Overhead Garage Doors

They're the largest and most visible moving parts of your house, but with all the options out there, don't leave the choice up to someone else

BY ROE A. OSBORN

The garage door on the house I grew up in was a beast made of heavy timbers and plywood. I was almost a teenager before I could budge the thing open. And when the door closed, it seemed as if no springs in the world could have kept it from crashing down and rattling mom's dishes in the kitchen above. To this day, I swear that my right arm is longer than my left from slowing the door's descent. Today's garage doors, on the other hand, are not only light, quiet and smooth-operating, but with the choices out there, they also can be surprisingly good looking.

Wooden doors on the wane

The lumber in my folks' old door was probably 2-in. thick, tight-grained Douglas fir with flat plywood or solid-wood panels. Now, the same garage door is made of 1¼-in. hemlock frames and hardboard panels. Because doors made of these materials don't last as long, traditional wooden doors are declining in popularity, and people are opting for longer-lasting, low-maintenance doors made of steel or plastic.

Traditional frame-and-panel garage doors (photo right, p. 78) are among the least expensive options, but they do take time and effort to maintain. Most companies offer their wooden doors preprimed for a slight additional charge. But even these doors have to be painted with a finish coat after they're installed and then repainted regularly. But being able to paint a traditional wooden door to match your house or trim can be a plus.

Stock wooden garage doors are also available as flush models (photo bottom left, p. 78); when closed, they form an unbroken surface across the door opening. Flush doors are also fairly inexpensive, and they have to be finished and kept up like their frame-and-panel cousins. Flush wooden doors can be ordered with a layer of insulation mounted inside the door sections. In addition to its thermal qualities, this insulation also helps with sound dampening, which is nice if your driveway happens to be a gathering place for noisy neighborhood kids.

Besides the typical frame-and-panel doors, many companies offer raised panels made of redwood or cedar. And all traditional wooden garage doors can be ordered with window sections. Custom wooden doors, which are discussed later, occupy the other end of the quality scale and can be built to match almost any architectural whim.

Steel doors come plain, with insulation or in a sandwich

Tom Youstey of Clopay (800-282-2260), the nation's biggest steel-door manufacturer, says that five or six years ago, steel doors finally overtook wooden doors as this country's most popular choice. Because these doors are made of sheet steel that has been galvanized, primed and painted with at least one coat of finish paint, they are virtually maintenance-free. Most steel for garage doors is given a wood-grain surface. Then the embossed steel is either stamped with a raised-panel pattern (photo above) or made directly into flush-door sections.

There are three basic choices for steel doors (drawings facing page). The most basic steel door has sections that are just an exterior steel skin mounted on a frame of either steel or aluminum. Because steel-skin doors are uninsulated, they are a good choice for detached unheated garages.

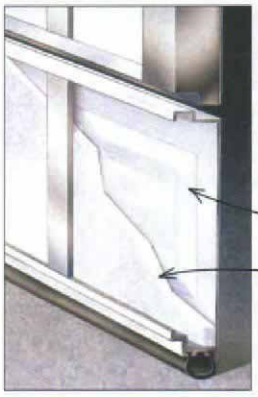
The next step up is adding a ⅞-in. to 1-in. layer of insulation inside the frame. This layer of insulation is usually protected with a layer of plastic or vinyl that also makes the exposed insulation easier to keep clean and more impact resistant.

The best steel garage doors are actually a steel sandwich. The outer layer is the steel skin, but the insulation is increased to the full thickness of the section frames. A second

STEEL DOORS As America's most popular garage doors, steel doors look similar from the outside (above), but there are three choices for the inside (below).

Steel skin on a metal frame is an inexpensive option.

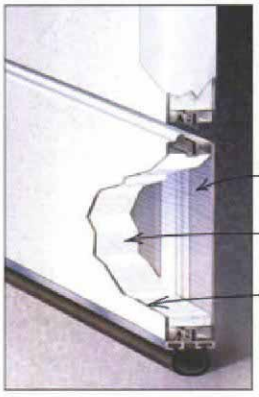
Outer steel skin with no insulation



Insulated steel adds a layer of insulation behind the skin.

Outer steel skin

Layer of insulation



Steel sandwich has insulation and an inner-steel skin to resist denting.

Outer steel skin

Full thickness insulation

Inner steel skin

layer of sheet steel then covers the back of each section, creating the sandwich. Sandwich-type steel doors not only have a higher R-value but also get strength from the inner skin, which protects the insulation.

Ribbed-steel doors, a less popular steel option with more of a commercial look, are made of sections that have been formed into a series of ribs for added strength. Ribbed-steel doors can be also be insulated, but because of the small flat surfaces on each of the ribs, window options are usually limited to narrow horizontal ovals. Steel garage doors are offered in a wide variety of colors and can be painted to match your house.

Space-age plastic doors don't dent

If your kid loves to practice his hockey shots using the garage door as his backstop, you need a door that pucks bounce off without doing any damage. A door made of plastic (photo top left, p. 78) escapes from all but the hardest impacts. And any dings left from an evening of practice by your future Stanley Cupper disappear as soon as the door is warmed by the sun the next day.

Plastic garage doors are not as common as steel doors, and different companies use different plastics to make their doors. Overhead Door Corporation (800-929-3667) makes its Renata door out of polyvinyl chloride (PVC) while General American Door Company (Gadco; 800-879-4232) makes its Freedom doors of high-density polyethylene (HDPE). Some readers will cringe at the thought of plastic building materials, but

Drawings: Courtesy of Clopay

GARAGE-DOOR GALLERY

Most wooden doors are inexpensive and come as flush or as traditional frame-and-panel doors. Custom wooden doors can be made to look like traditional carriage-house doors, and plastic doors won't dent from impact.

Plastic door

Flush wooden door

Frame-and-panel wooden door

both Gadco and Overhead consider their plastic doors to be their top of the line, and both are sold with extended warranties.

The plastic in these doors has color through its entire thickness, and to keep the color from fading in the sun, the plastic is loaded with UV-inhibitors. Color choices are usually limited to two or three, but Gadco's Joe Kee told me that white doors make up 80% of their HDPE-door sales. Manufacturers recommend not painting plastic garage doors, so make sure you really like the color you choose.

I had a translucent-fiberglass door on my garage in Rhode Island, and I was surprised to find out that few companies still make these lightweight doors, which offer little insulative value. Filuma Door Company (905-457-7553) of Ontario, Canada, manufactures their sectional doors of translucent polycarbonate, a material that maximizes light transmission while providing a measure of insulation. Gadco also makes a white translucent fiberglass door.

Carriage-house doors look like they swing open

Custom-made wooden doors (top photo, facing page) are usually made of top-quality materials, so they do not suffer from the same problems as their hemlock-frame and hardboard-panel cousins. Designer Doors (800-241-0525) of River Falls, Wisconsin, frames their custom wooden doors of gorgeous, solid kiln-dried Douglas fir.

Kent Forsland of Designer Doors says that about half of their business is replacing existing doors, especially swing-open or carriage-house type doors that are difficult to adapt to automatic openers and hard to open in the snow. Custom-door shops specialize in making sectional doors that look exactly like old swing-open doors. And because these shops custom-make every door, they can match the exact size of your old door.

Every custom-door shop I looked at can insulate their doors, and most shops offer true divided-lite windows, including those dramatic curved-top or arch-top windows. Designer Doors also has a unique False-Post option in which they've overlaid a layer of trim to make a double-wide door look like two single doors.

Drawbacks to custom wooden garage doors are threefold. First, by nature they are usually much heavier than steel or plastic doors, so all the door hardware—including

Custom-made overhead doors

One-piece garage doors

One-piece doors that swing up and open Flintstone-style (photos left) became popular in California during the post-WWII building boom because they're so easy to install. Larry Haun, a veteran builder, said that framers built the door slabs at home and then hauled the completed doors to the job site on a trailer. With jamb-mounted hardware (photo right), one-piece doors can be installed in minutes instead of the hours it usually takes to put in a sectional door.

Pat Kelly of Holmes Halley (253-931-8900), the California company that makes the one-piece door hardware, says these doors are typically framed with 2x stock and covered with plywood. Trim can be added to match architectural motifs. Truss rods on the top and bottom of the door slab stop the door from sagging when open. One-piece doors can be mounted with as little as 1 in. of clearance above the door opening.

—R. A. O.

Bottom photos this page: Gary M. Katz

Garage-door safety

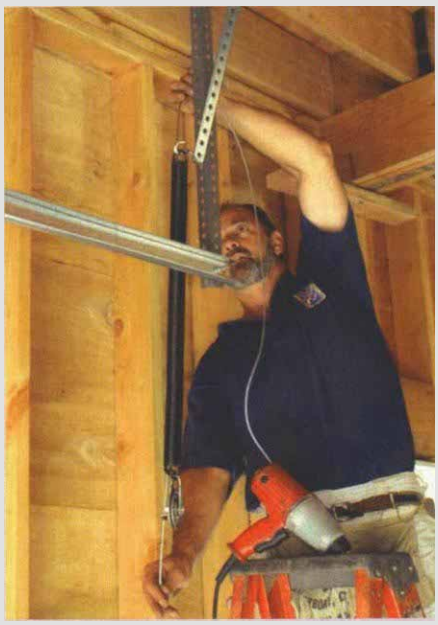
Garage doors cause hundreds of injuries every year. Here's what's being done to prevent them.

FINGER-PINCHING BETWEEN SECTIONS. Wayne-Dalton (800-827-3667) designed its WayneGard system to minimize the gap between sections. Clopay will have its finger-friendly system available in 1999. The Martin Door Company (800-388-9310) uses its Finger Shield system to cover the gap between sections.

BROKEN RESTRAINING SPRINGS. Most extension springs are installed with a cable fed through the middle to keep the spring from flying if part of the system breaks. Both Wayne-Dalton and Clopay have torsion-spring systems that tighten with a drill; Wayne-Dalton's torsion spring is contained inside a steel tube.

GARAGE DOOR TRACK. Holes in the track are necessary for door locks; injuries occur while fingers are stuck through the holes when the door is operated. Martin uses solid track with electrical-box-type of knockouts to limit holes. Martin shields its rollers to push fingers out of harm's way. Martin also makes a shield that keeps hands and arms from between the track and door jamb, and they roll their track edges so that they're not sharp.

—R. A. O.



Safety cable. Steel cable fed through the extension springs can keep them from becoming projectiles if the system breaks.

tracks, rollers, hinges and springs—has to be upgraded accordingly. Second, these doors require regular maintenance to keep them looking good, but that usually means reapplying a top-coat layer of paint every couple of years. The final drawback to a custom door is price. A custom door can cost a lot more than a steel or plastic door.

Letting in the light

Like most garage doors of the time, my folks' door had a section of windows. One winter, a snowdrift covered the entire door, and as my dad dug out, I remember him plunging the snow shovel in chest high and hearing a muffled tinkle. All was not lost: My folks loved having barn swallows nest in the garage, and the missing window let the swallows come and go as they pleased.

Today, every type of garage door can be purchased with windows of some sort. The dangerous plate glass of my parents' door has been replaced with either tempered glass, laminated glass or clear-plastic panels, all three of which stand up much better to snow shovels and baseballs.

Many garage-door companies also offer the option of insulated glass so that the window section of the insulated door has a similar thermal performance. Most companies also offer tinted glazing or obscure glazing, which lets in light but keeps the contents of the garage from being visible.

With plastic and steel doors, a plastic frame holds the glass along with whatever grille insert you choose. From company to company, grille options are almost identical and pretty limited. And like the snap-in grilles on regular house windows, the inserts look better from the end of a long driveway. Many companies also offer acrylic inserts for their garage doors that look like leaded glass or stained glass.

Nylon wheels run silent

As a teenager, I never got away with staying out longer than I was supposed to. Sneaking back into the house meant coming in through the garage, and lifting that creaking, clanging monster always foiled my plans. Today's smoother, quieter garage-door hardware would have made my teenage years a bit more fun.

Many companies now use wheels made of specially engineered nylon (photo top left, facing page) that roll noiselessly in the tracks without ball bearings. These wheels supposedly outlast their metal counterparts.

Metal wheels are still widely used, but better metal wheels have more ball bearings in sealed races that keep out dirt. Commercial-duty metal wheels with nylon tires are often used for the heaviest doors.

As doors have become lighter, lighter-gauge tracks have become the industry standard. But lighter tracks are more flexible, and if they flex under the weight of bigger doors, they can cause the rollers and hinges to wear out prematurely. Be sure that the track you get is right for the door you choose.

Overhead Door has recently introduced a system that doesn't use wheels (photo top right, facing page). Instead, C-shaped plastic clips glide noiselessly over a tubular track. Called UltraGlide, this system adds about $300 to the average price of one of their doors. UltraGlide tracks are painted white.

The springs do the lifting

Extension springs, like those on my folks' old door, work by stretching as the door is closed (photo bottom right, facing page). As the springs stretch, they counteract gravity to slow the door's descent. As the door is lifted, the springs try to return to their relaxed position and help to pull up the door.

The other type of garage-door springs are torsion springs. Instead of stretching above the track, torsion springs wrap around a barrel or tube mounted on the backside of the garage-door header. The spring is secured at one end, and the other end is rotated to tension the spring. As the door is opened, the spring tries to unwind, lifting the door in the process, similar to the way a measuring tape is drawn back inside its case.

Extension springs are easy to install and service, and replacement springs cost only about a quarter of what replacement torsion springs cost. Also, extension springs require less space for low-headroom garages.

Although every manufacturer recommends hiring a qualified installer to put in a garage door, extension springs are probably easier and safer for a do-it-yourselfer to install. Most torsion-spring systems are tensioned with steel bars (photo bottom left, facing page), a procedure that is not for the faint of heart (sidebar left). However, both Wayne-Dalton and Clopay have developed systems that use a ⅜-in. drill to tension the spring.

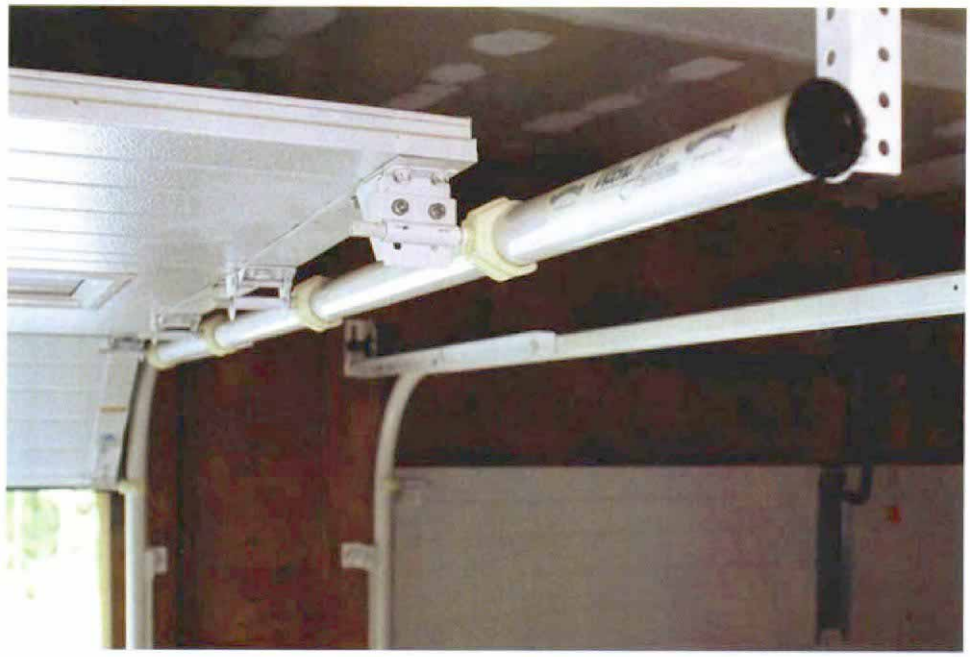
There isn't room here to discuss automatic garage-door openers. That would take a whole article. But keep in mind that an opener is not supposed to lift a garage door. That's the job of properly adjusted springs.

The best bargain in home building

Because garage doors are an *a la carte* type of product, each of the menu choices can affect price. The least expensive doors on the market are uninsulated steel-skin doors and

HARDWARE, THE UNSEEN SIDE OF GARAGE DOORS

Wheeling in the years. Steel wheels that roll on ball bearings used to be the only choice. But in recent years, bearing-free nylon wheels have been gaining popularity because they roll more quietly in steel tracks and outlast steel wheels.



Track of the future. Instead of wheels, Overhead's UltraGlide system uses plastic C-clips that glide silently on a powder-coated metal tube.

Garage-door springs that wind. Torsion springs work by unwinding to raise the door. Steel bars are used to tighten most torsion-spring systems.

Garage-door springs that stretch. Garage-door extension springs help to counteract the weight of the door by stretching as it's lowered and contracting as it's raised.

frame-and-hardboard-panel wooden doors. Insulating the steel door and adding an inner skin both increase the cost. Plastic doors are a step up from there, and custom doors command the highest price.

Wider and taller doors also add to the cost. Garage doors typically come in widths from 4 ft. for golf carts or riding lawn mowers to over 18 ft. for big roomy garages. Wider doors not only use more material, but because they spend a good deal of their lives suspended overhead, they are also engineered differently to keep from sagging.

Adding window sections, special glass or grilles; upgrading hardware and door locks; and tossing in the garage-door opener all can add to the cost of a door. But in spite of all these choices that can increase cost, overhead garage doors might still be the last great bargain in home building. A tricked-out custom wood door with specialty-glass arch-top windows, hung on commercial hardware and wide enough for both of your Lincolns might cost around $5,000, which is less than you'll pay for some refrigerators or for the French-door unit out to the patio. □

Roe A. Osborn, whose right arm is a bit longer than his left, is an associate editor at *Fine Homebuilding*. Photos by the author, except where noted.