

CASE REPORT

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Planned Complex Suicide by Self-Poisoning and a Manipulated Blank Revolver: Remarkable Findings Due to Multiple Gunshot Wounds and Self-Made Wooden Projectiles*

ABSTRACT: A remarkable case of complex suicide with poisoning and multiple self-inflicted gunshot wounds to the head is reported. After ingestion of a liquid insecticide, the victim shot himself twice in the head, once in each temple. Self-manufactured wooden dowels were used as projectiles in combination with conventional blank cartridges. The dowels had been glued on top of the blank cartridges and expelled by propellant gases. Moreover, the blank revolver used had been extensively manipulated in a rarely observed manner. Several occlusive devices had been removed from the barrel and the cylinder chamber to enable the expulsion of the wooden projectiles. The investigation of the methods used and the circumstances found at the scene pointed towards a planned complex suicide. A remarkable case with unusual projectiles, i.e., wooden dowels, fired by an extensively manipulated blank gun is reported, emphasizing the importance of close collaboration between the police firearm laboratory and forensic pathology in practical casework.

KEYWORDS: forensic science, complex suicide, gunshot wounds, manipulated blank gun

The term “planned complex suicide” (PCS) refers to a special kind of suicide combining several methods to ensure the fatal outcome. The main difference between planned complex suicide and combined suicide lies in the complex combination used by the victim to protect against a failure of one of the methods (1). Various kinds of PCS, many of them involving self-inflicted gunshot wounds, preferentially to the head (2–5), have already been provided as case reports.

In many European countries restrictive weapon laws exist. As a result, blank guns are used relatively often in suicidal attempts and various criminal offenses. Despite several mandatory safety mechanisms, prescribed by weapon laws, such blank guns can cause serious and life threatening injuries solely due to the expelling propellant gases (6). Most blank guns used in suicides are usually manipulated in such a way that additional parts are added and original parts (in the majority of the cases, the barrel) are replaced, enabling the expulsion of a projectile through the barrel (7). In rare cases, manipulations have been described in which the safety mechanisms have been removed mechanically from blank guns, which is usually a labor-intensive and difficult procedure (7).

Interestingly, several cases have been published reporting the utilization of peculiar foreign bodies as projectiles, mostly consisting of metal bodies (7,8).

This remarkable case of planned complex suicide with poisoning and multiple self-inflicted gunshot wounds to the head using wooden dowel projectiles is reported because of its unique findings and possible misinterpretation.

Case Report

The decedent was a 77-year-old widower, who lived alone in his flat in a small town in North-Rhine-Westphalia. As he had not shown up for breakfast as usual at his relatives who lived close by, his niece decided to look for him.

He was found dead, sitting in a chair beside the table in his kitchen in an upright position, the upper part of his body was sunken slightly to the left. His left arm was lying on the chair's armrest and on the armrest of a sofa adjacent to the chair (Fig. 1). The decedent's head was leaned slightly forward, showing two gunshot wounds, one in the right and one in the left temple. Both gunshot wounds showed perpendicular blood streaks in a downward direction. On the left temple, two singular blood streaks reaching the left auricle were noticed. Bloodstains were found on the carpet between the chair and the sofa on the decedent's left side.

A blank revolver (Reck-Cobra, cal. .380 Knall, double action) was found lying loosely in his left hand; there were two expended shells (cal .380) in the cylinder; furthermore, four unexpended blank cartridges, the first of them with a wooden dowel (5 mm in

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FIG. 1—Situation of the decedent at the scene. Note revolver lying loosely in decedent's left hand; a bottle of insecticide and two glasses on the kitchen table.

diameter, 15 mm in length) glued on the top of the cartridge (Fig. 2).

According to the police investigation, a bottle of insecticide was found (Blattlanex®, agent: Propoxur®; Bayer AG, Leverkusen, Germany) on the kitchen table. Furthermore, two glasses were noticed on the table, one of them containing remnants of a malodorous turbid liquid (Fig. 1). The other glass contained a white powder, which had not dissolved completely in water. The powder was identified as oxalic acid, which was also found in a small box on the table, labeled "Danger—Poison Oxalic Acid." A farewell letter and the decedent's will were found in a briefcase visibly placed on a table in the living room. His flat showed no signs of violence.

According to his general practitioner, the decedent had a medical history of gastric ulcer disease and hypertension. He had suffered a transient cerebrovascular attack without any sequelae two years earlier and had an implanted cardiac pacemaker. He had also undergone prostate surgery, which had left him with urinary incontinence, forcing him to wear nappies.

Due to previous depressive episodes, the general practitioner had repeatedly prescribed benzodiazepine-preparations for him during the preceding months.

A niece had taken care of him over the last few months. However, she had told him that she suffered from cancer and would, therefore, not be able to care for him any longer. He had refused to be taken to an old people's home, and had announced several times previously, that he would "find a different solution" for his problems. Nobody had known about the revolver, owned legally by the man. Moreover, none of the neighbors in the house had been aware of any gunshots or unusual noise in the preceding hours.

External examination showed a close-range circular gunshot entrance wound of 7 mm diameter in the right temple, 2.5 cm above the eyebrow, 12 cm lateral from the midline. The hole was surrounded by a 4 cm (vertical) and 2 cm (horizontal) area of dried dark blood and soot. The upper part of this area was surrounded by grayish-metallic discoloration of the adjacent skin, involving the

temporal hairline. Blood streaks were noticed in a perpendicular direction towards the mandible.

On the left temple, another close-range gunshot wound was found 3 cm in front of the auricle, 1.5 cm above the auricle's upper margin. The entrance hole was in the center of a 3 × 4 cm area of superficial burned skin and scorched hair, partially dried blood and soot deposits. Soot was also noticed on the bone surface around the hole. The adjacent skin towards the eyelid showed grayish-metallic discoloration. A perpendicular blood streak was noticed down to the mandible, two further blood streaks were directed at a 45° angle to the first bloodstain, both reaching the auricle's posterior margin (Fig. 3).

The path of the projectile from the right gunshot wound included the right temporal bone and the anterior portion of the right frontal lobe. On the left side, a second wooden dowel was noted in a hemorrhagic bullet track in the posterior portion of the left frontoparietal region of the brain. The livor was limited in extent and intensity.

Due to the results from external forensic examination of the subject and the comprehensive investigations conducted by the police firearm laboratory, the district public prosecution authority decided not to call for a medico-legal autopsy. As a result, no further toxicological investigations were performed.

Wooden Dowels as Projectiles

In this case, conventional blank cartridges (RWS 9 mm × 17, cal .380; Dynamit-Nobel, Troisdorf, Germany)—the regular ammunition for this kind of blank revolver—were used. The decedent had fixed wooden dowels on top of these cartridges with a brownish tenacious substance, most probably a synthetic resin compound.

One of these modified cartridges was found in the revolver, together with two already expended cartridge shells (Fig. 2) and furthermore four unexpended nonmanipulated blank cartridges.

Results from Investigations on the Blank Revolver

The blank revolver (Reck-Cobra, cal. .380 Knall, double action) used in this case, can be legally purchased in Germany by persons aged 18 years or older. The German weapon law governing certification of firearms and their mandatory registration does not apply to blank cartridge guns which have been approved by the German physical-technical federal agency in Braunschweig ("Physikalisch-technische Bundesanstalt," abbreviated "PTB") according to their original design certification. According to the original approval license from the German physical-technical federal agency, the cross-sectional diagram of the revolver shows the required safety mechanisms, ensuring that no projectiles can be fired (Fig. 4).

According to these legal prescriptions, the barrel contains a partially occluding pin in the proximity of the muzzle, and a longitudinal barrier is attached in the barrel. Both occluding parts are soldered within the barrel.

In the cylinder, the diameters of the chambers were originally narrowed by such an occlusion, so that the final diameter of each cylinder chamber was smaller than the caliber loaded (Fig. 4).

The barrel and two cylinder chambers were opened with a mill-cutter in the firearm laboratory for further investigation. It was observed that all safety devices had been totally removed. Inside the barrel traces of mill cutting were noticed in proximity to the muzzle, where the partially occluding pin had once been (Fig. 5), as well as along the length of the barrel, corresponding to the longitudinal barrier. Similarly, the cylinder chambers had also been



FIG. 2—Ammunition used in the presented case. Blank cartridges 17 mm × 9, cal. .380. Left: blank cartridge, middle: a wooden dowel had been glued on top the otherwise nonmanipulated cartridge, right: expended manipulated cartridge found in the cylinder. Self-constructed ammunition: wooden dowel glued on top a conventional cal. .380 blank cartridge. Note traces of adhesive substance, most probably a synthetic resin compound on the dowel.



FIG. 3—*Close range gunshot wound of the left temple.*

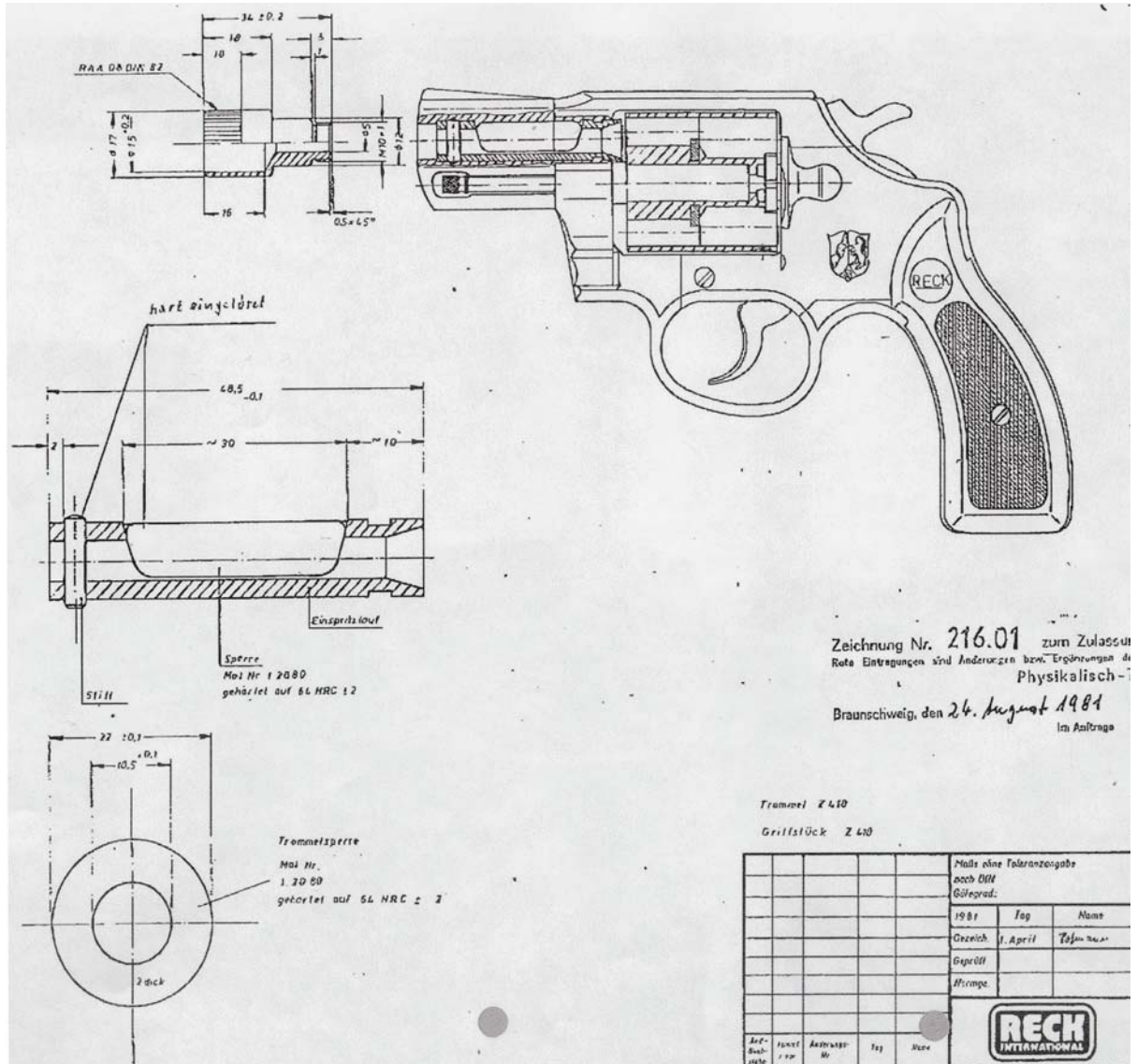


FIG. 4—Original diagram from the German physical-technical federal agency (PTB) in cross-section, giving approval of the revolver Reck-Cobra, cal. .380 Knall, double action. Notice the security devices (double barrel occlusion, narrowing of diameter in cylinder chambers) as prescribed by German weapon law. (This figure was provided by Umarex Ltd., Arnsberg, Germany.)



FIG. 5—Manipulated barrel showing fine longitudinal traces of mill cutting in proximity to the muzzle (detailed view). Note thread for insertion of adapter devices for the use of signal ammunition.

reamed open (Fig. 6). Convex shaped traces of mill cutting were observed in the cylinder chambers, enlarging the diameter of the chamber's entire length to that of the loaded caliber (Fig. 6). Due to these modifications the final diameter of the barrel, as well as the cylinder chambers, was determined at 7.8 mm. It was concluded that the decedent had broken off a part of the frame, which covered a pin, after whose removal he could separate the barrel from the frame and carry out the above-mentioned manipulations. Following this, the revolver was reassembled.

According to the firearm laboratory investigator, such kinds of manipulations are observed extremely rarely in blank guns, mostly due to the fact that they seem to be very labor extensive.

Discussion

We present a case of planned complex suicide (PCS) involving ingestion of insecticide and the infliction of multiple gunshot wounds to the head with remarkable wooden projectiles using an extensively manipulated blank gun.

In the presented case, the force exerted by the propellant gases was used to propel the wooden dowels out of the barrel. Moreover, the remaining unexpended self-made bullet was helpful to explain the mode of administration of the wooden dowels.

Particularly in countries with restrictive weapon laws, blank guns, air guns or other devices manipulated to fire projectiles are commonly used in such suicidal attempts (7). The most frequently described manipulations in blank guns refer to the exchange of genuine parts (e.g., barrel) (7). In other cases, blank cartridges are altered by adding self-constructed projectiles, usually of metallic origin (8). However, the entire removal of various security devices regularly prescribed by weapon laws (e.g., barrel occlusion, cylinder chamber constriction) has only rarely been reported (7).

In the past, many authors have drawn attention to the hazards of modified or nonmodified blank guns used in suicidal or homicidal attempts. Even when used with blank or tear gas cartridges these weapons can cause devastating effects, due to the gas pressure from the exploding blank ammunition propellant ("gas projectile"). Moreover, contrary to their primary intention, these weapons can still be manipulated in such a way that a projectile can be expelled from the muzzle or even through the barrel. Several authors report on cases where original, i.e., nonmanipulated blank weapons were used. The effect of the exploding blank ammunition propellant alone ("gas projectile") was strong enough to cause lethal effects (9). As a result, various modifications have been made by manufacturers in different parts of blank guns to prevent such alterations (10).

A fatality presenting with several unique and unusual findings, thus giving rise to the risk of misinterpretation, could be unequivocally determined to be a rare case of planned complex suicide. The ingestion of poison was combined with infliction of multiple gunshot wounds to the head with an oddly manipulated blank gun and unusual self-made wooden projectiles.

In addition, the presented case demonstrates the importance of close collaboration between the police firearm laboratory and forensic pathology in practical casework.

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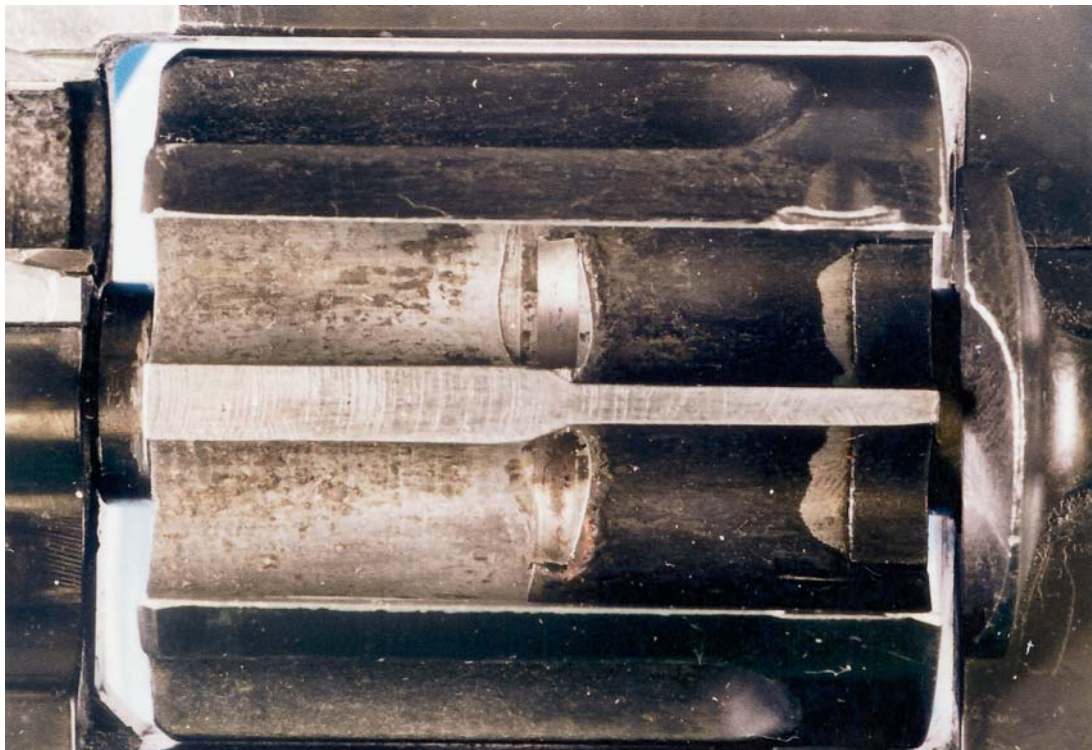


FIG. 6—Traces of manipulation in the bored cylinder chambers; convex traces of mill-cutting widening the diameter of the manipulated cylinder chambers (left side towards barrel, right side towards hammer).

References

1. Marcinkowski T, Pukacka-Sokolowska L, Wojciechowski T. Planned complex suicide. *J Forensic Sci* 1974;3:95–100.
2. Blanco-Pampin JM, Suárez-Peñaranda JM, Rico-Boquete R, Concheiro-Carro L. Planned complex suicide. An unusual suicide by hanging and gunshot. *Am J Forensic Med Pathol* 1997;18:104–6.
3. Cingolani M, Tsakri D. Planned complex suicide: report of three cases. *Am J Forensic Med Pathol* 2000;21:255–60.
4. Murphy GK. Suicide by gunshot while driving a motor vehicle. Two additional cases. *Am J Forensic Med Pathol* 1997;18:295–8.
5. Pollak S. Statistik und Phänomenologie kombinierter Selbsttötungen und anderer suizidaler Mehrfachbeschädigungen im urbanen Bereich (II). *Arch Kriminol* 1978;161:68–81.
6. Rothschild MA, Maxeiner H, Schneider V. Cases of death caused by gas or warning firearms. *Med Law* 1994;13:511–8.
7. Rothschild MA, Geserick O, Horn W, Schneider V. Todesfälle durch umgebaute Schreckschusswaffen. *Rechtsmedizin* 1998;8:77–82.
8. Rabl W, Riepert T, Steinlechner M. Metal pins fired from unmodified blank cartridge guns and very small calibre weapons-technical and wound ballistic aspects. *Int J Legal Med* 1998;111:219–23.
9. Rothschild MA, Karger B, Strauch H, Joachim H. Fatal wounds to the thorax caused by gunshots from blank cartridges. *Int J Legal Med* 1998;111:78–81.
10. Rothschild MA. Freiverkäufliche Schreckschusswaffen: Medizinische, rechtliche und kriminaltechnische Bewertung. Schmidt-Römhild Verlag Lübeck 1999.

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