



Operational Assessment of the Benelli M4 Shotgun as a Less Lethal Launcher

A report to the Bureau of Justice Assistance

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Introduction

Law enforcement officers are frequently faced with armed or resisting offenders that refuse to comply with their lawful orders. Consequently, a degree of force on the part of law enforcement is necessary to make a physical arrest of the suspect. Unfortunately to date, there is no less lethal weapon appropriate for every circumstance. While some options appear to be successful in gaining suspect compliance, they are limited by the proximity to the subject. Respectively, kinetic impact munitions such as bean bag projectiles respond effectively at substantially greater distances. There are wide ranges of launched munitions of a variety of compositions, accuracy and maximum effective ranges.

Contact from the projectiles of less lethal munitions provides a transfer of kinetic energy that will significantly impact and potentially incapacitate a suspect. Currently, all 12 gauge less lethal munitions must fire from a pump action shotgun in order for the ammunition to cycle correctly (Kenny, Heal, & Grossman, 2001; Hubbs and Klinger, 2004). As most agencies already have twelve gauge pump shotguns, they are the most frequently utilized for their versatility as a lethal or less lethal weapons platform.

However, advances in firearms technology have produced a number of semi-auto and full auto shotguns for tactical operations. The Benelli M4 shotgun is a semi-automatic, tubular magazine fed weapon chambered for the 12 gauge (18.4 mm) cartridge and employs an auto-regulating gas operated system. As with all semi-auto shotguns, it was unlikely that this weapon would be capable of cycling less lethal ammunition. However, a substantial amount of information began appearing on the internet and other media which placed that belief in question.



Communications with the firearms distributor that provides weapons to the Weapons and Equipment Research Institute (WERI) for testing suggested that they too assumed that the Benelli M4 was capable of cycling a wide range of less lethal ammunition and had sold weapons to agencies under that belief. This became the driving force for this study as the impact of incorrect purchase data became clear.

Statement of Problem

A number of internet blogs have been written by individuals who have purchased the Benelli M4 and claimed that the shotgun will in fact cycle less lethal ammunition. It is likely that this belief stemmed from a documentary television show that appeared to show the Benelli M4 cycle a number of ammunition types including less lethal. On the television show Lock N' Load, Season 1, Episode 7, it was demonstrated and stated that the Benelli M4 could cycle less lethal beanbag rounds. The weapon is shown firing several beanbags but the footage has obviously edited out the manual cycling of the ammunition. It is unclear why this occurred but has had a dramatic impact on the firearms and law enforcement community. A sample of blog postings conveying the opposing views (below) demonstrate the power of a media effect.

The Last Man Standing Defense blog stated "The M4 has a different gas system (than the M1S90) to allow the use of less lethal ammo." One blogger stated that "It cycles ALL ammo", while others state "the M4 will eat anything you put in it, even low recoil stuff" and "it was a

USMC requirement to ensure the weapon would cycle less lethal/low recoil.”

(Benelli M3 or M4, 2008).

Police Law Enforcement Magazine stated that “LAPD officers and U.S. Marines in Afghanistan use Benelli's M4 shotgun. The semi-automatic shotgun is capable of handling a variety of shot-shell loads — from the lightest training rounds to the heaviest duty rounds. No manual operation of the M4 is required to cycle the rounds and a collapsible stock is available for law enforcement.” (Benelli M4 Shotgun, 2009)

However, other firearms blogs have taken a completely different view of the weapon. One Silencer Talk and Modern Rifle blogs stated that “The only problem with this is not being able to shoot certain kinds of less lethal munitions.” (Help....Which Benelli?, 2009)

Additionally, the Georgia Outdoor News blog had a comment that said “Low-power rounds, such as less-lethal rubber pellets, must be cycled manually.” (Benelli M4 Tactical-Loaded, 2010)

Currently, law enforcement agencies are under considerable financial strain and the need for economic purchases has never been more necessary. The Benelli M4 represents a significant purchase as its cost ranges from \$1,699 to \$2,499 depending upon the various accessories packages. Consequently, the determination of the operational abilities of this weapon is critical in deciding the future procurement needs for agencies across the country.

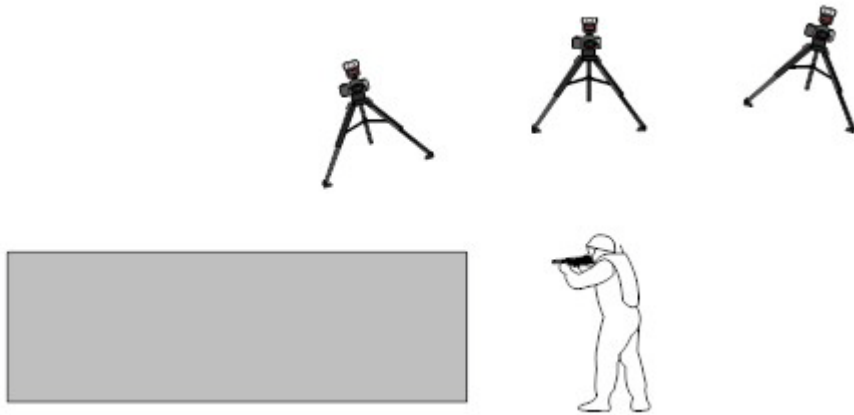
Methodology and Findings

A total of one hundred (100) rounds of less lethal bean bags from four different manufacturers were procured for testing through the Benelli M4. These manufacturers were: Combined Tactical Systems, MK Ballistics, Defense Technologies, and ALS Technologies.

Manufacturer	Model	Price per Unit	Velocity (fps)	Mass (g)
Combined Tactical System	2581 Super Sock	\$5.35	265.475	40
MK Ballistics	4023 Aerosock	\$5.50	246.975	40
Defense Technologies	3027	\$5.95	276.8	40
ALS Technologies	1212T Bean Bag	\$5.95	291.625	40



Three camera angles were established: one camera was used to film the ejection port of the shotgun, another positioned behind the operator, and one positioned in front and to the right of the operator. It was hoped that the cause of any malfunctions would be readily identifiable in a review of the video evidence.



All staff affiliated with the study and the operator was certified in less lethal munitions. Four rounds of an individual brand were loaded into the tubular magazine of the weapon. The operator then fired the first round and unsuccessfully attempted to pull the trigger to cycle remaining rounds. The operator was then required to manually cycle through the remaining rounds.

Failure to automatically cycle occurred with every brand and through a total of forty (40) rounds. It was determined to be unproductive to continue firing the remaining rounds as there was no indication that the shotgun was capable of cycling less lethal rounds. The manufacturer of the M4 does not advocate that the shotgun can cycle less lethal rounds. In fact, when the company was contacted, their staff informed the principle investigator that the Benelli M4 was neither designed nor capable of cycling any known less lethal rounds in a semi-automatic fashion. The Benelli representative stated that the M4 shotgun required three (3) drams of gunpowder to properly cycle the ammunition and less lethal munitions contained less than ten (10) percent of that amount.

Conclusion

Clearly, a semi-auto shotgun capable of cycling both lethal and less lethal ammunition would have a great deal of utility to the law enforcement community. Unfortunately, a “perfect storm” of wishful thinking and misinformation has led to the belief that the Benelli M4 has the ability to cycle less lethal munitions. The results of this study indicate otherwise as the beanbag ammunition of CTS, ALS, Def Tech, and MK Ballistics did not automatically cycle and required manual cycling to chamber each round.

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