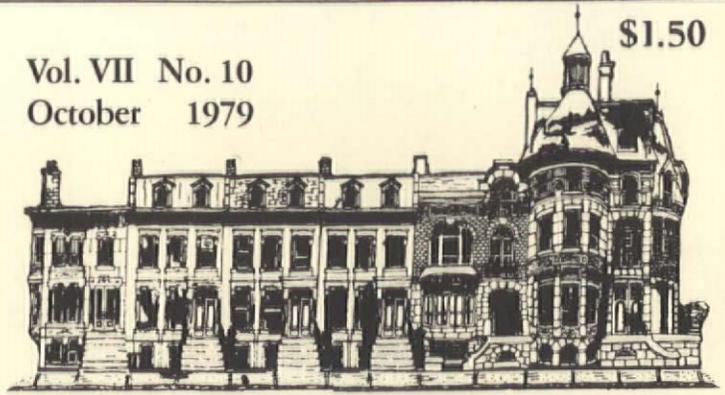


THE OLD-HOUSE JOURNAL

Vol. VII No. 10
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Restoration And Maintenance Techniques For The Antique House

Maintenance of Gutters

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Coming Next Month

THE CRAFTSMAN HOUSE

By The Old-House Journal Technical Staff

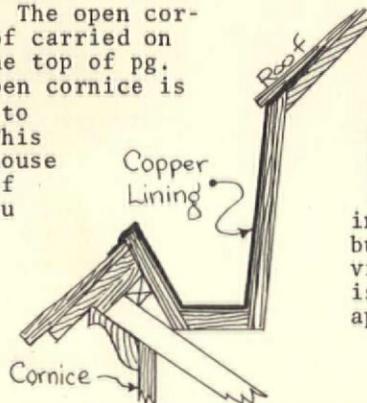
LEAKING GUTTERS are an insidious enemy. Although the damage resulting from the leaks during a single rain storm can seem minimal, when the leak is allowed to continue year after year, the result can be calamitous. The damage will be especially severe when a built-in gutter is leaking into a box cornice. In this article, we'll review some of the more unusual gutter systems that are found on old houses and look at some repair and maintenance ideas.

BEFORE GETTING into the details of gutters, we should look at the two basic types of cornice systems: Open and Closed. (The closed cornice is also called a "box cornice.") The open cornice is simply an overhanging roof carried on exposed rafters (see sketch at the top of pg. 116). When the overhang of an open cornice is large enough, it may be possible to do away with gutters entirely. This cleans up the appearance of the house considerably. The disadvantage of not having any gutters is that you lose all control of where storm water ends up. You may find it dripping in an unpleasant way over entrances. Also, storm water may collect next to the house in pools that cause basement flooding. If gutters

are needed on an open cornice, they would have to be of the hung or flush types.

THE MAJOR ADVANTAGE of the open cornice is that it is completely ventilated, since air can circulate freely. This avoids some of the rot problems that closed or box cornices fall prey to.

IN A CLOSED OR BOX CORNICE the rafter ends are completely enclosed by fascia and soffit boards. (See sketch at top of pg. 116.) This makes a more elegant looking cornice—and allows more design flexibility in the way gutters are handled. Gutters on a boxed cornice can either be of the hung or built-in variety.



Built-In Gutters

ABOUT THE ONLY ADVANTAGE of a built-in gutter (see sketch at left) is appearance. A correctly built—and maintained—built-in gutter is a thing of beauty. A built-in gutter is almost completely invisible from the ground, and thus there is no unsightly gutter line to mar the appearance of the cornice. Built-in

(Continued on page 116)

Carpenter Gothic Revival

By Barbara Schiller

WHEN CHIP AND JANE LEONARD began renovating their old house in Colfax, North Carolina, the whole community watched with interest and enjoyment. For Harmony Hill had been bought in the early 1900's as the summer residence of Lt. Governor C. R. Reynolds, a generous and hospitable man who had helped many of the local people get a start in life.

THE LEONARD'S CONTRACTOR had played in the huge barn as a child. And one day in 1977 when the Leonards were hard at work, an elderly woman came by to watch and told them that she had been born in the house 87 years ago the day before yesterday.

C. R. REYNOLDS had added a new wing to the original six room house, almost doubling the size of the building. Electricity was provided by a generator next to the well house. It was one of the first houses in the area to have indoor plumbing. There was a large yard, a garden, fruit trees, a blacksmith shop, the old slave quarters--all in all a fine summer place for a member of the rich and prominent Reynolds tobacco family.

BUT FOR FIFTEEN YEARS PRIOR to its sale to Doctor and Mrs. Leonard, the gracious old house had been used as a barn. Jane thought it would never be clean enough to live in. "Rats had lived happily here and left their calling cards. Car engines dripping oil had been stored in an upstairs bedroom." The plaster was cracked and there had been a bad leak in one corner of the building.

THE HOUSE HAD BEEN CHECKED OUT and found structurally sound. Termite damage? Looking at the old oak studding, an exterminator had assured the Leonards that "termites wouldn't bother this place. They'd have to stop and sharpen their teeth too often."

JANE AND CHIP RESERVED the finishing work for themselves and hired a contractor for the rest. The house was stripped to the studs in order to rewire, replumb and provide the necessary support for a sagging second floor. The main entrance hall is the only room with the original walls.



The old house had been used as a barn for 15 years, sheltering rats and car engines dripping oil.

THE LAYOUT NEEDED CHANGING to make the house liveable and comfortable by present-day standards. The original part of Harmony Hill is one room deep with rooms to either side of a central hall. The kitchen and dining room were in a derelict addition at the back of the house. This was removed and a living room and a screen porch added. The fenestration in the new addition facilitates the movement of air during the warm summer months.

THE OLD-HOUSE JOURNAL[®]

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Harmony Hill today. Note the Gothic trefoil in the gable of the original structure and the scroll trim of the porch columns.



Window frames and wooden mantel in the bedroom are painted in Williamsburg Powell-Waller Red against white walls.

IN THE "NEW" WING the Leonards changed the position of an awkwardly located bathroom. Two old fireplaces were bricked up. They lacked dampers and the Leonards had visions of soaring electric bills as the heat disappeared up the chimneys. If stoves are needed the Leonards will unbrick and line the old chimneys with firebrick.

THE NEW FIREPLACES in the living room and dining room are faced with old brick taken from the foundation and the kitchen chimney. The Leonards scouted out the most unusual of the handmade bricks only to have the mason discard them as "pretty uneven old bricks." One hearth brick is actually concave.

AFTER THE FLOORS WERE SANDED and the doors and staircases stripped, Jane went to work putting a tung oil finish on the doors and floors. (Sources for tung oil can be found in the

1979 OHJ Catalog.) She regrets that she had not heard about this wood finish sooner, for the staircases were given a conventional polyurethane finish. Jane used 6 coats of tung oil on her old pine floors. They can be kept clean with ordinary household cleaners such as Spic 'N Span. When scratches appear they are simply retouched with tung oil. Painted woodwork was done in appropriate colors from the Williamsburg line (also in 1979 OHJ Catalog.)

THE LEONARDS feel that restoring Harmony Hill was a "challenge of seeing just what what we could do." Of course, the process had its discouraging moments. But when Chip's uncle, upon seeing the finished house, exclaimed that he hadn't seen the seven wonders of the world, but now he was sure he had seen the eighth-- the Leonards believe that sums up their feelings as well. 



The rundown addition containing the bathroom and kitchen were removed from the original part of the house.



In place of the old addition, a new one was constructed containing the living room and a screened-in porch.



Old-House Intercoms Buzzers, Beepers, Buttons & Bells



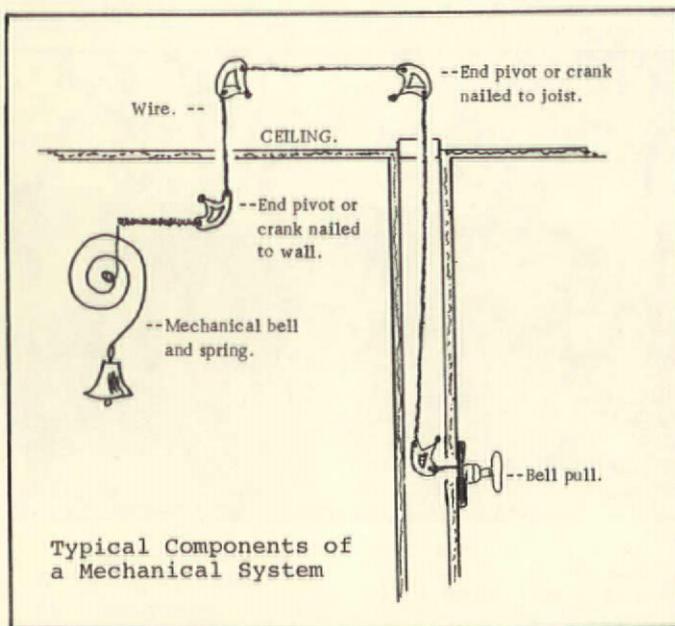
By Tom H. Gerhardt

ANTIQUE SIGNALLING and intercommunication systems can puzzle the old-house owner, but repairs and reconstruction are often necessary. The signalling devices were very common in large houses, especially where servants were employed. There were three basic types of systems in use during the last half of the nineteenth century and early twentieth century: Mechanical bell systems, Electric bell systems, and Speaking tubes.

IN SOME VINTAGE HOUSES these systems are still in working order; many others need repairs and are missing parts. Some detective work is usually called for—and so is extensive reconstruction.

Mechanical Bells

MECHANICAL BELL SYSTEMS were used before the invention of the electric coil. Although they were simple, they often failed because of the wearing of moving parts and the breaking of wires. Basic components included: Bells hung on metal straps that were coiled once or twice, metal pivots or cranks, wire, and bell pulls.



A WHOLE BOARD OF THESE BELLS, signalling from various rooms and entranceways, would have been found in the kitchen or pantry. The bells had different tones to indicate the signal's origin, and they were also usually labelled.

THE WIRES SNAKED through walls, ceilings, and floors, turning corners by way of metal pivots or cranks. Finally the wires were attached to pulls or handles that activated them. Sometimes the wires were attached to a cloth bell-pull hanging from the ceiling—still a familiar decorative item.

IT IS DIFFICULT TO RECONSTRUCT the mechanical bell systems if parts are missing or if the wires are broken or dropped back into the wall. Rewiring is no trouble if the pivots are accessible; but unfortunately, in most cases the job requires reaching into the walls, ceilings and floors for the various pivots.

Electric Bells

SOMEWHAT MORE CONVENIENT and dependable were the electric bell systems installed in residences after the invention of the electric coil. These electric systems were often used even before the invention of the first practical electric light in 1879. Although they are easier to reconstruct than the mechanical bells with their hidden wires and pivots, the electric bells are more complex. Owners should be familiar with the system before attempting repair.

THEY WERE OFTEN INSTALLED less cautiously than regular wiring because of their low voltage and low amperage. This rarely presented a hazard, but it did cause frequent difficulties. In pointing out the opportunities for a good "bellhanger" and the advantages he could offer his community, T. D. Lockwood in his 1882 edition of "Practical Information for Telephonists" made these statements:

"In many cities of moderate size, and even in the small towns and villages, numbers of persons, especially those of a technical and scientific turn of mind, would be much delighted to have their houses fitted with electric bells, or connected with their stables; and in short, to have done neatly, perfectly, and scientifically what the ordinary bell-hanging fiend (who is second among the *bete noirs* of the household only to the ubiquitous plumber) does clumsily, imperfectly, worthlessly.

"...instead of having bell-hanger's joints to come apart when the handle is pulled, and coarse unmusical cow-bells to announce a stranger at the door or to summon Bridget to the presence of her mistress or to notify James to harness the horse, the very acme of quintessence of earthly happiness would be attained if they would only consent to adopt the press button as their swift-footed Mercury; the battery in lieu of the muscular force of the arm; and the electric wire in place of the mechanical wire."

SPECIFICATIONS IN HOUSE PLANS included sections on Bells and Tubes, as in this one for an eleven room house built in 1897-1898:

"Provide and put up in the rear hall two different toned, good bells; one to ring from the front door and one from the side door.

"Provide and put up in kitchen a five-number annunciator with neat cabinet finish, wired with push connections from dining room, library, reception hall, and the two front chambers—all to be properly connected with best insulated copper wires.

"Place a good-toned bell in servant's room to ring from front chamber. Place a combination tube and bell from the front hall to kitchen and laundry—all to be properly connected with the best insulated copper wires provided with a good substantial battery box and key, located in basement."

THE TYPICAL COMPONENTS of the electric bell systems are all mentioned in these specifications and will be explained in the following paragraphs.



THE ANNUNCIATOR was the center of the electric bell system. Usually in the kitchen, pantry or servants' hall, it was needed to avoid confusion when there were more than two locations where pushbuttons would be placed. Even with their distinct tones of sleigh-bells, Swiss bells, cow-bells, etc., many different bells in one house were confusing.

AN ANNUNCIATOR WAS SIMPLY a box with a bell, and indicators that changed when a button was pressed. Each indicator was numbered as to the location of the originating button.

EARLY ANNUNCIATORS WERE ATTRACTIVELY enclosed in oak, walnut, cherry, or mahogany cases. Those manufactured at the turn of the century and before often had carved tops above the bell. Below the bell was a glass window, through

which you'd see the indicators, which were usually gold-painted hands. The background was black so the indicators were very visible. The numbers or names of the originating stations might be lettered on the background.

WHEN THE PUSHBUTTON WAS TOUCHED, the circuit was completed through a solenoid (electric coil) that was behind each indicator, then on through the bell. The indicator would move and the bell would ring to attract a person's attention to the box.

AFTER THE CALL WAS RECEIVED, a lever on the annunciator box was pushed to reset the indicator to the normal position so that it wouldn't be confused with the next call. Later annunciators were equipped with self-restoring indicators.

SOME ANNUNCIATORS had labelled cards that dropped down, instead of needles or arrows as indicators. Some needles moved left or right, to indicate two stations per needle. And annunciators with switches for cutting out certain circuits were available as combination burglar alarm/call systems.



LEADING ANNUNCIATOR COMPANIES were Knapp; Partick, Carter & Wilkins; and Ross. Many small manufacturers had local cabinet shops do the woodworking, producing quaint, individual cabinet designs in odd woods. Some annunciators also bore the name of the electrical supply house from which it was purchased. Modern annunciators have metal cases and indicator lights.

THE EARLIEST ELECTRIC POWER SOURCE for annunciators, bells, and buzzers was the battery. The first batteries were glass jars containing zinc and carbon. Sal ammoniac (a liquid) was added to produce current.

THESE BATTERIES OF COURSE needed new components every so often, depending on use, to keep the current flowing. The number of batteries used depended on the equipment and the distance the current had to travel. They were connected in series (from the zinc of one jar to the carbon of another), with more jars used for increased voltage.

DRY BATTERIES WERE ALSO USED and were connected similarly to the wet batteries. Each cell produced 1-1/2 volts and again was connected in series with others (from the outer terminal of one to the center terminal of the other) to produce higher voltage. A very common setup had four cells producing six volts.

AROUND WORLD WAR I, doorbell transformers became very popular. They would step down the normal house current to 6-24 volts. These could be attached to a lighting circuit in the house and then connected to the bell wiring. Experimentation was necessary to find the voltage which rang the annunciator and bells properly at the desired volume. Generally the doorbell transformer took more voltage because

it produced alternating current. The batteries produced direct current that flowed in one direction only and would operate the signals properly at a lower voltage.

IN SYSTEMS WITH TWO BELLS and an annunciator drop all operating at once, 16 volts or more may be required. When bells are operated between buildings the higher voltage may also be required. A 24-volt transformer, which is usual for chimes, is the safe limit on voltage for bells and annunciators. If the system does not operate on this, something else is wrong.

ALTHOUGH THESE TRANSFORMERS run continuously, they draw maximum current only when the signal is being operated. The voltage and amperage are so low that there is little danger of shock; however, the wires must still be properly insulated to prevent shorts. A short will burn out doorbell transformers, since they are not protected by circuit breakers.



EXTERIOR AND INTERIOR PUSHBUTTONS were often very fancy and made of bronze, brass, or wood. The buttons themselves were porcelain or pearl. Interior pushbuttons were placed near the fireplaces, doors, or lightswitches (if the house was wired for electricity.)

OCCASIONALLY THE DINING-ROOM pushbutton was on the wall, but more often it was conveniently placed on the floor underneath the table. A person seated at the table could push it with her foot and summon a servant. There was also a combination pushbutton that could either be stepped on or have a plug inserted in it with a cord to bring the button to the tabletop.

MANY TIMES A BUTTON COMBINED with a speaking-tube; one pressed the button to summon the person at the other end of the tube. Or alternately, as the lid was lifted on the tube, it would automatically ring an annunciator or bell at the other end.

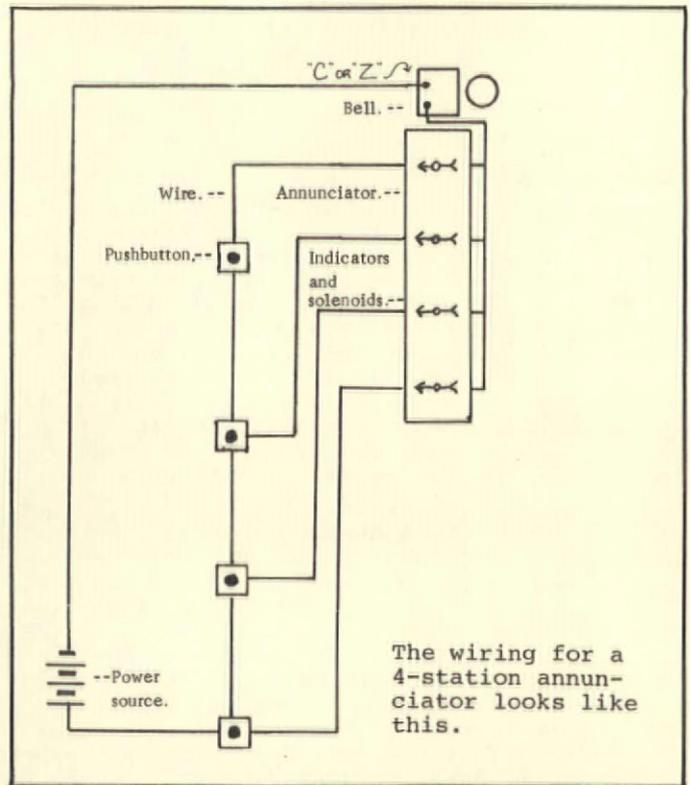
WIRE USED IN A BELL SYSTEM was 18-gauge insulated wire, appropriately called "annunciator wire." It was a single wire that had paraffined cotton thread wrapped around it for insulation. Different colors of cotton served as a code to avoid wiring confusion in complicated systems. The single wires were stapled separately to the framing of the house with uninsulated staples. By attaching the wires separately, short circuits were avoided that might have occurred if the bare staple had cut through the insulation. This also prevented shorts that commonly came about

when animals chewed on the cotton. Heavier waterproof wire was used for underground circuits between buildings.

ANNUNCIATOR OR BELL WIRE with plastic insulation can be used in modern repairs. Two, three, four or more separate wires are contained in sheathed cables. The sheathing further protects the wiring, though sometimes there are fewer or more wires than are needed at a particular point in the system. This doesn't happen when separate wires are run in the numbers and lengths necessary.

NORMALLY, ONE TERMINAL ON EACH of the pushbuttons is wired directly to one terminal on the transformer. This means that a common wire (preferably of one color) from the transformer is run throughout the house and branches to each pushbutton. Connections are soldered and taped, and insulated staples should be used in attaching the wires. Return wires are run back separately from the other terminal of each pushbutton to the proper annunciator terminal. The terminals that lead to the solenoids for the indicators are usually numbered, but sometimes have to be rung out to determine what button should be connected to which terminal to give the proper indication. (See diagram.)

ONE TERMINAL ON THE ANNUNCIATOR is usually marked "C" or "Z". This one leads from the bell and should be wired back to the other terminal on the doorbell transformer to complete the circuit. (This is opposite the one that the pushbuttons are connected with in common.) Whenever an annunciator has an electric reset device to restore the indicators, it also has a terminal to which must be attached a wire leading to the terminal on the doorbell transformer where the common line to the pushbuttons is attached. (Not shown on diagram.)



Speaking Tubes

THE "BELL-HANGER" OR ELECTRICIAN also constructed the speaking tubes. Speaking tubes were simply tin pipes of 1-inch to 1-1/2-inch diameter soldered together and run through the walls, opening into certain rooms or entranceways, or going to other buildings. They transmitted conversation very well. They were so simple that little could go wrong, unless they became clogged or fell apart in the wall.

THE SPEAKING TUBE ended with a porcelain mouthpiece. The tubes generally emerged near light-switches, pushbuttons, or under the annunciator itself. Some mouthpieces had a spring door and a whistle inside, so that blowing into the tube from one room attracted the attention of the person answering the call in another room. As mentioned previously, often the mouthpiece was connected with the electric bell system.



Speaking Tube Whistle
& Porcelain Mouthpiece

A VARIATION PROVIDED A FLEXIBLE HOSE with the mouthpiece attached, so that one could pick up the mouthpiece. Speaking tubes worked well between buildings. Iron pipe was used underground, sloped to a drip and petcock to drain it. Moisture from condensation was thus released to prevent blockage.

SPEAKING TUBE SYSTEMS that have been dismantled can be rebuilt (with salvaged mouthpieces) by using any kind of pipe 1-inch or over in diameter. The joints do not have to be watertight—unless the system is underground or outdoors—but the pieces should be secured well enough that they won't vibrate and fall apart. Ⓜ

TOM GERHARDT is First Vice-President of the Historical Association of Greater Cape Girardeau, Missouri, as well as our Midwest Editor.

COMING NEXT MONTH: Troubleshooting--testing the components of a non-working electric bell system.

Licking Tarnish with Tung Oil

By Patricia Poore

THE EXTERIOR DOOR HARDWARE on our brownstone is brass: knobs, escutcheons, and kickplates. When we arrived in Brooklyn the hardware was thick with paint. Stripping metal is easy—we used chemical stripper, but even a homely hot vinegar bath works. The hard part's protecting the metal so it doesn't need daily polishing.

WE WENT THE CONVENTIONAL spray-lacquer route first. Carefully following the directions on the can, we applied the lacquer and replaced the hardware. Since the doors had recently been restored and painted deep maroon, it made a pretty picture. Two days later it rained.

AFTER THE STORM the brass blazed with color. Under the lacquer there were garish highlights of purple and green. There was some indigo, too. Never had I seen such sudden and complete tarnishing. We were demoralized.

THEN I THOUGHT of tung oil. We had nothing to lose so we got out our March 1977 copy of "The Old-House Journal" and turned to "Why I Swear By Tung Oil." This article was written by refinishing expert Frank Broadnax, and he said tung oil protects metal. We took his advice:

● WE BROUGHT THE BRASS HARDWARE upstairs and removed the shamed lacquer with 4-0 steel wool

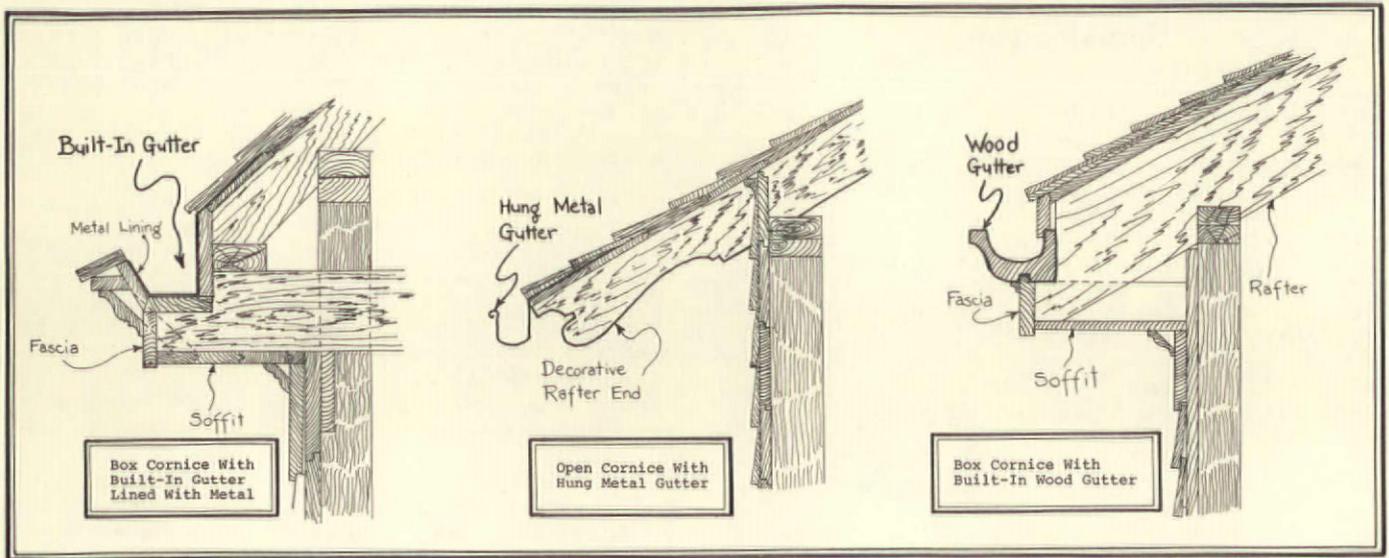
dipped in lacquer-thinner, followed by a quick wipe with brass polish. This provided a mirror-finish that's optional for exterior hardware. If the pieces aren't scratched, soaking in Mr. Clean is enough to remove the lacquer. On the other hand, if your brass is scratched and pitted, you might want to rub it with WET 600-grit sandpaper (silicon carbide only-- the black paper) followed by steel wool and polish.

● IF YOU'VE USED detergent or polish, do a final rinse with lacquer-thinner or mineral spirits to remove residue. We wore plastic gloves from this point. No fingerprints allowed, as they interfere with the drying of the oil.

● WE PUT THE PIECES IN THE OVEN for 20 minutes at 150-200°F.

● NEXT WE APPLIED tung oil to the brass with a soft cotton rag. (Very small pieces can be dipped.) Frank Broadnax wrote: "Apply a thorough coat, let it set for 15 min., then buff off excess oil with a soft cloth. Let dry at least four hours." But finding exactly the right time for buffing was tricky, and if we waited too long there was a problem with tackiness and lint. So instead we did a constant light rubbing with an oil-soaked rag, back and forth and in figure-8s, not letting the cloth stop or the oil get tacky. We renewed the oil on the rag so it was really like putting on many thin coats. We avoided the setting and buffing altogether.

THE BEAUTIFUL BRASS hardware went back up on the doors. Four months later and after plenty of bad weather, it still looks good. Now we swear by tung oil, too. Ⓜ



(Gutters—Cont'd. from page 109)

gutters have a classic beauty, and their removal from some historic houses has caused great harm to their appearance.

Disadvantages

BOX CORNICES look good—but they are a horror when it comes to maintenance. They do not dry out as quickly as open cornices, and thus are more prone to rot. This is true whether they have built-in or hung gutters. The problem is compounded with the built-in gutter. As can be seen in the diagrams above, if a built-in gutter starts to leak, it will pour water right into the cornice...and often down into the main structure.

THUS, the box cornice with a built-in gutter requires constant monitoring—at the minimum once a year—to make sure that all the seams in the gutter are still water-tight. Metal linings are especially prone to failure at the seams because of constant expansion and contraction. Ice build-up can also cause serious damage to liners. A program of regular re-soldering of joints is a necessary part of having a built-in gutter. And for most of us, this type of soldering is not a do-it-yourself job; it's a task for a professional metal worker.

IT'S BECAUSE of this heavy maintenance requirement that many built-in gutters have been decked over and replaced with hung gutters.

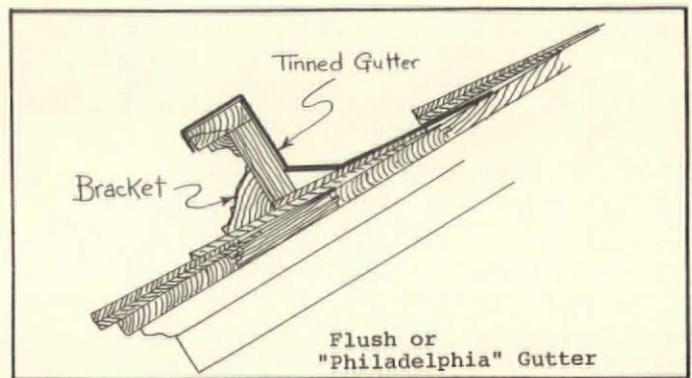
Choices

EVEN WITH all of the above drawbacks, if an old house currently has a built-in gutter, all reasonable steps should be taken to retain it...because it is part of the original architecture. The owner's first responsibility, however, is to the overall good of the structure. And if a leaking

built-in gutter is causing serious damage and it is prohibitively expensive to totally replace it, then an alternative gutter system is called for.

FOR MUSEUM HOUSES and historically important structures, extraordinary steps are warranted to save or restore existing built-in gutters. And for ANY house with built-in gutters, the following maintenance steps are critical:

- Keep gutters free of debris. Trash can cause two types of damage: (1) By clogging leaders, it can cause water overflow and ice build-up; (2) Any acidic elements at the bottom of a damp trash pile can eat away at the metal liner.
- Inspect joints frequently. If any cracks are found, they must be soldered immediately or patched in some other way (more on this later). As noted earlier, soldering of this type normally would be done by a skilled roofer or metalsmith. However, a knowledgeable homeowner with the right equipment could also do this work.
- Any gutter liners made of tin, galvanized or terne metal should be kept painted.
- Install soffit ventilators in the cornice. This helps the cornice dry out and wards off



rot after the inevitable periodic leaks of water into the woodwork. Ventilators have a drawback, of course, in that by increasing air flow inside the cornice they also add to heat loss in the winter. This can be minimized by proper insulation of attic spaces (see OHJ, Sept. 1976, pg. 9).

● Avoid ice build-up. Ice in gutters puts a tremendous strain on the seams of the metal liner. Also, ice dams can cause water back-up and overflowing that will direct water into the cornice. Thermostatically controlled electrical heating cables are probably the simplest way to keep ice out of gutters. These cables should be available through large hardware stores.

Patching Deteriorated Liners

WHEN THE METAL LINING in a gutter starts to fail, you face the "repair or replace" decision. No material lasts forever, and at some point it makes more sense to replace the entire liner rather than attempting to patch it piecemeal. The odds are that if it has failed in one place, the material may be getting ready to fail in another spot. Repair is usually the most economical solution in the short run—as long as the owner is willing to devote the inspection time required to ensure that the liner doesn't fail in a new place. You can't make a patch and walk away from the task confident that you've taken care of the problem for all time.

WHEN DEALING with a metal liner, a metal patch is the most durable solution. However, patches made of fabric embedded in roofing cement may be more convenient for owners who aren't handy with soldering equipment. See OHJ, Sept. 1979, pg. 101, for details on patching metal gutters.

The "Black Goop" Solution

IF YOU OPT for patches of fabric and roofing cement, be aware of two points: (1) Such patches should be checked annually to be sure they are still sound; (2) Don't get carried away in the use of roofing compound. Some people figure that if a little roofing compound is good, a lot is a better.

THERE'S A DANGER in this "Black Goop" solution. It is always possible for water to get under a membrane of roofing cement. We have reports from readers of wooden gutters totally rotting out under a layer of roofing compound. If water does penetrate through a crack in the roofing compound, the moisture will be held in close contact with the wood.

SIMILARLY, WITH METAL LININGS, coating the entire gutter with roofing cement is not desirable. Some of these materials are acidic and can corrode metal. Also, any moisture that seeps in will be held in contact with the metal. This is especially bad with galvanized and terne metal.



The Loop-Harrison house (1872) in Port Sanilac, Mich., has built-in gutters in the cornice at the base of the handsome Mansard roof. While giving a clean uncluttered look to the front of the house, such gutters often leak water into the structure.

BECAUSE OF POSSIBLE acidity problems, roofing compound should never be used in direct contact with bare metal. If roofing compound is being used for a patch, the metal should first be coated with a good quality metal primer, such as Rust-Oleum.

THERE IS ALSO an industrial product, called "Miracle Seal," that has been used with success in sealing leaks in metal gutters, flashing, and the like. It is a pliable, self-adhesive rubberlike material that will stick to any clean, dry surface. It comes on a paper backing which allows it to be peeled off and slapped right in place—without getting black goo all over everything. Because it is an industrial material, however, it isn't available in small quantities (see box below). It might be possible to split a carton with a neighbor.

A Gutter Sealant

"MIRACLE SEAL," a self-adhesive rubberlike material that can be used to seal leaks in metal gutters, comes in rolls 2½-in. and 8-in. wide. The 8-in. material comes 25 ft. per roll; 3 rolls per carton. Price is \$65.91 per carton (No. 7-2410).

The narrow 2½-in. material comes in 25 ft. rolls, 4 rolls per carton. Price is \$46.44 per carton (No. 7-2420). Prices include shipping and handling.

Order from: Revere Chemical Corp., 30875 Carter St., Solon, OH 44139. Tel. (216) 248-0606.



This built-in gutter at the base of a slate Mansard roof is lined with lead-coated copper for maximum durability.

THERE ARE ALSO a number of gutter sealants that are available in hardware stores under a variety of trade names, such as "Patch Magic" (by Magic American Chemical Corp., Cleveland, OH) and "Flashband" (by Evode, Inc., Somerdale, N.J.). Open seams can sometimes be sealed with a high-quality elastomeric caulk/sealant such as Geocel Water Seal 100 (by Geocel, Ltd., Elkhart, Ind.).

IT SHOULD BE RE-EMPHASIZED that any of these "soft" patches should not be regarded as permanent. They will deteriorate upon exposure to weather, and need to be inspected at regular intervals. And at some point, there is no choice but to replace a much-patched metal liner.

Rebuilding Gutters

REBUILDING A ROTTED-OUT gutter system and/or cornice is an expensive proposition, but in certain cases the house may warrant the investment. This is a major undertaking—beyond the scope of this article—but the following should be noted as guidelines for any rebuilding effort:

- Carefully document the system as originally constructed with photos and sketches so that it can be duplicated.
- Re-use as much of the original material as can be reasonably salvaged.
- Treat old and new material heavily with wood preservatives with water repellents added. Commercial products like "Wood Life" fit this specification, but it contains pentachlorophenol, which is a poison that can be absorbed through the skin. USE WITH CARE!

IN ADDITION, use pressure-treated wood where possible. Prime all wood on all surfaces before assembly. (This provides greater dimensional stability to the wood and helps prevent rot.) Apply two finish coats of paint on exposed surfaces.

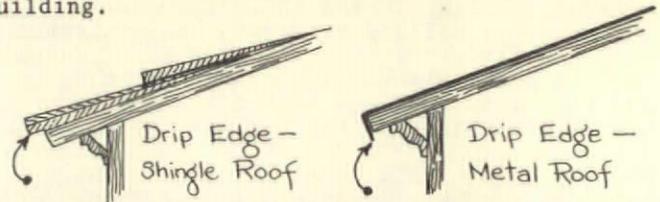
- Install rosin paper under metal gutter lining to help prevent condensation on the underside of the metal in cold weather.

- Change drainage patterns if necessary to improve the rate of water run-off.
- Install adequate soffit ventilation.
- Consider using the most durable metal for the gutter lining, i.e., lead-coated copper.

A DETAILED ACCOUNT of the rebuilding of a built-in gutter system is contained in the booklet "The Morse-Libby Mansion" written by Morgan Phillips of the Society for the Preservation of New England Antiquities. To obtain a copy of "The Morse-Libby Mansion," send \$2.40 to: Supt. of Documents, Government Printing Office, Washington, D.C. 20402 and ask for #024-005-00699-1.

Covering Built-In Gutters

SINCE THE RECONSTRUCTION of a built-in gutter is such a major undertaking, homeowners often opt for a less expensive alternative. Most often, the choice is to abandon the built-in gutter entirely. This can be done by decking over the old built-in systems and doing away with gutters altogether. All that you need is a drip edge at the top of the cornice or eaves to keep water from running down the side of the building.



THIS SOLUTION RETAINS the visual integrity of the building—and relieves some of the maintenance anxiety that is inherent with a built-in gutter. However, since the water is not carried to a leader, it often goes places you'd rather it didn't—such as down the side of the house in a high wind, or into your face as you come out the front door.

YOU MUST ALSO be sure that the closing off of the old gutter is tight and complete. Readers have reported cases where the seams on the gutter covering opened up, and water started pouring back into the old abandoned gutter system. With the leader pipe hole now blocked off, you can imagine the disaster that caused!

THE MORAL IS that even if you cover over a gutter, you had better periodically check the condition of the new roofing or the problem will come back to haunt you.

NEXT IN YOUR RANGE OF OPTIONS is to cover the built-in gutter and install a hung gutter. This will direct the water where you want it to go...but a hung gutter can look quite ugly on a fine building. A great deal depends on the care taken with the installation.

NEXT MONTH, we'll look at hung gutters in greater detail...and examine a hybrid gutter system that combines features of both the built-in and hung gutter systems. 

Sawdust Absorbs Messy Goo

THIS EARTHY BUT EFFECTIVE method for removing old finishes from wood often eliminates the use of steel-wool.

PAINT ON YOUR FAVORITE stripping chemical and sprinkle a generous amount of sawdust over the wet surface. (Sawdust is free if there's sawmill nearby.) Let it soak as usual, then rub vigorously with a burlap sack to remove the stripper, sawdust, and old finish. The sawdust absorbs the messy goo and is slightly abrasive, while the burlap acts as a buffing pad.

THE SAWDUST CAN BE REUSED, and when you're all done, simply sweep it up. Usually sanding isn't required.

Helen E. Conrath
Zanesville, Ohio

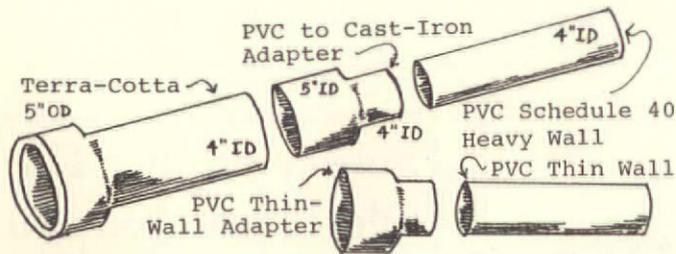
Coupling Terra-Cotta To PVC Pipe

ONE OF OUR FIRST restoration projects reflected an essential step right off the Old-House Journal maintenance list—preventing water damage. The task involved in-ground drainage systems that carry rainwater from the various downspouts.

WE REPAIRED both a middle-of-the-run and an extension of the existing terra-cotta system. The failing parts at mid-point of a homemade multiple connection of terra-cotta pipe could not be replaced with terra-cotta, because the pieces are preformed and would match neither the homemade connections nor the existing locations of downspouts. Also, terra-cotta is inflexible, so that even if the pieces had matched there would be no play to allow installation of the new pieces in the middle of a run.

WE FOUND A SOLUTION that saved both labor and the cost of new pipe: You can use PVC Schedule 40 four-inch pipe in replacing long runs. Most plumbers would say an adaption of PVC to terra-cotta is impossible. They are wrong.

THE ANSWER is a cast iron-to-PVC adapter 5-in. to 4-in. which will fit over terra-cotta that's reasonably round. (In some cases filing or sanding the inside surface of the PVC is necessary to correct out-of-round situations.)



THE ADAPTER will go on the terra-cotta very snugly—you may even find it requires tapping with a hammer. For a watertight seal, silicone caulk should be applied afterwards.

IF YOU NEED TO EXTEND a run of terra-cotta with PVC but have the bell end of terra-cotta to contend with: Secure one more 2-ft. piece of terra-cotta, and cut off the bell with a masonry circular saw or carbide hacksaw blade, then continue on with the PVC as above.

THERE IS ALSO a 6-in. to 4-in. thin-wall adapter made that requires oakum and concrete to seal; however, many local codes won't allow thin-wall PVC.

Jack W. Heffelfinger
Reading, Pennsylvania

Paint Clean-Up

WHILE DOING AN EXTERIOR PAINT JOB in last summer's heat, I found that the inescapable combination of oil-paint, turpentine, and lacquer thinner was causing a very unpleasant skin reaction.

DESPERATELY NEEDING A BETTER METHOD of clean-up, I discovered that simple petroleum jelly and a little rubbing with tissue will take paint off skin. It works most thoroughly on places you'd least want to use harsh thinners -- like the face or forearms. Only the roughest parts of my hands needed to be washed with turpentine.

APPLYING VASELINE or hand-lotion before painting makes cleaning up even easier. You don't have to "grease up"; just a light coat will keep the paint from being absorbed by your skin.

EVEN IF YOU DON'T HAVE AN IMMEDIATE REACTION to paint removers, the use of harsh substances on your skin is objectionable. Over the years a restorer might come in contact with all kinds of thinners, paint stripper, wood preservatives, old lead paint, and so on. We should always take the opportunity to cut down on the number of harsh chemicals we inhale or apply.

Pat O'Donnell
Allendale, N.J.

Got Any Tips?

Do you have any hints or short cuts that might help other old-house owners? We'll pay \$15 for any short how-to items that are used in this "Restorer's Notebook" column. Send your hints to: Notebook Editor, The Old-House Journal, 69A Seventh Avenue, Brooklyn, N.Y. 11217.

Products For The Old House

Supplies For The Restorer



HERE IS A VALUABLE SOURCE for products needed in old-house restoration. There are over 700 items contained in the Renovator's Supply catalog including: Old-style hardware, lighting fixtures, plumbing supplies, and decorative items.

FOR INSTANCE, in the "Plumbing" category, there are Victorian style faucets, plain brass towel bars (single, double and triple), a bathtub drain and overflow, soap dishes and a tissue holder.

MANY ITEMS IN THE CATALOG are hard to locate--a Dutch door quadrant, pyramid-head black screws, or a spring-loaded sash bolt. Lighting fixtures include Early American and Victorian styles and chandeliers, sconces and lamps are represented.

A VERY SPECIAL decorative item offered is a solid brass ornate French folding firescreen at a very moderate price, and don't miss the handsome mechanical doorbells.

WHEN FILLING LARGE orders for contractors or architects, The Renovator's Supply will also locate hard-to-find items not listed in the catalog.

TO ORDER THE CATALOG, send \$2.00 to: The Renovator's Supply, 71A Northfield Road, Millers Falls, MA 01349. Telephone: (413) 659-3542.

A New Source For Metal Ceilings

ALTHOUGH METAL CEILINGS have many advantages--they are fairly inexpensive and create an old-fashioned decorative appearance--their use has been somewhat limited for two reasons. The first is that only a handful of patterns has been available. The second is that only the ceiling filler and narrow cornice has been available. In its heyday, a metal ceiling catalog contained patterns for side walls, wainscoting, and ceiling centers.

THAT IS WHY THIS NEW source for metal ceiling is so exciting. The W. F. Norman Corporation is again manufacturing their 81-year old product line. It contains entire ceiling patterns (borders, centers, fillers), side walls, border plates, foot molds and many more. From this large choice, hundreds of designs can be created and a large or small area can be covered in an architecturally appropriate manner.

THE ARCHITECTURAL STYLES include: Greek, Colonial (from simple to formal) Rococo, Empire, Gothic and Oriental.

W.F. NORMAN is presently offering a reprint of their 1909 catalog. Nearly all of the items will again be produced; the exceptions are marked. Currently there is a limited stock, but they will go into full production at the beginning of the year. Small orders for homeowners will be accepted. W.F. Norman is also looking for distributors for their new/old product line.

TO ORDER THE CATALOG, send \$3.00 and ask for Ceiling Catalogue #350, to: The W. F. Norman Corp., P. O. Box 323-J, Nevada, Missouri 64772.



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