

pulling everything apart and putting it back together again, especially just before the actual pour to cook out all the moisture.

I poured the bearing caps and then put in some hard work cleaning up the bedplate to ready it for primer. I cleaned and sanded the crosshead slide surfaces, removing most of the pits, and I cleaned out or chased all the threaded holes in the bedplate with a tap. I also made new studs for mounting the crosshead top rails. Then I applied a couple of primer coats to the bedplate.

With the bedplate mostly completed, I wanted to get it mounted on the skid. The skid is made out of 8-inch by 8-inch lumber 11 feet long. The cross bunks were also made from 8-inch by 8-inch lumber, but the top rails were made from 6-inch by 6-inch lumber. Making the skid was a lot of work, but when I was all done and saw the engine mounted on it, it was worth the effort. It is very handy to have the bedplate mounted on the skid because it raises the engine up to where I can work on it.

Cracking Issues

The cast iron cylinder water jacket had a crack on the bottom side running the entire length of the jacket. I cleaned the water jacket up, and using an angle grinder I cut a "V" into the crack on both the inside and outside. With the water jacket ready to weld, I brought the crack together by strapping it tight and then tacked it with Ni-rod using a DC welder. I left the straps on during most of the welding process just to help keep some of the pressure off the new weld. I welded about a half-inch at a time skipping around from the inside to the outside, stopping when I couldn't put my hand on the welded area. Then I peened the weld for a few minutes to help relieve the stress in the weld. This process took about four days to complete. The weld came out really nice and very strong. Next, I ran a pipe tap through the inlet and outlet holes to clean the threads up, followed by a couple of primer coats.

With some of the major jobs completed I started work on the valve chests. Both were in pretty bad shape, with the exhaust-valve chest the worst of the two. The valves were stuck in both valve chests, so I soaked them in penetrating oil while I did the other restoration work. On the intake-valve chest I cut the valve stem off flush with the valve guide and housing. Then, I put it in my press and started to press the valve out. Not wanting to break things I applied heat with the torch, and



The Swan's bedplate and main bearing caps are fitted and ready for rebabbitting.

after repeatedly heating and cooling the valve stem it finally started to move. I pushed the intake valve out the rest of the way and then got my first look at the intake valve seat: What a mess! The exhaust valve was a little tougher to remove, and I used the same process of heating, letting it cool and trying to press it out. I even let it sit for days with pressure on it, but I just couldn't get the exhaust valve stem to move. I didn't want to break the exhaust valve-chest housing, so I wound up drilling the valve stem out. Needless to say, the exhaust-valve seat was in bad shape.

I made new valves and guides, plus I had the seats in both valve chests re-cut. I didn't have tooling and a mill big enough to re-cut the seat, so I took the valve chests over to my friend Dave Johnson's shop. With his vertical Bridgeport mill this was an easy task for Dave.

Next issue: The restoration continues, and the Swan runs again for the first time in over 50 years. Contact engine enthusiast Craig Prucha at: 6810 Ellicott St. Road, Pavilion, NY 14525; e-mail: cprucha@antique-engine.com



The Swan starts coming together for a trial fit of the crankshaft with the newly babbitted main bearings.