Using Gun Bluing to Obtain Fingerprints on Cartridge Casings

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An interesting application in the field of latent print processing has been discovered . It is the use of gun bluing on the fired cartridge casings in an attempt to obtain fingerprints linking the suspect to the casing.

I have tried this method several times with mixed results. In the laboratory setting, I have placed my fingerprints on fired cartridge casings and then dipped them into the gun bluing. Within several seconds, latent print ridge details begin to appear. Being very careful to rinse the bluing off at the desired degree of development is critical, waiting too long results in the whole casing turning almost black. As soon as you observe the detail you should rinse off the casing. If you acted too quickly, you can re-apply the bluing again and rinse as soon as the desired degree of development is obtained.

I have also gone out into the field and prior to loading my guns, placed my prints on the cartridge cases and loaded the weapons. I then fired both guns and recovered the cartridge casings. Back at the lab, I processed them with the gun bluing. Observation under magnification revealed some partial ridge detail on several of the casings. None of them yielded sufficient ridge detail to make an identification. This does not mean that one should not attempt to use this method. It works better than the old "shake and bake" method of putting the casings in a bag with some black powder and shaking it up. Since we seem to be dealing with etched prints, the Minutiae article states that using super glue does seem to make the latent prints develop better.

The method described in the Minutiae article does not caution the user on using tweezers or forceps that are a non-reactive material such as plastic. The use of non-reactive tweezers or forceps in necessary because the bluing could react with not only the cartridge casing but with the tool itself. If metal forceps are to be used, I would suggest that you first dip the ends in one of these plastic coating mediums sold in hardware stores to re-coat tool handles. This will deposit a non-reactive layer between the grasping tool and the casing.

While I have stated that the results are mixed, there are results. These results are more that I have gotten in years of using the other methods in attempting to develop latent prints on casings. The odds are that if you do this enough, you will get lucky and develop a latent that leads to the solution of that one BIG case.

One other item of caution should be mentioned here. In speaking with the firearms examiners with my department, they cautioned me that due to the acid possibly etching the metal and altering any identifying marks, especially on the base and primer that, the casing should never be placed into the bluing base first, always neck first and avoid any bluing from getting on the base or primer as this could destroy firing pin, ejector or extractor marks needed to effect an identification of the casing to the weapon.

As with any new method, practice on test casings until you are comfortable with the method before using it on any real evidence. Wear hand and eye protection and an apron or lab smock is a good idea since this is an acid. ■

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