

Automotive Body Repairers



Occupational Brief Title Codes:

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Occupational Subtitles:

- Automotive Painters
- Body Specialists
- Glass Installers

Work Classification Based Related

D.O.T. Occupations:

- Aircraft Body Repairers
- Automotive-Body Customizers
- Boat Repairers
- Muffler Installers
- Service Mechanics

Interests Based Related

G.O.E. Occupations:

- Ornamental-Metal Workers
- Pneumatic-Tool Operators
- Sheet-Metal Workers
- Shipfitters
- Welder-Assemblers

Skills Based Related

O*NET Occupations:

- Automotive Glass Installers and Repairers
- Brazers
- Electric Motor and Switch Assemblers and Repairers
- Maintenance Workers, Machinery
- Mechanical Door Repairers

Noteworthy Quote:

“Auto body repair is a very rewarding and educational experience. I like taking something that is damaged and making it like new again. New car models and technology place challenges on our skills, making our work interesting and exciting.”

– Nick Petrella, Lou Petrella’s Body Shop, Polkville, New York

Automotive body repairers (au-to-`mo-tive `bo-dy re-`pair-ers) repair damage to automobile, truck, bus, and other vehicle bodies.

Thousands of motor vehicles are damaged in traffic accidents every day. Although some of these vehicles are sold for salvage or scrapped, most can be repaired to look and drive like new. Automotive body repairers straighten bent bodies, remove dents, and replace crumpled parts that are beyond repair. They repair all types of vehicles. Most work on cars and small trucks, although some work on large trucks, buses, or tractor-trailers.

Work Performed

Automotive body repairers, sometimes called *collision repair technicians*, restore all kinds of vehicles. They repair everything from dented bumpers to nearly totaled vehicles. They may repair body parts to their original shape, or they may replace whole sections of the vehicle. Most work on cars and light trucks damaged in collisions.

A first step in repairing a damaged vehicle is the estimate. When an owner or a tow truck brings a vehicle into a shop, the *body specialist* or a *supervisor* examines it to note the damage and what repairs are required, the time required to do it, and the costs. The customer then gets the estimate. Most body shops have computer programs to use in making the estimate. Since car owners usually have insurance to pay for the damage from accidents, repairers also prepare a written estimate for the insurance firm.

To get at the vehicle damage, automotive body repairers may remove the suspension components, drive train components, window glass, and interiors. They reinstall these items after completing the repairs to the vehicle.

Automotive body repairers use special alignment machines to realign the vehicle frames or chassis to their original shape. These machines use hydraulic pressure to



Automotive body repairers repair damage to automobile, truck, bus, and other vehicle bodies.
Photo by CGP Staff

straighten the damaged parts. For unibody designs that have no frame, they use bench systems to bring the body sections into exact alignment. They also align window openings and doors. They reshape plastic body components, cut out old parts and weld in new ones.

When a vehicle is badly damaged, it is often cheaper and easier to replace damaged parts rather than repair them. Body repairers usually remove badly damaged sections with pneumatic metal-cutting tools. They weld in new sections to replace them.

To repair minor dents, auto-body repairers may use a hydraulic body jack or a hand pry bar, or they may remove dents with hand tools, such as a hammer or dolly. They smooth out small dents and creases in the metal by holding a metal block (called a dolly) on one side of the damage while they hammer the other side with a body hammer. The dolly comes in several shapes and sizes, and acts as an anvil. There are also many kinds of body hammers.

To remove small dings, dents, or dimples, repairers use a pry pick and a wood block. If they cannot remove a dent, they may fill it with a body filler. They then file, sand, and shape the part smooth so that it blends with the rest of the surface.

Badly damaged metal parts are usually stretched out of shape. Repairers shrink the metal back to the original shape. They repair breaks in the metal by welding them. They may use MIG-welding on late-model cars because many parts are made of high-strength steel. Hammering, grinding, and filling the welds make them smooth.

Body repairers also repair or replace plastic body parts on new model vehicles. They remove damaged panels and determine the kind of plastic from which they are made. For most kinds of plastic, they can apply heat from a hot-air welding gun or immerse it in hot water, and then press the softened panel back into shape. They replace plastic parts that are too badly damaged to repair. To repair holes, tears, dents, and gouges, they use different techniques, such as structural adhesive or plastic welding.

To fix glass in automobiles, *glass installers* remove broken, cracked, or pitted windshields; back lights; and side glass. They then apply a urethane adhesive to the weld flange and set the glass in the opening. As the urethane adhesive cures, the glass becomes bonded to the opening. If necessary, they apply a liquid sealer to make a weather-tight seal.

Body repairers repair or replace hardware such as door locks and handles. They may replace inside trim such as door panels, seat cushions, and seat backs. They may aim headlights and do four-wheel alignments. They may also do painting and refinishing work.

When working on both old and new vehicles, *automotive painters* or *refinishing technicians* wash the car with a special cleaner to get rid of paint flakes, metal grit, wax, grease, and dirt. They use special tape to mask off any parts of the car they will not paint: windows, headlights, mirrors, chrome trim, and other parts.

To paint or refinish a car, automotive painters use a spray gun. They adjust the gun so that it will spray the right amount of material smoothly and evenly. Adjustments to the spray gun depend on the kind of coating and finish they are applying. If

the paint is not applied correctly, it may run or spread unevenly.

For some paint jobs, painters use stock colors. For other jobs, they mix the paints to match the color of the paint already on the car. Mixing paint to match the original color can be difficult, especially if the original color is faded. Precise matching of colors is important so that the repair is not noticeable.

Painters apply several primer coats. Primer serves as a filler, and as a base on which to apply other coats of material. To begin, painters apply primer to spots that have had the old paint sanded off. They then apply primer to the rest of the surface. To speed up the drying between coats, the painters may put the car in a special heated enclosure or under heat lamps. After the primer dries, the auto painters sand the surface to smooth out any rough spots and to help the next coat of paint adhere better. They then apply a sealer and allow it to dry.

Painters spray on one or more coats of the final finish. When they use urethanes, painters or their helpers may polish the finished surface with polishing wheels or buffers. They then apply one or more coats of polish. Urethane or enamels, which dry to a high gloss, are not always polished. The final step is to remove the masking from the windows and chrome trim. In some cases, painters may have to reapply trim that has been removed.

The work of auto-body repairers varies with the size and location of the shop in which they work. Body repairers in large shops may do one kind of body repair work all the time. They may straighten frames, or repair fenders or doors. Workers in small shops may do all kinds of work. They may give estimates, repair unibodies, replace parts, align frames, and repaint surfaces.

Working Conditions

Most collision repair shops are well-lighted and well-ventilated to disperse the fumes and dust. However, shops are still noisy from hammering and sanding, and much of the work is dirty and strenuous. Body repairers are on their feet much of the time, and lift weights up to seventy-five pounds. In their work, they bend, kneel, and lie flat on their back.

Hazards in this work include burns from hot metal, cuts from broken metal and glass, and fumes from painting and welding. Serious accidents are avoided when the shop is kept orderly and safety practices are observed. Workers often wear safety equipment such as dust masks, paint masks, ear and eye protection, and safety shoes. Painting is often done in ventilated booths that protect the workers from the fumes of paints and other chemicals. Large shops have respirator systems ventilated with fresh air.

Hours and Earnings

Most automotive body repairers work a standard forty hour week. Self-employed workers may work up to sixty hours or more a week. The work week may vary with the shop and with the amount of work on hand. Many shops have at least some evening and Saturday hours of operation. Earnings cover a wide range. Most auto-body repairers are

paid on an incentive basis in which they are paid a predetermined amount for specific tasks. Others receive a commission based on the labor charged to the customer. Under both these methods, earnings depend on what jobs they do, the amount of work assigned to them, and how fast the work is completed. Employers generally guarantee workers a minimum weekly salary plus a flat rate for each job. Auto-body repairers who work for trucking companies, bus lines, and other organizations that maintain their own vehicles usually get an hourly wage. Most trainees also earn straight hourly rates.

According to the Bureau of Labor Statistics, in 2002, automotive body and related repairers earned anywhere from \$18,000 to over \$56,000 a year. Half earned between \$24,000 and \$44,000 a year. Overall, the average earnings for automotive body and related repairers was \$35,200 a year. Automotive glass installers and repairers earned an average of \$28,050 a year, while painters averaged \$35,700 a year. Trainees and apprentices typically earn 30 to 60 percent of the earnings of skilled workers.

Fringe benefits vary among shops. Workers may get paid vacations, sick leave, group health insurance, and discounts on repairs to their own cars. Some shops supply uniforms and laundry service.

Education and Training

Most employers prefer to hire individuals who have completed a formal program of study and training in collision repair and refinishing. This kind of background is advisable because advances in automotive technology have brought about changes in the materials, structure, and components in automobiles. These changes require different repair skills. New automobiles, for instance, are made of a combination of materials: steel, aluminum, metal alloys, and plastics. Each requires special skills and techniques to restore the vehicle to pre-accident condition.

Training in auto-body repair and refinishing are available in many high schools, vocational schools, private trade schools, and community colleges as part of their automotive service programs. Job seekers with this kind of background have an advantage in hiring and promotions. However, employers also hire persons without formal training. These trainees must have basic math and computer skills, as well as the ability to follow written directions, in order to meet the specifications in technical manuals.

Regardless of previous training, all new workers receive additional on-the-job training. They assist body repairers in tasks such as removing damaged parts, sanding body panels, and installing new or repaired parts. They learn to identify damage found after disassembly and determine the remedy. They learn how to remove small dents and make other minor repairs. Gradually they advance to more difficult tasks such as straightening body parts and realignments.

Beginning painters usually remove trim, clean and sand surfaces to be painted, mask surfaces that are not to be painted, and polish finished work. As they gain experience, they progress to mixing paint and using spray guns to apply primer coats. As a rule, it takes 3 to 4 years to become a

skilled auto-body repairer, and 1 to 2 years to become a skilled automotive painter.

Many employers also sponsor training programs to help their employees become more skillful. Continuing education in automotive body repair and refinishing is important. Automotive parts, materials, electronics, and paints continue to change and become more complex. Gaining new skills, reading technical manuals, and attending seminars, workshops, and study sessions sponsored by manufacturers is important for keeping up with advances in this field. Other training areas may include safety and quality tips, instruction in use of equipment and products, and general business practices.

Certification, Unions and Professional Societies

The National Institute for Automotive Service Excellence (ASE) provides voluntary certification programs for auto-body repairers and refinishers. ASE offers a series of four exams for collision repair and refinishing professionals. To be certified, repairers or refinishers must pass at least one written test in their field of expertise, and have at least two years of experience. They may substitute completion of a program of study of automobile repair or refinishing for one year of experience. Those who pass all four exams become ASE Master Collision Repair and Refinish Technicians. To maintain certification, they must retake the test(s) every five years.

Union membership is not required for all auto-body workers. Most union members work for large auto dealerships, trucking firms, or bus lines. Unions which represent auto-body workers include the International Association of Machinists and Aerospace Workers; the Sheet Metal Workers' International Association; the International Union, United Automobile, Aerospace and Agricultural Implement Workers of America; or the International Brotherhood of Teamsters.

Personal Qualifications

Auto-body repairers and refinishers must have the capacity to use the tools of the trade and perform the work. They should have a keen sense of shape and space in order to see how parts fit together. Painters must have a good sense of color and be able to distinguish between subtle variations. Fully skilled auto-body workers must have good reading ability, and basic mathematics and computer skills.

Repairers and refinishers must be able to follow instructions and diagrams in technical manuals, and work independently without close supervision. They should be able to complete assigned work according to schedule. Pride in their work and efficiency are important. In general, job applicants must be at least eighteen years old. Some employers ask job candidates to take a physical examination and drug test.

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

In 2002, auto-body workers held roughly 270,000 jobs throughout the United States—of which, 50,000 specialized in

painting and refinishing, and 22,000 specialized in glass installation and repair. Most worked in collision repair and maintenance shops, or in auto dealer service departments. Others worked for organizations that maintain their own fleets of motor vehicles, such as trucking, taxi, and bus firms. A few worked for manufacturers and wholesalers of motor vehicles, parts, and supplies. More than 10 percent of auto-body repairers and nearly 8 percent of painters were self-employed, operating their own auto-body repair or paint shops.

Employment Outlook

The employment outlook for auto-body workers is very good. Through the year 2012, employment of auto-body and related repairers is expected to grow 13.2 percent (an increase of 26,000 positions); employment of automotive glass installers and repairers is expected to grow 10.7 percent (an increase of 2,000 positions); and employment of automotive painters is expected to grow 17.5 percent (an increase of 9,000 positions). In addition to positions arising from growth, thousands of jobs will also become available each year due to replacement needs.

Every year the number of vehicles in operation continues to increase. A growing population includes many new drivers. More and more families own more than one vehicle. As the number of motor vehicles in use rises, inevitably so does the number of vehicles damaged in accidents. Newer, lighter vehicles are also more likely to be badly damaged from collisions than the older, heavier cars.

Although the detailed work of repairing and refinishing vehicles does not lend itself to automation, employment growth will still be limited by changes in body shop management. Larger shops will employ a team approach to decrease repair and refinishing time, and expand their volume of work. Insurers are increasingly looking to shop networks for repair services. More vehicles are being declared a total loss after accidents due to the high cost of fixing the extensive damage that results when airbags deploy, and of replacing the increasingly complex parts and electronic components of new vehicles. Opportunities will remain best for persons with formal training in automotive body repair, refinishing, and mechanics.

Entry Methods

Graduates of vocational or technical schools can get help from the career offices of these institutions. Local state employment offices may have information on both jobs and training. Job seekers may also apply directly to auto-body repair and paint shops. Want ads in local papers often list openings, or applicants may look in the Yellow pages of the telephone book under "Automobile Body Repairing & Painting" for businesses in their area. Locals of unions that have auto-body workers as members may be able to offer additional job leads.

Advancement

As beginners increase their skills, learn new techniques, and complete work more rapidly, their pay increases. Capable auto-body workers in large shops may become team leaders or supervisors, estimators, sales representatives in the service department, or service department managers. Auto-body workers with business skills and money may open their own shop or dealership. Those who acquire practical experience may become sales or technical representatives for auto parts, supplies, and paint manufacturers. Some repairers become damage appraisers for automobile insurance companies.

For Further Research

Automotive Service Association, P.O. Box 929, Bedford, TX 76095-0929. Web site: www.asashop.org

I-CAR Education Foundation, 3701 Algonquin Road, Suite 400, Rolling Meadows, IL 60008. Web site: www.i-car.com

National Institute for Automotive Service Excellence, 101 Blue Seal Drive, S.E., Suite 101, Leesburg, VA 20175. Web site: www.asecert.org

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