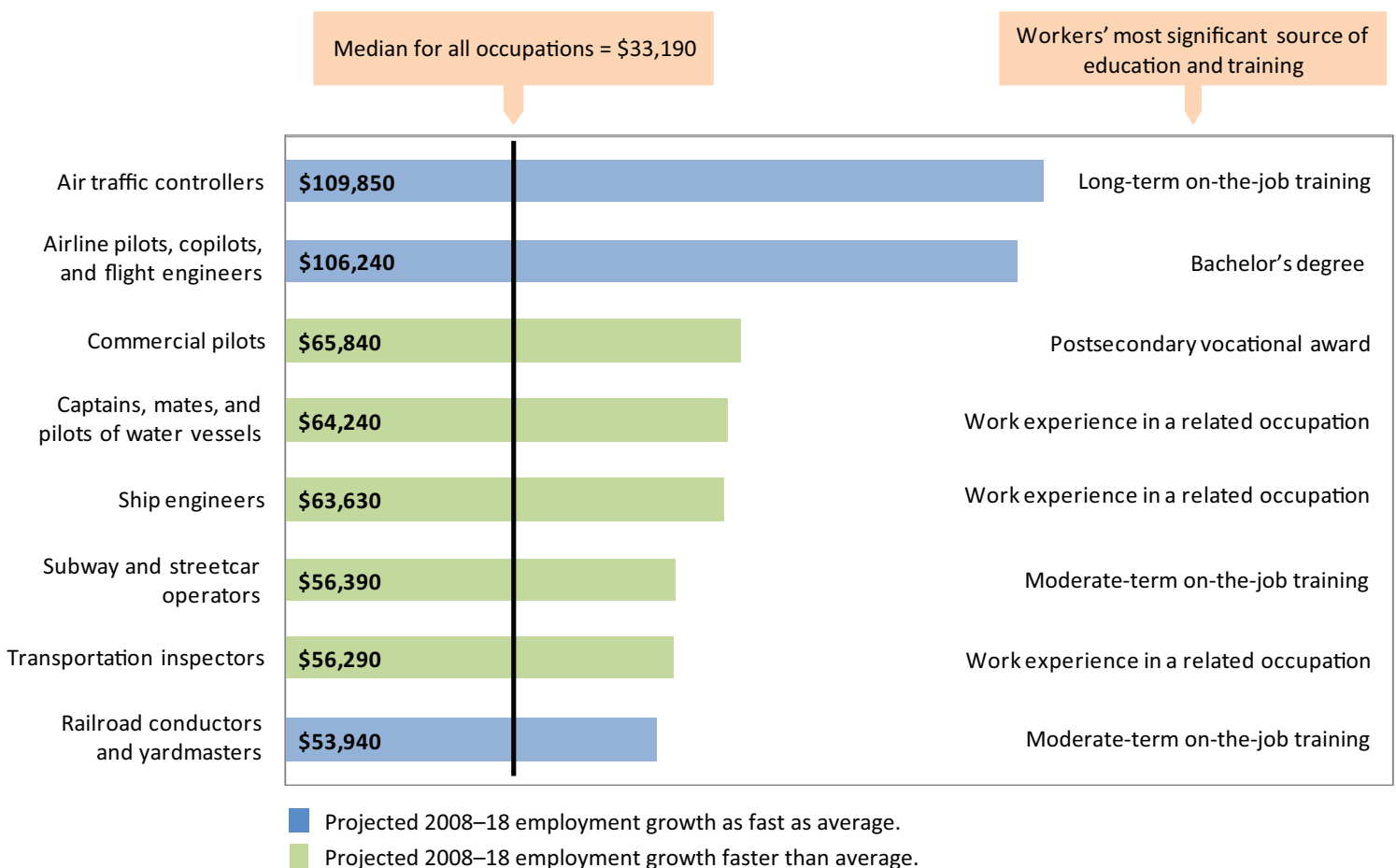
College was not the most significant source of education and training for workers in most of the occupations in the chart. But all of the occupations required some type of formal training, work experience, or a combination of the two. Such requirements reflect the fact that workers in these occupations have complex job duties

and are often responsible for travelers' safety.

Prospects are good for these selected occupations. Most of them are expected to have faster than average employment growth over the 2008–18 decade. Employment growth for air traffic controllers, airline pilots, and rail conductors is expected to be about average over the same decade.

Wage data in the chart are from the BLS Occupational Employment Statistics program (online, see www.bls.gov/oes). Data on education and training and projected job growth come from the BLS Employment Projections Program (www.bls.gov/emp). To learn more about these occupations, including detailed descriptions of their job duties, required education and training, and more, consult the BLS *Occupational Outlook Handbook*, available in most libraries and online at www.bls.gov/ooh.

Median wages of workers in selected transportation occupations, May 2009





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House work: Jobs in residential upkeep

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