

## Evolution of a New Bed Frame

Featured Piece of the Month – January, 2021

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It's been almost 40 years since I made a Scandinavian design bed frame for a new Select Comfort mattress. A number of years ago, age caught up with us, and the need for a bed frame that was higher off the floor was required. But what style to make? Having just completed studies in Period Furniture of the 16<sup>th</sup> to 19<sup>th</sup> centuries, and also of the Arts and Crafts movement I was not excited about any of the styles of those periods for this project. Researching for something different, not Shaker nor Scandinavian, I came across an article in July 2011 issue of Fine Woodworking; "Build a Bed" by Matthew Teague. I liked the review of Robert Spangler's, 'Platform with Thick Timbers', Asian design. However, it was too low to the floor, and an update on the design for our requirements was needed.

### Is Asian Style even a Period?



The leg height of the bed in the article is 5 inches; we needed something closer to 12 to 14 inches. After doing sketches of possibilities I drafted legs that were 6 inches square by 13½ inches tall. Choice of wood was ash to match the head board panels I planned, the rest of the bed frame would be cherry to match a cherry dresser cabinet purchased from a Vermont maker. Checking with our wood sources, the only way to a solid leg was to start with a full tree trunk! How do you dry and control movement of that?

Next option, buy 8/4 stock and make the legs from glued up pieces. After milling and beveling 18 pieces (2 extra), a spline was necessary for alignment and strength. Knowing that the shape of the leg would have curves on the outer edges, I cut splines from the same ash material scraps from of the leg pieces. After glue up and cutting to the modified curves, avoiding cutting into the center hollow, an interesting pattern appeared that the artsy part of me really liked. Unfortunately, it follows the 6 inch/6 foot rule, and you have to look from 6 inches to see it. The ash splines are visible on the surfaces and add an interesting pattern to the curved surfaces.



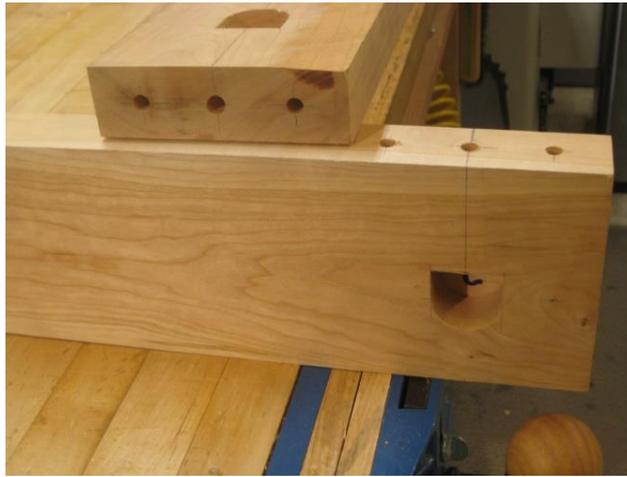
The stretchers are 2 by 2 cherry mortised into the legs. The bottom stretcher has top and bottom curves to match the top of the head board, hard to see with the frame all assembled, but I'll know. The outside dados on the leg tops match the width of the bed frame rails to position it in place.

Next up were the frame sides and rails, the thick timbers part of the project. Building for a queen size mattress required 80" sides and 60" ends. The sides finished to 1 by 6 inches and the top rails to 1½ by 5 inches was the heavy lifting of the project. Sides were milled from 6/4 and rails from 8/4 cherry.



### **Dry Assembly**

Did I mention that the frame had to be a complete knock down assembly, 1<sup>st</sup> to move it around the shop, 2<sup>nd</sup> to move it to finishing area, 3<sup>rd</sup> to move it into our bedroom, and 4<sup>th</sup> to move into our old folks home when the time comes! To accomplish the assembly and take down over time I added alignment holes and pins to each side and rail joint. The pocket holes drilled and mortised to accept 5/16-18 by 6 inch threaded rod and nut fasteners.



Precision was required for these alignment holes if all was to fit together as designed. I believe I spent the better part of an hour on each set, checking and rechecking measurements and planning method to drill holes. The holes were drilled by sistering each board between 2 by 6 by 12 inch long milled boards and using a portable drill guide, small pilot hole first and finish with the 5/16 inch drill. The time and patience paid off.



As for strength, the bolted together frame easily supports my weight. At this point it was time to set the frame on the leg assemblies. Added are bed slat supports that are glued to the frame sides, and 2 longitudinal beams made from 1 inch oak sitting on the top leg rails. The leg assemblies are located 12 inches from each end to support the main weight of two sleeping adults. I did not connect the head or tail sections of the longitudinal support rails for easier knock down and set up, however the ends do sit under the bed slat supports acting as cantilevered counter support.



I liked the styling of the head board seen in the picture on the first page, but wanted to personalize it with a Kumiko *asa-no-ha* hemp leaf inlay. Instead of jumping right into making the headboard I spent a week reading and learning Kumiko cutting, sizing, and assembly. This became an enjoyable activity and after a half dozen practice pieces, successfully made two inlays from cherry. But what orientation to add them into the ash head boards? With advice from my main customer, Jane, wife of 50 years+, she really liked the leaf pattern turned 90°. To connect the 2 sides I chose to draw a bow, free hand, which also follows the head board curve.



The head board is made with 1" thick cherry. Assembly is all mortise and tenon with the ash panels set in dados in the top and bottom rail. An 11° angle was set on the headboard from the riser board between the bed rail and headboard. The riser board is set in place with glue and screws; mortises on the riser board were used to locate the tenon's on the bottom of the headboard.

The headboard is supported in back by 4 vertical pieces located on the bed frame rail with 5/16-18 hex head bolts fastened into threaded inserts. This was another precision layout to be executed for a knockdown assembly. After a layout of where to locate the support boards, they were attached to the headboard using pocket hole joinery. Next, the layout for the position of the threaded inserts. Using a modified hex head bolt with a center point ground as close as possible; a trial and error process with scrap pieces, an acceptable centering tool was made. Setting the headboard in place and a light tap on the bolt provided the correct location to drill and place the inserts.



With the headboard assembled and attached, all that was needed was a finish sand, note messy glue spill on bed side and riser board. Final finish is first coat of boiled linseed oil to bring out wood and grain pattern; 3 coats of clear shellac (why just do one when 3 is just a little more time); and finally several coats of furniture wax, rubbed out with white non-woven abrasive pads.

