

Converting Berdan primed brass to use Boxer primers.

By: M. Chandler

Berdan primed brass from Europe and Asia is difficult to deprime and reload. Here is a procedure for converting the brass to accept Boxer primers common to American reloaders. This project is done using 7.5 x 55 Swiss cartridges for the K-31 rifle, that take a standard .308" bullet. The integral anvil must be removed and a center flash hole drilled. A 5C collet fixture is handy for holding the brass, or a homemade clamping fixture should not be difficult to make.



You can't easily drill this anvil out as the drill will run off and damage the wall. You could locate the fixture under the spindle and plunge an end mill to cut it. I simply made a .214" dia. cutter from a gage pin that would cut on the end only. Easy to do with a Dremal tool. Two negative rake (for brass) cutting edges just like a drill and relieved behind the cutting edge. The smooth outside wall will not cut and the edge being flat doesn't push off center.



As you can see, the tool cut the anvil out nicely without more than burnishing the pocket wall.



Then you need to make a center mark on the flat bottom of the pocket for the small thru flash hole. A regular #3 drill will do fine if you are careful to bring it down without hitting the sides hard.



Then a .076 drill was run all the way through and deburred on both sides.



If you run these through your reloading equipment make sure the hole is big enough for your depriming rod. Notice the two flash holes from the Berdan primed pocket are off center. I'd simply ignore them. The pocket should be plenty strong. So we have a primer pocket ready for a Boxer primer but it is still too big at about .216" dia. as the .210" Boxer primer would just fall out. We could solder or thread or glue a sleeve in, but why not just squash the edge in? We call that swaging or cold forming. A ball bearing will push a ridge in and down.



You must support the web of the cartridge from inside. If you have a very rigid work bench you could drive the ball with a hammer, or you could use an arbor press or a hydraulic press. I decided just to give a try. It did not move quite enough metal so I put a c-clamp over the outside and that gave me enough pressure. I didn't photograph using the C-clamp.



I marked the brass with a felt tip so you could see the shiny area where the metal was moved. This will be a ridge smaller than the diameter needed.



We need a rather exact fit to press a primer in. I ran a .209 gage pin into the pocket to counter swag the hole. Just to make sure I also ran a .209 reamer in too. It accepted a Boxer primer with a good fit.



Obviously the primer is held by a ridge rather than a straight wall. That made me concerned it might loosen after a single shot. So to test I transferred a powder charge from a commercial round to the GP11 brass and loaded a 180 grain Speer flat nose bullet. The volume of the Swiss brass is less than commercial brass. That combined with the heavier bullet should make sure the pressure was at least as much as the military surplus ammo. After firing the primer was tight and did not push out easily by hand with a pin.



As with any handloading operation, this is only a general outline. You are responsible for your own safety to qualify every component and measure as every combination of brass, powder, and propellant is unique and potentially hazardous. Experimental modifications like this are not something I'd recommend unless you are well experienced and knowledgeable in all the aspects of hand loading. Consider doing a similar program entirely at your own risk As they say, "Your mileage may vary." How many times a piece of brass can be loaded after this work at standard pressures I have no idea, nor have I tried this sort of modification in other calibers. I intend to use the brass for light loads so I may never collect that data.