



DYNAMIC RESEARCH TECHNOLOGIES

FRANGIBLE BULLETS, DYNAMIC RESEARCH TECHNOLOGIES

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ABSTRACT

This article pertains to recent ammunition articles published in various newspapers and the Internet concerning Mr. Harold "Bubba" Beal's invention of a real world alternative to conventional leadbased ammunition, which provides supreme accuracy, velocity and terminal ballistics in comparison to other types of frangible ammunition being marketed in today's industry. Using various calibers of the frangible ammunition, which is being manufactured by the Dynamic Research Technologies (DRT), Grant City, MO, test firings were conducted at the USACIL in order to determine if the recovered jacketing from the frangible bullets were identifiable using the comparison microscope.

Recently, the authors reviewed published articles that were written in local newspapers and the Internet pertaining to manufacturing a revolutionary lead free frangible bullet in the calibers 9mm, 40 S&W, .45, .223 REM, .308 and 300 Win Mag, which were being sold to law enforcement and government agencies. The articles indicated that upon impact/penetration, the bullet core turns to powder in its original composition and there are thus minor traces of the bullet and/or its components, including any of the copperjacketing. The articles stated that Mr. Harold "Bubba" Beal invented the bullet that he nicknamed "The Bubba Bullet", which is a frangible bullet that breaks apart upon impact with a target and returns to its original powder form while still being able to deliver terminal effects on the target (Photograph # 1).

Subsequently, we contacted Mr. John Worrell, President, DRT, Mr. Ross Tyser, Sales, DRT and Mr. Harold Beal who is the inventor of the DRT frangible bullet and verified the above mentioned information. All three individuals subsequently arrived at the USACIL where we had the opportunity to test fire the calibers 9mm, 40 S&W, .45, .223 REM and .308 in the USACIL indoor firing range. Based upon the wound cavity within a gelatin block, it was determined that the powder distributes itself uniformly and there appeared to be no loss of energy. Additionally, the lead free frangible ammunition appears to be very accurate at long ranges. The bullet cores are comprised of a compressed blend of powdered metals such as steel and tungsten (Photograph # 2). Unlike most frangible bullets, the bullets don't use polymer and/or various bonding agents; rather, DRT uses tin to hold the cores together. The high density frangible bullets have approximately 160,000 rpm, which results in better accuracy. The bullets are smaller yet heavier and more dense than similar type bullets and it doesn't possess impurities in its core that could cause the bullet to yaw in mid-air. Furthermore, the frangible bullets will disintegrate upon impact and thus reduce the risk of ricochet and personal injury to innocent bystanders.

From a forensics standpoint, several of the various caliber bullets were test fired both in the water recovery tank and the indoor firing range and later microscopically examined in order to determine if there were any striations for identification and/or elimination purposes (Photograph # 3). Based on the test firings, it was determined that upon impact, most of the powdered cores disintegrate; however, a small portion of the material can be located in the thickened portion of the jacketed base (Photograph # 4). Contrary to popular belief, there are sufficient striations found on the bullet jacketing



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of fired frangible bullets for comparison purposes (Photographs #5 and 6).

Currently, DRT has twenty-two patents on various products and processes. They've spent the past three years building custom machinery and have a current production of 25,000 bullets per 8-hour shift. DRT is currently purchasing commercial cartridge cases from Winchester and Sellier & Bellot, Czech Republic; however, they plan on using their own head stamp within the next few months. The company is located at 405 N Lyon Street, St. Grant, MO, 64456. Currently, DRT has several contracts with various law enforcement agencies and the U.S. government and starting 1 July 2007, they'll be commercially selling their ammunition products through Ellett Brothers, Chapin, South Carolina.

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NOTE: The opinions or assertions contained herein are the private views of the author and are not to be construed as official or as reflecting the views of the Department of the Army or the Department of Defense.

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