

Identification of Toolmarks From a Priming Tool in Reloaded Ammunition

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Several firearms and reloaded ammunition, cal. 308 Win., were stolen in connection with a burglary. A suspect was later arrested, and the police found one reloaded cartridge, cal. 308 Win., in his car. The cartridge from the suspect's car, the houseowner's priming tool (Lee Auto Prime), and four cal. 308 Win. reloaded cartridges (loaded by the houseowner with the Lee Auto Prime), were sent to our laboratory for examination. Fig. # 1 shows the Lee Auto Prime which was examined.

The function of the primer punch is that when the handle on the priming tool is squeezed, the primer punch inside moves forward and presses the primer into the primer pocket in the bottom of the cartridge case. This primer punch is a cylindrical steel bolt, and the end that is in contact with the primers in this case has a diameter of 5.3 mm (.2"). Both the primer punch and the shell holder, who keep the cartridge case in place, can be replaced to fit other calibres. Fig. # 2 shows the disassembled priming tool.

When examining the cartridge found in the suspect's car and the the houseowner's cartridges, it was possible to see that they had similar parallel marks in the primers even with the naked eye. This was confirmed in the comparison microscope, and it was easy to conclude that the marks on the primers corresponded. Fig. # 3 shows the comparison.

To check the results, a mikrosil cast was made of the head of the primer punch (fig. # 4). The cast was compared with the cartridge from the suspect's car, and the number of matching marks were found (fig. # 5).

As this kind of toolmarks are seldom reported in the forensic science literature, I contacted the manufacturer - The Precision Inc., 4275 Highway U, Hartford, Wisconsin 53027. On question about the finishing process on the primer punch head, I received this reply:

"The final finishing operation on the primer punch for the Auto Prime is on a grinding machine with a straight cup, 46 grit grinding wheel".

This reply confirms that the marks must be unique on each priming punch.

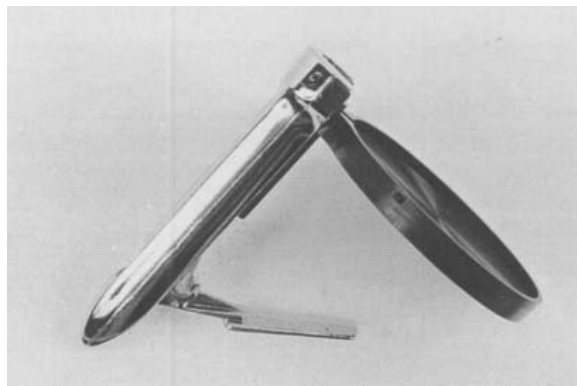


Figure 1: The Lee Auto Primer. The primers are placed in the tray and kept in place with a cover. The empty cartridge case is placed on top in a shellholder. By squeezing the handle, the primer is pressed into the primer pocket. The scale is metric.

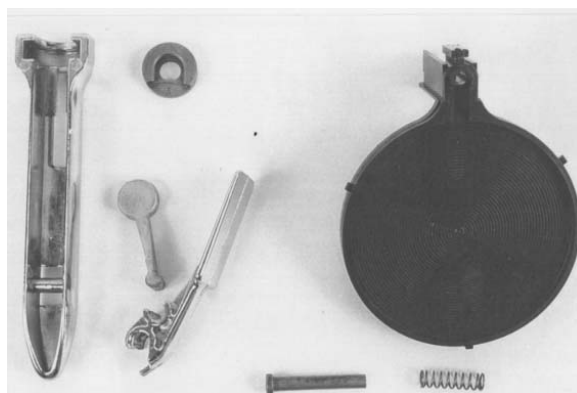


Figure 2: The disassembled priming tool without the cover which keeps the primers in place on the tray. The shellholder is on the upper left side, and the primer punch in the bottom middle of the figure. The thinnest part of it is in contact with the primers.



Figure 3: Some of the matching marks on the primers from the cartridge found in the suspect's car (left side) and one of the reloaded cartridges from the houseowner.

The work with this case has been done under supervision of Senior Police Specialist Leif Oren, AFTE regular member # 1176.

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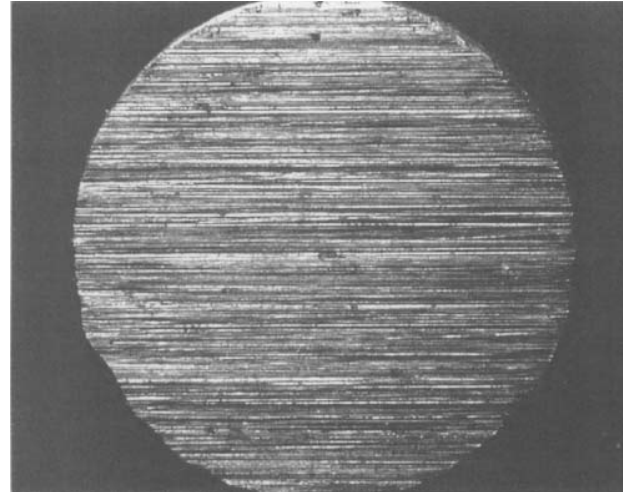


Figure 4: The surface of the head of the primer punch (diameter .2").



Figure 5: The matching marks between the cartridge from the suspect's car (left side) and the mikrosil cast from the primer punch head.