

BASICS

Sash Window Clinic

Maintaining the Mechanics of Double-Hung Windows

by William T. Cox Jr.

PHOTOS BY LIGHTSTREAM

MOST OLD HOUSES have scores of double-hung windows, and most windows are built to outlast the carpenters who installed them—if they are properly maintained. Unfortunately, past generations sometimes cared little about the moving parts of a wood window. In fact, it's tough after, say, 75 years of painting to recognize the removable parts, especially those that are badly neglected. Yet, when a window gets painted shut or the sashes loosen up, when weights fall or cords fray, knowing how to dismantle the parts of a wood sash window is half the repair battle. Here's a refresher course in maintaining the mechanical parts of a typical double-hung window, one of the easiest and most satisfying operations in old-house upkeep.



David Sharpe

OLD-HOUSE BASICS

THE PERILS OF PAINT

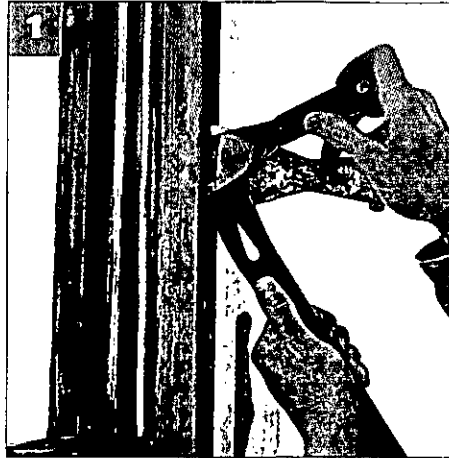
POOR PAINTING SKILLS destroy windows. It takes little more than one sloppy coat of paint to bind a sash in place as strong as any glue. Windows should always be painted in an open position and moved often to keep the sashes free while the paint dries.

To unstick a window that is paint bound, start with a sharp utility knife and gently score the joints between the sashes and stops. Do the same between the bottom rail and stool (the indoor equivalent of the sill). Don't attempt to cut through the paint on the first try. If you dare, most likely the tip of the blade will skate across the face of the stop, leaving you with a gash to repair. Instead, make light passes at first (a cautious approach that has saved many pieces of trim). As you cut, try pushing against the bottom sash stiles several times with your hand to help break the bond. Avoid using a pry bar at this stage as pry marks are nearly impossible to remove.

You may have to go outdoors and cut between the bottom sash and parting stops. Or try this trick. Run a long, thin, flat piece of metal like a saw blade or metal strapping between the bottom sash stile and parting stop at the top and bottom sash meeting rails. Still unsuccessful? Then remove the inside stops by carefully prying these mouldings from their jambs (see next section). If the sash still stays put, soften the paint with stripper and try again.

REMOVING STOPS AND SASH

STOPS ARE BUILT to be movable so you can pull the sash for service, as well as clean off overpaint. To remove stops without damaging the finish, first cut the paint at the joint with a utility knife. Then, get behind the stop on the channel side using nothing bigger than a 6" "trim" pry bar to avoid pry marks. Starting at the middle, pry the stop away from the jamb a little at a time along its full length, prying at or near the nails that typically hold them in



To pry off a stop molding, first score the paint or varnish at any joints. Next, carefully insert a broad putty knife into the joint and put a second knife behind it. Then slide a flat prybar (1) between the knives. While the knives protect the wood, carefully pry off the moulding near any nails. When the stop is loose, carefully bow it (2) to release the ends. Watch for miters and pockets.



place. These mouldings become quite brittle over time and will splinter if moved out too far in one spot. Also, nails rust here more than anywhere else in a house and hold very tightly. If you're unable to move the stop, look for screws. Some stops are fastened to the jamb with flat-head slotted brass screws and cup washers.

As you work the stop free, gently bow it in the middle to release the ends. Note how they are built. Many stops are mitered at the top, but they may also slip into pockets that will split the wood if you muscle the stop out. I've also found stops reinstalled upside down. When you remove the first stop completely, mark an "R" or "L" on the back near the top. Remove the finish nails by pulling them through the wood with nippers.

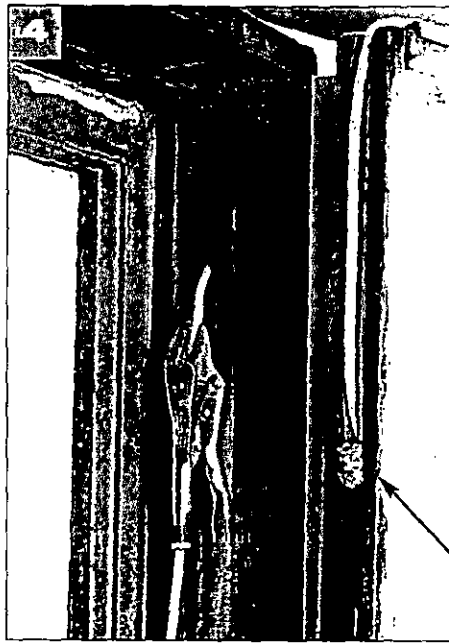
There are so many sash-and-stop designs you may consider becoming a detective instead of a carpenter. Some sashes have a slot cut the full length of the stile, which holds a crimped piece of galvanized tin nailed to the channel. Pulling

the top two nails should loosen the sash. (You may have to cut the rest of the nails to remove the metal strip in one piece.) Try using a 5" tapping knife to get behind the metal weatherstripping. Or, if you resort to tearing the metal out, replace it with 1/4" spring bronze weatherstripping.

PARTING STRIPS

WITH ONE STOP REMOVED, you should be able to cock the bottom sash out of the window frame so it dangles from two cords. Have your helper hold one side of the sash while you investigate how the cord is attached to the stile. The knotted end of the sash cord should sit in a pocket, perhaps secured with a nail. Before removing the cord, tie a slip knot near the pulley (or clamp the cord) to keep the weight from falling into the weight chamber, cord and all. If your windows are big enough to have chains, slip a nail through one of the links.

To remove a double-hung top sash, cut the paint between the top sash and the parting strip. The parting strip (or parting



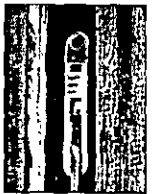
With one stop off, there's enough clearance to lift and angle the sash out of the window (3). Before removing the sash, secure the weight with a knot or clamp (4); the cord end can easily pop out of the sash stile (see arrow, above).

BEYOND WEIGHTS

Though cord-and-weight systems have been used to hold up window sashes for more than two centuries, they're not the only way to go. A variety of devices—both old and recent—are available for securing sashes where weights are gone or never were.

TAPE BALANCES

Also known as clock-spring balances, tape balances are spiral springs enclosed in a case the size of



standard sash pulleys and carefully calibrated to balance the weight of the sash. They have been on the market since the 1890s, and are historically appropriate alternatives to weight systems where the weights are gone or the pockets have been filled with insulation.

CONCEALED BALANCES

A mid-20th century retrofit device, these spring-loaded balances install in a plough in the sash stile, leaving no exposed hardware and keeping the original window appearance.



SASH CAMS

Simple but effective, sash cams are cast iron catches that pivot on a wood screw to hold the sash at the desired height by friction. Low-tech and decidedly 19th century, original versions date to the 1860s and earlier.



bead) is a standard millwork item; if it breaks, you can replace it at your local lumber yard. Pick a side, then start prying the parting strip out near the sill using a pair of locking pliers to gently loosen the wood. It may be secured with two or three 6d box nails. Remove the nails as you pry, working the strip free up to the top sash, but, don't try to remove it completely at this time.

Now, slide the top sash down as far as it will go. Don't worry if it binds. Work the parting strip loose from the header down. The parting strip should twist out

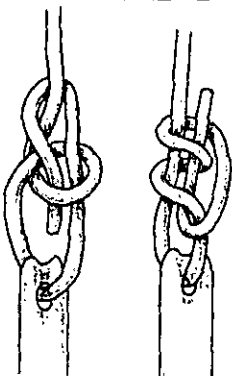
of its gain (recess), freeing the top sash. For now you can leave the other strip in the jamb. Remove the sash cords the same way as described before, then scrape, glaze, and paint the two sashes as needed.

WEIGHTS AND CORDS

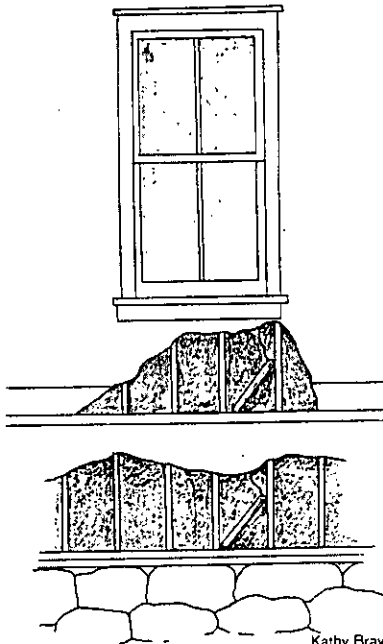
WITH STOPS AND SASHES REMOVED, look for a small door sitting flush in the bottom of the sash channel. This door, usually secured with a single wood screw, will give you access to the weight pockets without having to remove the inside window trim. As you reach for the cords, note which

Know Your Knots

Boy Scout skills aside, hitching the sash weight to the cord is an important step. If the weight hangs at any angle, it may bind in the pocket. If the knot slips, you'll lose the weight. Pros debate over the perfect knot, but the two at left are common for standard weights. You may also encounter patent-style weights designed for speedy installation using only an overhand knot.



Kathy Bray



Runaway Weights

If your weights appear to have flown the coop, look just below the plaster behind a carefully removed baseboard. In the open walls of balloon-frame houses, weights will even drop all the way to the basement.

SUPPLIERS

ARCHITECTURAL RESOURCE CENTER
 557 Old Turnpike Rd.
 Northwood, NH 03261
 800-370-8808
 Sash pulleys, weights, hardware.
 Circle 1 on resource card.

CROWN CITY HARDWARE
 1047 N. Allen Ave.
 Pasadena, CA 91104-3298
 626-794-0234
 Sash cams, sash pulleys, hardware.
 Circle 2 on resource card.

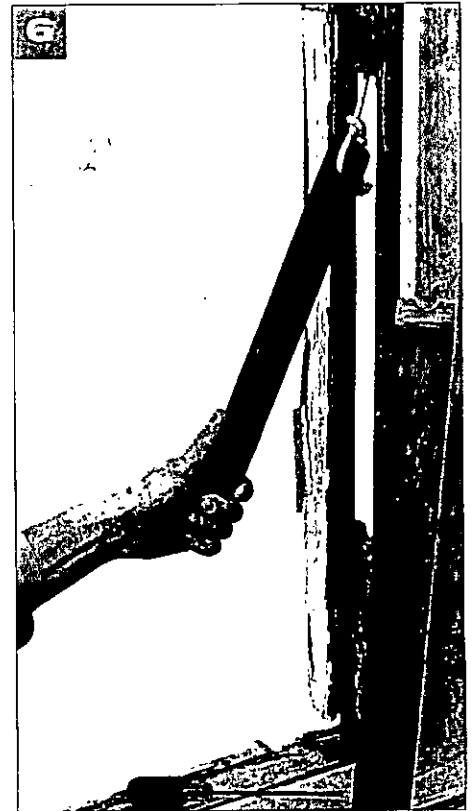
PHELPS CO./ARCHITECTURAL SPECIALTIES
 60 Elm St.
 Brattleboro, VT 05301
 802-257-4314
 Sash pulleys, hardware.
 Circle 3 on resource card.

PULLMAN MFG. CORPORATION
 77 Commerce Drive.
 Rochester, NY 14623
 716-334-1350
 Tape balances.
 Circle 4 on resource card.

STRYBUC INDUSTRIES
 2006 Elmwood Ave. 102C
 Sharon Hill, PA 19079-1084
 800-352-0800
 Concealed balances; call for nearest dealer.
 Circle 5 on resource card.



To remove the parting bead, grasp it with locking pliers (5), then work the strip out from the notch in the upper sash meeting rail. Note that the bead may already be weak or worn at this point. Angled ends and a single wood screw secure the weight pocket door (6) and access to the weights.



weight goes with each sash. If you have, say, a six-over-two window pattern, the bottom sash may be the lighter of the two and will never stay down with the wrong weights tied to it.

Anytime the sash cord shows signs of wear or sloppy painting (which makes the fibers brittle), replace it with the best product you can find. True sash cord is braided cotton surrounding a cotton inner core. I've seen people use clothesline but it doesn't last. (Sunlight and heat destroy the plastic coating, making quite a mess.) Check the oldest hardware store in your town; they should sell sash cord by the foot or fifty foot coils and in sizes for the weights of residential windows—usually No. 7 (5 lbs. to 12 lbs.) or No. 8 (12 lbs. to 20 lbs.). Cut the new cord to the length of the old cord. If the cord is gone, measure from the knot pocket on the sash stile to the top rail, and from the window header to the sill. Adding these two measurements will approximate the length for the sash cord.

Feed the cord back over the pulleys, then tie an appropriate knot to hold the weight—usually either an overhand knot (for recessed holes) or a bowline or “sash knot” (for standard holes). If need be, you can use a snake (a string tied to a small weight) to get to the bottom of the weight chamber. Don't tie the weights so they bottom out on the sill or bind at the pulleys when the sash is moved from header to sill.

After you've scraped the sashes and stops free of paint build-up, reinstall the parts in reverse order. Some folks lightly wax the sash channels at this point with paraffin or bee's wax, but never use soap (it tends to stain). With sash in place, nail or screw the inside stops snug to the bottom sash, then slide the sash up to the header and secure the stops snug there, too. Check the stops again in a few months; seasonal humidity swings will affect stop-to-sash clearance. Last, slide your sashes up and down a few times to satisfy yourself that everything is in effortless working order. ■