

PROJECTILES

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USA, jpcise@austincc.edu & New York Times, Dec. 18, 2017, Dedicated to Xavier University Rifle Team. Author was on team.

Lones Wigger Jr., 'Best Ever' Rifle Marksman, Is Dead at 80

By FRANK LITSKY DEC. 18, 2017



INTRODUCTION: M-14's have a muzzle velocity of 850 m./s. or 1900 mph (from Wikipedia). Assume air friction is zero and rifle is shot horizontal.

QUESTIONS: (a) Find time (t) for bullet shot at 850 m./s. to reach target 600 m. Away? (b) Find vertical height (y in meters) bullet will drop vertically while traveling 600 m. to target. (c) Show the two equations you set up from kinematics to solve for t & y ? (d) Find vertical velocity of bullet when it hits target 600 meters away?

HINTS: $g = 9.8 \text{ m./s.}^2$, $x = v_{\text{HORIZONTAL}} t$, $y = v_{0y}t + \frac{1}{2} a t^2$, $v^2 = v_{0y}^2 + 2 a y$, Best method to solve this application is to break solution into vertical & horizontal parts. Horizontal velocity is unchanged. Vertical motion in free fall.

ANSWERS: (a) $t \sim 0.706 \text{ s.}$, (b) $y \sim 2.44 \text{ m.}$ (c) _____, _____
(d) $v \sim 6.915 \text{ m./s.}$

Lones Wigger after winning a gold medal in shooting at the 1972 Olympics in Munich.

Lones Wigger Jr., a career Army officer and two-time Olympic champion who was hailed as the most decorated rifle shooter in the world, died on Thursday at his home in Colorado Springs. He was 80. The cause was complications of pancreatic cancer, the [United States Olympic Committee](#), also known as Team USA, said. At 5 feet 7 inches and 180 pounds in his prime, with a round build and round face under a military crew cut, Wigger may not have looked the part of a sports champion, but he dominated competitive shooting for two decades. The magazine Gun Week called him "by far **the greatest shooter in history**." "I'm like a golfer," Wigger told The New York Times in 1983. "I'm like any athlete who uses his mind and has to concentrate. I train like an athlete in any sport." Wigger broke 29 world records and **appeared in three Olympics, in 1964, 1968 and 1972. He also qualified for the 1980 Games in Moscow**, which the United States boycotted in protest of the Soviet invasion of Afghanistan. Wigger also won 58 United States championships and more than 20 on the world stage. In five-Pan American Games, from 1963 to 1983, he won eight gold medals. Wigger at the 2008 ceremony in Chicago at which he was inducted into the United States Olympic Hall of Fame. He acknowledged that he was competing in a sport with a relatively small fan base, even when under the Olympic spotlight. "People don't know me outside of shooting," he said. Inside the sport, he was self-effacing. "I've never been gifted with a lot of talent," he once said. "I probably succeeded because I persevered."

Perseverance, [he told Sports Illustrated](#) in 1987, involved "constant, steady practice, week in and week out, all year long." He told The Times, "I think most anybody can be a champion in our sport if he has the desire and will put in the work." Lones (pronounced LONE-iss) started shooting at age 12 — by his account because Carter (population 300) did not have any organized sports, including Little League baseball. He attended Montana State University, where he was captain of the rifle team. There he met Mary Kay Spencer, a history major; they were married during the Christmas break of 1958. Wigger graduated in 1960 with a degree in agronomy, became an Army officer and rose to lieutenant colonel, mostly based in Fort Benning, Ga., as a riflery instructor. He had two tours of duty during the Vietnam War and taught American soldiers there marksmanship. After three weeks of training in Vietnam, he told Sports Illustrated,

(((his snipers were hitting their targets at 600 meters with the first shot from their M-14s