

HISTORIC WOOD WINDOW WORKSHOP

Palestine, Texas
April 19, 2008

Procedure:

Disassembly. This should be done from the inside.

ARCHITECTURE

Remove interior stop.

- Do this with care and try to remove stop intact using putty knife and/or flat pry bar. It's ok for nails to pull through the trim.

PLANNING

Remove Bottom Sash.

- It should just lift out. If the counterbalance ropes are still attached, carefully remove the knot from the hole in the side of the sash and let it retract into the pulley in the jamb. Try to keep it from retracting all the way into the weight pocket.

PROJECT MANAGEMENT

Remove Parting Stop

- Be careful, but this rarely comes out in one piece.

HISTORIC PRESERVATION

Remove Upper Sash

- Same as the Bottom Sash

*CULTURAL RESOURCE
MANAGEMENT*

That's it. The window is adequately disassembled for restoration. The blind stop does not come out, nor does it need to.

Examine the Frame

- Look for damage and rot. Clean out and fill rotten wood or replace piece as necessary. Sills are often the location of the most severe damage, especially if there is a stone sill beneath.
- Also check the brick mold (on brick walls, of course) and replace any missing pieces. Caulk around the brick mold with a polyurethane caulk to prevent moisture infiltration.

Clean and scrape the frame as needed to prep for painting and finishing.

Sash pulleys should be cleaned and lubricated as needed.

- Replacements can be found in many locations including Rejuvenation.com and Crown City Hardware.

Prime and Paint Window Frame

Evaluate Sashes

- The most common problem is rot in the joints. Check joints for looseness and damage.
- Sag in the meeting rail is the second most common problem. Unfortunately, not much can be done but to replace the rail.

Restore Sashes

- If glass remains, try to remove the putty. Be aware of glazing points that lurk within the putty and can be hard to see. Old putty can be very, very hard and require a lot of elbow grease to scrape out.
- Try to remove the glass intact. However, breakage of original glass is very common, even with professionals.
- With glass and glazing points removed, scrape and/or sand clean the area where the glass is seated against the wood sash, known as the rabbet.
 - AVOID TEARING OUT WOOD OR ROUNDING THE SQUARE EDGES AROUND THE RABBET.
- Scrape and smooth existing paint on the sash. Wear a mask and remember that historic windows likely have lead-based paint, so try to avoid making dust or breathing dust and, of course, don't eat any of the paint chips. I know that's nuts, but I had to warn you.
- Joints that are weak or have come loose can often be reattached by inserting two 3/8" wooden dowels through the stiles and into the rails. Coat the dowels with Elmer's wood glue or a good Hide glue. Cut off flush with the face of the stiles.
 - Do not use deck screws or screw on metal angles and plates to accomplish this.
- Sashes that are too deteriorated to be repaired in this way probably need a new rail or stile. Typically, a salvaged piece is found because the coping of the pieces is impossible for homeowners to accomplish on their own. Custom cutting of replacement pieces can be expensive due to the cost of making the shaper knives that are required. It is done, however, especially if a significant number of pieces are required.
- Repair gaps and damage. For small holes, wood putty is ok. For larger repairs, epoxy wood fillers are made to preserve structural integrity of the sash. It's probably heresy, but I've started using good ol' Bondo. I have found it to be stable and durable. You have to paint it, not stain it, however.
- If the sash is badly weathered, you may want to wipe it down with Boiled Linseed Oil. Allow the oil to soak in for a couple of hours to re-condition the wood and partially replace some of the natural oils that have evaporated away. Wipe off the excess and let it all dry overnight. Boiled Linseed Oil is poisonous, so don't eat any of this either.

Prime the sash completely, including the rabbet.

Reglaze the Sash

- Put a small bead of caulk all along the back of the rabbet. This is known as back glazing. It will help hold the glass in place and will provide extra protection against wind and moisture infiltration. Here (and only here) siliconized acrylic caulk can be used. Polyurethane is also ok.
- Press the new or salvaged glass into place, spreading and sealing against the back glazing.
- Install glazing points to hold the glass in place. **DO NOT SKIP THE GLAZING POINTS.** Install 2 per side for most windows, for a total of 8 per sash.
- Take some Glazing Putty and roll it around between your hands to get it warm, soft and flexible. Don't try to substitute caulk for glazing putty.
- When soft, roll it between your hands to make a "rope" of glazing putty.
- Press the glazing putty rope into place and make sure you have good contact with both the wood and the glass.
- Tool and shape the putty with a putty knife so that it sheds water and looks crisp. Sharp, clean corners are the mark of a craftsman.
- The putty will remain very soft for weeks, so avoid touching it as you complete the project. Dents, gaps and finger marks are **NOT** the mark of a craftsman.
- Paint the restored sashes.
- The sashes are ready to reinstall when this step is completed.

If weatherstripping the windows, install now.

Repair/replace counter weights and ropes as needed.

- Sash cord is still commonly available in hardware and home improvement stores.

Reassembly is the Reverse of Disassembly.

- Top sash first
- Then replace the parting stop
- Install the bottom sash
- Install the interior stop
- (Hope you remembered to reconnect the weights)
- Paint

Admire your work.

A Couple of Things to Remember

The wood used on historic windows was typically either Red Cypress or Long Leaf Yellow Pine. These woods, even after 100 years, are much more dense and long-lasting than modern pine, fir or "white wood". For new sashes or replacement parts, use only salvaged old lumber or a comparable modern equivalent. Believe it or not, lots of fully custom wood windows are being made of mahogany today.

In making new, replacement sashes, no shortcuts. Side rails extend all the way to the bottom and the bottom rail spans between them. Properly cope and fit the pieces; **ABSOLUTLY DO NOT ASSEMBLE SQUARE, UNSHAPED PIECES THEN COME BACK WITH A ROUTER AND TRY TO SHAPE THE INSIDE.** Those rounded inside corners absolutely scream of poor workmanship.

Do not use pure silicone sealant anywhere on wood windows. It is made for impervious surfaces like glass and aluminum and is **VERY STICKY**. When the time comes to recaulk, and it will, sooner than you think, removal of the failed silicone will invariably tear up the wood.

CONGRATULATIONS!

You have just:

- Saved a bit of history
- Helped revive fading craftsmanship skills
- Improved the energy performance of your windows (if you weatherstrip)
- Reactivated an important natural ventilation and cooling feature and
- Saved the embodied energy of the existing historic windows.

Can't really get any Greener than that.

A handwritten signature in black ink, appearing to read "Norman Alston". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Norman Alston
Principal