

BOOK REVIEW

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A Review of Ballistic Science for the Law Enforcement Officer

REFERENCE: Wilber, Charles G., *Ballistic Science for the Law Enforcement Officer*, Charles C Thomas, Springfield, Ill., 1977, 301 pages, \$23.50.

The author says, "There is rather widely spread a less than satisfactory understanding among law enforcement personnel of the basic laws of physics and principles that govern the functioning of firearms," which he attempts to improve. The book does not deal with tactical use of various arms, although a considerable part is devoted to bullet effect, wounding, "stopping power," and similar matters.

The author has extracted extensively from many sources. But it is often difficult to determine where the source leaves off and the author begins. He has extracted material that is not applicable, such as the discussion on jump, whip, and hop, which applies only to artillery, and the discussion of rocket propellants, including a lot of detailed formulas.

There is a 15-page chapter on "Dumdum Bullets," which covers the Geneva and Hague Conference outlawing expanding bullets. This might be of use to police administrators trying to convince the public that their officers should use expanding bullets.

The book has a rather extensive discussion of terminal ballistics and another section on "practical considerations" that will be of interest to the police officer.

He devotes 13 pages to the John F. Kennedy assassination, concluding that the Warren Commission was wrong. Another appendix devotes 8 pages to the firearms policies of the Fort Collins Police Department. An army document provides 43 pages on powder and its manufacture, with extensive equations for ballistic parameters, part applying only to large rocket powder grains.

I take considerable exception to some of the author's statements, for example, "Heat of the gun tends to make the metal of the barrel expand; this effect will squeeze the bore of the barrel to a small diameter, causing a tighter constriction of the barrel around the bullet." All machinists who, for years, have been using "shrink fits" in metal working will be sorry to hear they have been doing the wrong thing!

His example for the ballistic pendulum uses the wrong formula. His other examples on the same page are, although not so specified, for bullet trajectory in vacuum. He says the rim fire mixture is "rolled" into the rim of the cartridge. In another place he says, "The priming compound is pressed into the rimmed head." Actually, it is spun in with a

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high-speed, spinning punch. "The rim fire striker of the gun squeezes the primer mixture." You can squeeze a rim fire cartridge all day without getting it to fire. The rim of the shell and priming mixture must be struck a sharp, quick blow.

Rather than cover a subject completely in one place, the author has chosen to spread the information throughout the book. Thus the topic of powder, including its manufacture and use, is covered in at least three major areas, plus the elaborate appendix on the subject. This sometimes leads to differences and contradictions and makes for very difficult reference use.

As mentioned, the formula for the ballistic pendulum is badly garbled. Perhaps for this reason, in solving the example given later, he further confuses the issue by using different formulas. He defines kinetic energy in several places as $E = mv^2/2$, $E_k = 1/2mv^2$, $E = MV^2/2g$, and $E_i = Wv^2/2g$. He points out that for $g = 32$ and grains = 7000/pound the figure 448 000 is a handy constant in converting the formula to American units, which he rounds to 450 000. But later he uses 500 000 in a formula, which may not affect the arithmetic much, but it certainly is confusing. Actually, the energy figure, which he gives as 1200 ft lbs, should be 1155 using his formula and with the correct denominator should be 1288.

In addition to these errors, there are many typographical errors and other mistakes in facts, as well as places where I disagree with his opinion (which doesn't necessarily make him wrong!). There is a good list of reference material. The photos are generally only mediocre, with some being mislabeled or poorly labeled.

As you may have gathered, I'm sorry to say I don't think this is a very good book. It contains some excellent material, some of which is taken from other sources and some of which is the author's work. But I find so many mistakes, misstatements, and lack of understanding that I can not recommend it very enthusiastically.