

Letter of the editor / Brief an den Herausgeber

Annotations to: “The effect of the THV bullet in animal tissue” by Peter J. T. Knudsen*

Martin L. Fackler

Wound Ballistics Laboratory, Letterman Army Institute of Research,
Presidio of San Francisco, CA 94129, USA

In his article “The effect of the THV bullet in animal tissue” [1], Knudsen reports that none of the entry wounds caused by the THV bullets he tested caused the star-shaped appearance illustrated in my *International Defense Review* article [2]. *The striking velocity of the 38 Special THV that caused the star-shaped entrance wound was 752 m/s. This about 180 m/s higher than the velocities reported by Knudsen.* The headstamp on the THV cartridge case used for this shot was “.38 SP P+ SFM,” and the lot of number was DL-18 = A. It was fired from a Ruger revolver with a 4-in. barrel. This ammunition was obtained in 1984.

According to multiple reliable sources, the early SFM THV ammunition in 38 Special caliber developed chamber pressures that were considerably in excess of USA industry standards. Evidently SFM has lowered the pressure and velocity for this round, and Knudsen tested the more recent ammunition. Bullet manufacturers commonly change the construction and/or velocity of their product without notification. To insure reliable bullet performance, the serious consumer has no recourse but to test the product for himself [3].

Dr. Knudsen’s stated reason for studying the THV was to find a round for the Danish Police Force that would produce increased stopping power. He apparently believes that the amount of kinetic energy a bullet transfers to the body is a reliable measure of its “stopping power.” I suggest that before using this reasoning to make an ammunition choice he (and the Danish Police) read the proceedings of the Wound Ballistics Workshop held 15–17 September, 1987, at the Firearms Training Unit of the FBI Academy, Quantico, VA 22135

The postulate that kinetic energy deposit measures “stopping power,” although convenient for the bullet manufacturer (it is easy to believe what you want to believe), is basically irrational [4, 5]. How will stretching the most superficial tissues (skin and the fat and/or muscle just beneath it), as is done by the temporary cavity of the THV, insure “stopping power” while *the more deeply* placed vital structures are left undisturbed?

* Z Rechtsmed (1989) 102:353

References

1. Knudsen PJT (1988) The effect of the THV bullet in animal tissue. *Z Rechtsmed* 101:219–227
2. Fackler ML (1987) Bullet performance misconceptions. *Int Def Rev* 3:369–370
3. Fackler ML (1988) Handgun bullet performance. *Int Def Rev* 5:555–557
4. Fackler ML (1987) What's wrong with the wound ballistics literature, and why. Institute Report No. 239. Letterman Army Institute of Research, Presidio of San Francisco, CA
5. Fackler ML (1988) Wound ballistics: A review of common misconceptions. *JAMA* 259:2730–2736

Received January 20, 1989

Author's Comment

Peter J. T. Knudsen**

Defence Medical Training Centre. Jægersborg Barracks, DK-2820 Gentofte, Denmark

I am glad to be able to answer Dr. Fackler, for while we may actually not disagree in principle, I may have sacrificed some clarity for brevity.

1. I am pleased to learn that there is indeed a good reason for the difference in appearance of the .38 entry wound shown by Dr. Fackler [1] and the one described by myself [2]. Since Dr. Fackler's illustration was the only one published at that time of a THV entry wound in tissue, and since it was so very much different from my experience, I thought it fair to mention it. I am in complete agreement with Dr. Fackler about testing the product and not relying on the manufacturer's claims. That is exactly what we (the police, the defense and I) have been doing.

2. Dr. Fackler thinks that I believe that the retained kinetic energy is a reliable measure of its stopping power. Certainly not! If I did so, what would be the point in using time, effort and money to perform autopsies, when the simple measurement of entry and exit energy would suffice? I believe that having measured the energies, made a patho-anatomic evaluation of the lesions and made an admittedly rough estimate of the size of the lesion, I can come to the conclusion that the THV bullet deposits more energy and causes larger lesions than FMJ bullets of the same caliber and, penetrating deeply in the target, does give the desired increase in stopping power. As for the temporary cavity produced by the THV, except when hitting inelastic organs like the liver or spleen, I think that the contribution of the temporary cavity to stopping power is greatly over-rated [3]; since Dr. Fackler's papers have confirmed that conviction [4, 5], I do not think he will disagree.

** *Present address:* Institute of Forensic Medicine, University of Aarhus, Finsensgade 15, DK-8000 Aarhus C, Denmark

References

1. Fackler ML (1987) Bullet performance misconceptions. *Int Def Rev* 3:369–370
2. Knudsen PJT (1988) The effect of the THV bullet in animal tissue. *Z Rechtsmed* 101:219–227
3. Lindsey D (1980) The idolatry of velocity, or lies, damn lies, and ballistics. *J Trauma* 20:1068–1069
4. Fackler ML. What's wrong with the wound ballistics literature, and why. *Institute Report* No. 239. Letterman Army Institute of Research, Presidio of San Francisco, CA, July 1987
5. Fackler ML (1988) Wound Ballistics: A review of common misconceptions. *JAMA* 259:2730–2736