



Article by Bob Johnson



The Museum's restoration team has passed a major milestone in the reconstruction of Winona 10. The last of the material has been removed from the car. From this point on we are refurbishing parts for installation. The frame has been carefully evaluated. The objective of this evaluation was to determine which parts are solid enough to be retained for reconstruction. Some frame members from the vestibules of the car were sent out for sandblasting and more detailed analysis of the steel pieces has been completed. We are saving frame members that have sufficient thickness to be used in the reconstruction. Later, the old frame will be rolled out from under the car. This will be a pattern for the fabrication of the body portion of the frame.

The body of the car is also under reconstruction. The parts of the body I will discuss are the sides that are made up of two horizontal members at the top and bottom of the sides and vertical parts called window posts. The bottom, known as the sill plate, is the body part which is bolted to the steel frame of the car. The window posts tie the roof and the sill plate together. It is in the ends of the sill plates and the bottom of some of the window posts that the most challenging tasks are being undertaken. In these areas rotting has taken place, and it is in these areas repairs must be made with great precision. The ends of the sill plates are being repaired by using a combination of carefully machined and assembled replacement wood sections combined with most of the old sill. The rotted material is being very carefully removed, and the reconstructed ends will be connected to the sill using a very powerful adhesive. The window posts are receiving the same treatment.

It is in the restoration of these magnificent streetcars we really appreciate the skills and knowledge of the craftsmen that built these cars. It is also in today's world we recognize the skills and talent of our reconstruction crews, who so skillfully solve these engineering problems and re-create these cars which date from the turn of the 20<sup>th</sup> century. The window posts and the sills are connected together with such great precision that we would have great difficulty reproducing them. Rectangular posts on the ends of the window posts, called tenons, are inserted in rectangular holes called mortises with such precision that each side, once assembled is very stiff and square so that the windows can be easily opened and closed.



**(Above)** Here's Winona No. 10 Restoration Chief, **Ken Albrecht** working on one of the wood pieces of Winona No. 10. This was taken at the Museum's Excelsior car barn and shop and shows Ken measuring one of the replica wood pieces that was fabricated based on the original piece of wood that was damaged structurally. *(Photo by Bob Johnson)*

**(Above)** This photo shows some of the wood pieces that make up the substructure of Winona No. 10. In both instances the pieces were either broken (as you can see in the foreground) or suffered dry-rot damage making the piece, or a portion of the piece, unusable. *(Photo by Ken Albrecht)*



**(Left)** Here's the almost full Winona No. 10 restoration crew working at the Museum's Excelsior carbarn and restoration shop. In the foreground you see **Marv Krafve** keeping the shop neat and clean. Behind Marv are **Ken Albrecht, Jim Willmore, Tom Fairbairn** and **Marsh Ginthner**. There are several others on the Winona No. 10 project crew not shown. These include **Howie Melco, George Ittner, John Prestholdt, Steve Mages** and several others. *(Jim Vaitkunas photo)*



**(Left)** No. 10 has been in "suspended animation" now for several months giving the shop guys some time to assess the condition of the steel pieces that make up the underframe of the car. Actually, you really can't strip down No. 10 much more than it is right now. If you did any more dismantling all you'd have is a pile of lumber and some steel shapes. Our shop guys do amazing work!  
*(Jim Vaitkunas photo)*



**(Left)** This photo shows **Ken Albrecht** on the left discussing a fine point with our master welder, **Howie Melco**. Howie will be the one to weld the bottom piece of the streetcar's steel side sheets back onto the car to make it whole again. This is an incredibly delicate job and, lucky for us, Howie is a master at it. *(Jim Vaitkunas photo)*



**(Left)** Here are just a few of the more than 250 pieces that will go into six individual door operating mechanisms on Winona No. 10. Winona No. 10 had manually operated doors on each side of each end when it was fabricated in 1914. Shortly after the cars were delivered two of the doors were sealed shut because the cars were never used as a two-man car, thus eliminating the need for a rear entry or exit door. Passengers boarded and alighted from the car at the front opposite the Motorman. The Motorman controlled the two sets of doors to his right using short levers on vertical shafts that are connected to a bewildering array of rods, cranks, and other "knick-knacks" located under each platform. (Ken Albrecht photo)



**(Left)** Here's a general view of Winona No. 10 in the restoration shop. Those dark pieces in the foreground are the individual pieces that made up the platform support. They have been cleaned and sand blasted so the restoration guys can determine whether they can be re-used on the car. Some of the pieces have corroded beyond use while others are just fine and will be put back onto the car to reduce the expense of the restoration. All pieces are marked so they'll go back on the car exactly from where they were removed. (Jim Vaitkunas photo)

**(Right)** This photo shows one of the twelve "walk-over" or flip-over seats that will be installed in Winona No. 10. Since Winona No. 10 was a doubled-ended car, at the end of the line the seats had to be reversed so that passengers would always face towards the front of the car. This will also be the case at our Como-Harriet Streetcar Line and No. 10 be an entirely new experience for our passengers and crew because the seats will have to be flipped over twice for each run—once at the Lake Calhoun end and then again at the George Isaacs carbarn end of our Como-Harriet line. (Ken Albrecht photo)

