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The risks of firing cartridges with a worn out P-64 pistol

Summary

The article shows the risk to the shooting person and bystanders resulting from the worn out weapon components. The case study refers to taking the uncontrolled large number of shots using a P-64 pistol caused by its worn components. The reason for this occurrence was the lack of adequate supervision over the number of shots taken and the lack of periodic weapon service in order to assess its technical condition.

Keywords pistol, shooting, exploited weapon, injuries

During statutory shooting with the P-64 pistol cal. 9 mm at the shooting range in Radom, two people were injured. Both shot people were on the firing line. The left hand of the shooter of the P-64 pistol was injured. The second person, who had gunshot injury to the chest, was standing on the left side of the one who fired shots from the P-64 pistol. It turned out that during the reloading of P-64 pistol, the series of shots were fired. The P-64 pistol and the ammunition which were used during firing (9 mm Makarov cartridges) were subjected to the relevant forensic examination to determine the cause of the weapon malfunction.

Figure 1 presents partially disassembled P-64 pistol cal. 9 mm (see Polish version). The first step of the examination was disconnection of the breech. After setting the safety lever to the "ENGAGED" position (Fig. 2; see Polish version) and after pressing the end of the firing pin with a cleaning rod (standard for the P-64 pistol), the firing pin goes deeper into the firing pin sleeve and after hollowing out about two millimetres, it starts to rotate anticlockwise (viewed from the trigger side) around its own axis by 90 degrees.

After removing the cleaning rod, the firing pin remains in the above-described wrong position in the firing pin sleeve (rotated by 90°) (Fig. 4 The bottom side view of the tested pistol breech with its firing pin rotated by 90 degrees [safety lever in the "ENGAGED" position]. The crescent, visible on the edge of the bolt fixing the firing pin [indicated by the arrow], shows its wear from intensive use.; see Polish version). The end of the firing pin does not protrude over the face of the breech.

Setting the safety lever to the "DISENGAGED" position (Fig. 3 P-64 pistol breech [safety lever the

"DISENGAGED" position]; see Polish version) enables free movement of the firing pin by pressing its end, but there is no possibility of its rotation around its axis by 90 degrees.

An improper positioning of the firing pin prevents the full shift of safety lever to the "DISENGAGED" position. The lever can be moved up to about 30 degrees (the angle is measured between the lower edge of the lever and the bottom edge of the breech). This is the intermediate position between the "ENGAGED" and "DISENGAGED" positions (Fig. 5 View of the breech from the bottom of the tested P-64 pistol with the firing pin rotated by 90 degrees [safety lever in the farthest possible intermediate position between: "ENGAGED" and "DISENGAGED"]; see Polish version). When the lever is in such a position, the tip of the firing pin protrudes 4 mm above the breech face. The axial resistance of the firing pin, which protrudes from the breech face, is about 25 N. A higher amount of force applied axially to the tip of the firing pin causes pressing it deep into the pin sleeve. An incorrect position of the firing pin in the pin sleeve does not interfere with connecting the breech to the frame of the weapon.

The comparison of figures 4 and 5 shows that the adjustment of the position of the safety lever from the "ENGAGED" towards the "DISENGAGED" position causes shifting of the firing pin forwards. The end of the firing pin protrudes at most 4 mm above the breech face (Fig. 7 View of the breech face of the tested P-64 pistol with the protruding end of the firing pin rotated by 90 degrees [the safety lever in the farthest possible intermediate position between: "ENGAGED" and "DISENGAGED"]; see Polish version). During the

rotation of safety lever, the firing pin is blocked by the body of the safety switch. Figure 6 presents view of the safety lever of the tested P-64 pistol with the firing pin rotated by 90 degrees (the safety lever in the same position as in Fig. 5; see Polish version). Figure 8 presents side view of the firing pin of the tested P-64 pistol (the arrows indicate the worn-out edges of the bolt; see Polish version).

During the next step of the examination, it was checked whether it is possible to rotate the firing pin of the tested pistol when the weapon is assembled. It occurred that in the situation when the breech stops in the rear position (after firing all the cartridges contained in the magazine), the pressure applied to the tip of the firing pin causes that it penetrates the pin sleeve and rotates by 90 degrees (after it penetrated the pin sleeve by at least 2 mm).

Subsequently, the performance of the firing pins of six other P-64 pistols were examined. In none of them, while the safety lever was in the "ENGAGED" position, was there the possibility of axial displacement or 90 degrees rotation of the firing pin in the pin sleeve.

Then the firing pin of the tested P-64 pistol was placed successively into each of the six above-mentioned pistols. It turned out that the axial displacement and 90 degrees rotation was not possible in the these pistols (with the safety lever in the "ENGAGED" position).

The comparison of the breech of the tested pistol with the breeches of the other six P-64 pistols showed serious wear of the pin sleeve in the safety switch and the breech of the tested pistol as well as severe wear of the firing pin in the tested pistol resulting in a rounded, worn edge of the bolt working with the safety switch.

In the next stage, three 9 mm Makarov cartridges of Russian, Polish and Czech production were fired from

the examined pistol (with the firing pin rotated by 90 degrees). The tests showed that only the cartridges of Russian production fired. by a single pull of the trigger. The cartridges of Polish and Czech production did not ignite because the harder material of their primers resulted in pressing the tip of firing pin deep into the firing pin sleeve. These shooting tests proved that only the cartridges with primers made of soft material, e.g. the Russian ones, can be fired from the examined pistol (with the firing pin rotated by 90 degrees)

The above studies show that the presented case of gunshot injuries of two people was caused by the poor technical condition of the P-64 pistol and using ammunition with soft primers. Weapons of such poor condition should be withdrawn from service. The poor technical condition of the tested pistol should have been diagnosed during a periodic weapon check or service. It should also be noted that if in the course of shooting, ammunition of other production than Russian was used, for example, cartridges of Polish or Czech production, there would be no case of firing shots in a "series".

The P-64 pistols cal. 9 mm that are still by some of the Polish uniformed services, in prisons for example, are severely worn-out and there is no strict supervision over their technical condition, mainly over the number of fired shots, therefore one could expect further incidences of uncontrolled shots in a "series".

Source

Figures 1–8: author

Translation *Ronald Scott Henderson*