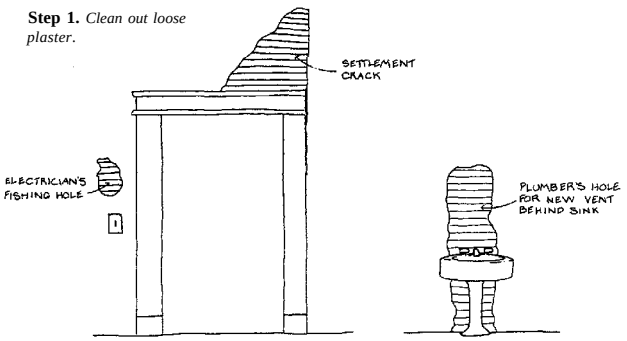
Plaster Patching: Part I

by Walter Jowers

Just about all old buildings have some bad plaster. If the place hasn't been renovated recently, there are probably bulges in the ceiling from old water leaks, or some basketball-sized holes caused by uneven settling over doors and windows. If the place is under renovation, chances are that either electricians or plumbers (on purpose) or attic insulators (accidentally) will have knocked a few fist- or foot-sized holes in the plaster.

Fixing holes in plaster walls can be a problem. Unless you're working in one of about four big cities, you won't have easy access to the plastering trade. And even if you know a good plasterer, it's hard to get him interested in a small job like patching holes in walls and ceilings. Often as not, someone in the general contractor's crew gets drafted to fix these holes. And if the patcher doesn't know a better way, the repair sequence usually involves cutting the bad plaster back to two studs, cutting and fitting a drywall patch for the hole, then taping and mudding the joints. For some rectangular holes that end neatly at studs (like holes left by old doors or heat registers), the drywall-patching method works fine. But for other, irregularly-shaped holes (such as those left by plumber, attic finishers or fishing electricians), a three-coat plaster patch is often a better way.

Step 1. *Clean out loose plaster.*



Why Patch?

Patching plaster walls with new lath and plaster—the way they did it *before* drywall—has these advantages over patching with drywall:

- You don't have to enlarge the hole to accommodate a square piece of drywall. It doesn't make a lot of sense to me to tear out perfectly good plaster and make an even bigger mess before you start to patch.
- Plaster walls typically vary slightly in thickness, so no drywall patch ever fits just right. You can shim all day, but the patch is always a little high here, a little low there. . .
- An irregularly-shaped plaster patch is not as noticeable as a square drywall patch.
- Plaster is harder than drywall.

To make a three-coat plaster patch, you'll need certain tools, which are available at most decent hardware stores.

Equipment:

Plastering tools:

- hawk
- slicker (for patching scratch and brown coats)
- plasterer's trowel
- margin trowel
- mixer attachment for electric drill
- mortarboard (An old piece of plywood set on two sawhorses works fine)
- 6-inch drywall knife
- drywall mud pan
- 5-gal. plastic buckets for mixing
- tin snips
- needlenose pliers/wirecutter
- electric drill
- spray bottle
- tie wire for securing the metal lath (18-gauge wire is good.)

Safety Equipment

- goggles
- work gloves
- dust mask

Materials

The materials you'll need will probably be available only at a good supply house that deals with the plastering and drywall trades.

- ***Metal lath.*** Also called diamond mesh or expanded metal lath, it comes in bundles of ten which sell for about $25.
- ***Perlite gypsum plaster.*** You use this for the scratch and brown coats (bottom two coats) of a patch. There are two types—regular, which is what you want for patching interior walls and ceilings; and masonry type, which is used over a masonry base, for exterior stucco walls and such. I use U.S. Gypsum's Structo-Lite. An 80-lb. bag costs about $7-$8.
- ***Moulding plaster.*** You mix this with finish lime for the finish coat. I use USG Moulding plaster. A 100-lb. bag costs about $7-$8.
- ***Finish lime.*** I use USG Ivory autoclave finish lime. A 50-lb. bag costs $8-$9.
- ***Drywall mud.*** You'll use it for something, if only to tape cracks. A five-gallon bucket costs about $7.

Getting to Work

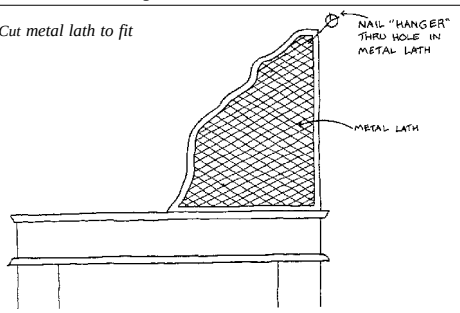
Before you can make a patch, you have to get rid of any unsound plaster. Wear work gloves, goggles, and a dust mask when you do this. I pull out bad plaster with my hands, because if you bang on old plaster with a hammer, or start sawing on lath with a reciprocating saw, you tear up a lot of perfectly good plaster. (The bouncing breaks off sound plaster keys.) When you reach a point where you can't pull out the plaster with a fairly firm tug, you've reached sound plaster. Knock any plaster that's stuck between laths back into the wall cavity, then clean all dust, loose plaster or other debris out of the hole with an old paintbrush.

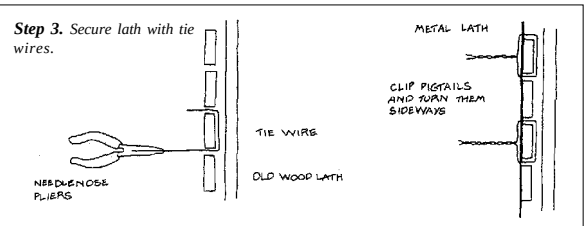
The next step is to cut a piece of metal lath to fit the hole. I do this by cutting a piece of lath slightly oversized, then I hang this piece of lath on a nail driven into the topmost piece of exposed lath. (If this piece of lath is midway between two studs and springy, I drill a hole for the nail.) With the piece of lath hanging on the nail, I can use both hands to cut the lath to size.

Secure the metal lath in place with 6-inch lengths of tie wire. Before you put the metal lath into the hole, bend the lengths of wire into elongated U-shapes and pull them around the old wood lath with needlenose pliers. The tie wires should be spaced about 6 inches apart throughout the hole. Then, place the piece of metal lath into the hole and pull the tie wires through the holes in the metal lath. Twist the tie wires into pigtails, trim off the excess, and push the pigtails up snug with the wire lath. If you have to use more than one piece of metal lath, overlap the pieces 2 inches and tie them together with tie wire. (This sequence is shown in the accompanying illustrations.)

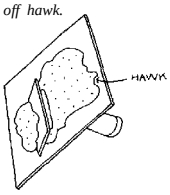
I use USG Structo-lite for the scratch (first) coat and the brown (second) coat. Structo-lite is "instant" plaster; you just add it to water. Don't mix more than you can use in one hour; once it starts to set, you have to throw the batch away. (I find that I can use about half a five-

Step 2. *Cut metal lath to fit hole.*

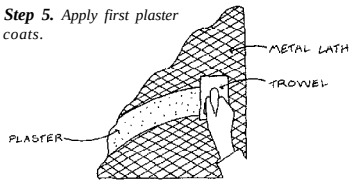




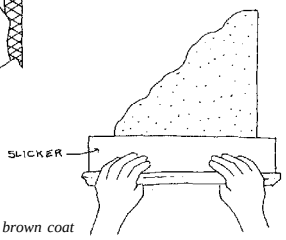
Step 3. *Secure lath with tie wires.*



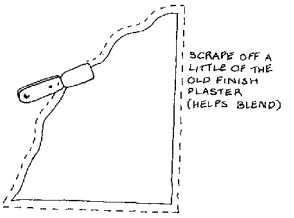
Step 4. *Cut plaster off hawk.*



Step 5. *Apply first plaster coats.*



Step 6. *Screed the brown coat with slicker.*



Step 7. *Prepare for finish coat.*

gallon bucketful in an hour.)

Note: It's best to wear goggles, a dust mask, and gloves when you mix up plaster. You don't want caustic plaster dust in you eyes or lungs, or on your skin.

To mix up a half-bucketful, pour about two quarts of cold drinkable water into the bucket, then dump in about a third of a bucketful of plaster. Stir it with a mixer attachment on an electric drill, then fine-tune the mix by adding a little more water or plaster as needed. The mix should be stiff, with just enough water to wet each grain of plaster. Once the plaster is mixed up, dump it onto your mortarboard and rake about one-fourth of the mix onto your hawk.

Then, holding the hawk in front of you, rotate the far side of the hawk up and toward your body (you can hold the hawk at a 45 degree angle for a second or so before the plaster starts to slide off). Simultaneously, bring the "thumb" side of the trowel into the plaster, cut off a chunk of plaster about the size of your hand, and take it to the wall. Apply it to the lath in an arcing motion (left to right for righthanders). Rotate the hawk a quarter-turn (to keep it balanced) and repeat. To work plaster into edges or corners (or very small patches), use a *margin* trowel. To get plaster into hard-to-reach edges or corners, throw the plaster off the margin trowel into the hole.

Apply the first coat about 1/4-inch to 3/8-inch thick—just enough to "key" into the metal lath. This coat doesn't have to be smooth or level. Let the scratch coat cure for 24 hours.

Use the same plaster (Structo-lite) for the brown coat that you used for the scratch coat. You mix it and apply it just like the scratch coat, only this coat has to be made smooth and level to provide a good base for the finish coat. Screed the brown coat smooth with a slicker, using the edges of the existing plaster as a guide. Touch up edges, and any ridges left by the slicker, with your margin trowel. Let the brown coat cure for twenty-four hours, then use an old scraper to knock off any high spots that you missed during your touch-ups. While you're touching up the brown coat, use your scraper to trim off a little bit of the old finish coat (1/2 to 1 inch) all the way around the perimeter of the patch. This will help the edges of the new finish coat blend in with the old plaster.

None of this is as hard as it sounds. Plaster patching is one of those things that's a lot harder to describe than it is to do. (That's why you see so darn little written about it.)

Now your patch is ready for the finish coat. There are a couple of ways to approach this: One is to simply apply two coats of drywall mud with your plasterer's trowel or your drywall knife, then sand the dried mud and you're ready to paint. The other is to apply a genuine coat of finish plaster. Next month, we'll talk about the subtle nuances of finish plastering (with real plaster), the not-so-subtle steps of applying drywall mud; and, we'll tell you how to patch hairline cracks in plaster so they stay patched. All that, and paint specs for finish plaster, too. ■

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