

# Chronicling the World's First Aerial Bomb

## An Orange, a Sandbag, a Brittle Cast Iron Pear and a Truncated Cone

By Daniel J. Demers ©2015



Lieutenant Myron Crissy, credited with designing and dropping the first aerial bomb, holds a pear-shaped bomb while pilot Phil Parmalee looks on.

THE DROPPING OF THE FIRST BOMB SPECIFICALLY DESIGNED FOR USE BY AN aircraft was, according to Lt. Myron Crissy, “impromptu.” He said he had taken the bomb to the makeshift airfield at San Bruno, California “simply to show its construction and mode of operations and to demonstrate the safety of handling” it to the assembled civilian pilots and military brass. Crissy had intended to drop the experimental explosive along with another he had designed at a later date under better controlled circumstances.

Over the course of ten days in January of 1911, approximately 300,000 people had come to the San Francisco International Air Meet. They came to see the new-fangled invention called an aeroplane. Fixed wing flight was only eight years old and the San Francisco meet was the first ever in which the US military actively participated — conducting a number of experiments to determine if aircraft would have any meaningful place in the military. One of those planned experiments was to be bomb dropping.

Crissy, of the 70th Coastal Artillery, had been assigned the task of developing suitable explosive bombs by his superiors. A year earlier, Lt. Paul Beck of the Signal Corps had been detailed to the first-ever American International Air Meet in Los Angeles. He went aloft with civilian pilot Louis Paulhan with several “small canvas money bags, packed with sand and each weighing about two pounds.” The tests proved to be inaccurate. Beck wrote, “The lack of success stimulated the desire to continue experiments and the causes for error were carefully investigated.”

Crissy took up the cause on behalf of the US military. He was joined in the effort by Marine Lt J. W. McCaskey. They determined the velocity of a dropping bomb was similar to the low velocity of artillery shells fired during the War of 1812. Beck relates that they “dug up [old] army ordnance tables published and musty with age” and studied “discussions of various shaped projectiles and the action of air currents on them when they were impelled through the air by the low powders of that day.” The information led them to develop angular tables. Beck wrote, “By starting at low altitudes and gradually increasing them, the probable errors of these tables will be eliminated and a definite working knowledge gained.”

The knowledge gleaned from these “old tomes” allowed Crissy to develop two distinctly shaped bombs. The first one dropped was a pear-shaped projectile weighed “but six or eight pounds.” Crissy designed the bomb and had it manufactured at a San Francisco iron works. Local business interests footed the bill. The body of the pear-shaped device consisted “of brittle cast iron, with two cavities — one filled with fine grained black rifle powder, a little less than a quarter of a pound, the other filled with small bullet projectiles designed to be cast in all directions by the explosion [on impact] of the powder,” wrote Crissy. On top of the pear shape, he continued, was a “short cylindrical part containing the percussion fuse.” Attached to this were “taped two thin strips of wood to insure” the bomb would strike “right end down.” Crissy explained the strips were designed to act “the same way as do the sticks on sky rockets.”

It was Crissy’s first flight. He acknowledged “the sensation was novel although similar to travel in an automobile on a good road.” It was

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“much less bumpy than” he had expected. He hadn’t expected to fly that day or to drop the bomb. It was, Crissy noted, “duly hazardous to carry aloft an explosive which, if accidentally fired prematurely, would destroy both the machine and operator in midair.” Civilian daredevil pilot Phil Parmelee, part of the Wright Brothers team, offered to take Crissy and the bomb up.

As an aside, Parmelee said he had dropped oranges, apples and other objects from his biplane. He noted that when he dropped oranges “they made a sort of spiral descent [and] they never hit the object at which they were aimed.” After Crissy dropped his bomb, Parmelee said he “tipped the machine so that we could look down between our legs and see the bomb land and explode.” It was, he said, “an accurate aim.” It fell “to earth in a straight line dropping just a trifle ahead of the machine [aircraft].” Crissy and Parmelee then “saw a big splash and then observed the hole it made. We could not hear the explosion because of the whirl of the motor.”

The bomb was dropped from a height of 550 feet and “struck exactly where we had suspected it would,” noted Parmelee. The aircraft was traveling at a speed of 45 miles an hour, the fastest it could go. Crissy visited the strike zone after landing and “dug some shrapnel out of the earth.” The bullets, he said, were “scattered in every direction” and the size of the crater “as large as an ordinary washtub and about two feet deep.” Parmelee would die seventeen months later in a crash in Yakima, Washington caused by air turbulence that flipped his plane over and threw it (and him) to the ground. He was 25.

Eight days later, Crissy continued his experiments. According to newspaper accounts, he hurled “three more projectiles to earth from altitudes varying between five and seven hundred feet.” Two of them were combination time-and-percussion aerial shrapnel bombs, also designed by Crissy. This bomb differed from the pear-shaped one. It was cylindrical with a truncated conical nose. A metal projection about eighteen inches long was attached to the head of the bomb and provided with a long thread. Beck described the guiding apparatus: “Attached to this thread is a lug held in a ring, and attached to this ring are two light metal propellers. When the shrapnel [bomb] is dropped, these propellers lie at the bottom of the grooved thread immediately at the top of the projectile.” As the bomb fell toward the earth, the circulating air started the propellers “rotating and by doing so they worked up the worm of the thread until they reach the top of the metal projections.” The velocity of the rotating propellers in turn caused the bomb itself to rotate, holding “it true to its course,” continued Beck. Crissy’s intent was for the bomb to explode before hitting the ground. The bombs had back-up percussion fuses which were designed to detonate if the timing fuse failed.

According to Army Lt. John C. Walker, Crissy’s time-and-percussion aerial shrapnel bombs were loaded with picric, “one of the highest explosives known, and very dangerous to handle.” At the time, picric was used by most of the world’s military as their high explosive material. The chemical was relatively sensitive to shock and friction, which added to Crissy’s tension in taking the projectiles aloft. After World War I, picric would be replaced by TNT and RDX.

Myron Crissy invented two bomb types exclusively for use by powered fixed winged aircraft. Beck highlighted that both proved to be “safe until dropped” and “were sufficiently light [enough] to be carried up and which fall sufficiently straight to hit the target.” More importantly, he observed, “The dropping of an explosive from an aeroplane in motion marks an epoch in military aero investigation.”

Current military histories credit Italian aviator Giulio Gavotti with dropping the first bomb in November of 1911 during the Italo-Turkish War. These bombs were essentially grenade-like devices. Bulgarian Army Captain Simeon Petrov is credited with developing “several [bomb] prototypes.” These bombs were dropped by Prodan Tarakchiev from an aircraft piloted by Radul Milkov in October of 1912, during the First Balkan War.

The reality is that the first aerial bomb prototypes were developed by the United States Army and Marine Corps. The first aerial designed bombs dropped by heavier-than-air aircraft occurred at the International Air Meet held in San Francisco (San Bruno) in January of 1911. This occurred some eight months before the Gavotti claim and some two years before the Tarakchiev-Milkov First Balkan War collaboration. Gavotti and Milkov were, however, the first to drop bombs during war.

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Below left: Giulio Gavotti in an aircraft used to drop bombs during the Italo-Turkish War in 1911; Below Right: Prodan Tarakchiev (left), who dropped bombs from an aircraft piloted by Radul Milkov (right) during the First Balkan War

