
2018
DYNAMIC MUNITIONS
9 mm BALLISTICS TEST



PROPRIETARY REPORT FOR DYNAMIC MUNITIONS LLC

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FORWARD

The Dynamic Munitions 9mm test was conducted during November and December of 2018. It included 4 rounds. Three of the rounds are produced by Dynamic Munitions and the fourth round was the Hornady XTP hollow point used for comparison purposes. All of the testing followed the protocols used during the 2016/17 Joint Agency Ballistic Test For Defensive Handgun Ammunition. Only three of the five phases were requested with the exclusion of the barrier phases. It was hosted by Viper Weapons Training and included testers and experts from multiple agencies. No employees or representatives from Dynamic Munitions were present for any of the testing or influenced any measurements, results or any information included in this report. The training company ensured continuity, consistency and accuracy of all tests and generated this final report for Dynamic Munitions.

This report brings together all of the data from the two months of testing. It combines the knowledge and results of previous federal wound ballistics tests, verifies those results and uses medically recommended animal tissue media to create new relevant realistic data. The comparison of effective handgun ammunition for federal, state and local agencies is critical and complex. Representative data of a real target is needed for instruction and selection. The individual shot data produced during this test has all been measured and recorded and is included in this report. A compilation data sheet is also included to better compare shot results and averages.

No conclusions or choices have been made and none will be included in this report. The test was conducted only to produce and record raw data. Data from rounds failing to function as designed on target were not thrown out as has been done in other familiar tests. Any ammunition failures in the weapon or failure to fire were recorded but are not described in this report. The only failures included were wound ballistics failures to function on target.

AMMUNITION SELECTION CRITERIA

Four rounds were chosen for this test. Dynamic Munitions requested an unbiased third party test of three of their 9mm rounds. Their duty ammo uses the Hornady XTP projectile and factory Hornady 124 grain XTP hollow point ammunition was independently purchased and used for comparison purposes to the Dynamic Munitions duty hollow point using the same bullet. All four rounds went through all three phases included in this test.

ROUND 1: Hornady 124 grain XTP Hollow Point.

This factory ammunition is from Hornady's Custom Line of ammunition. It is a high performance pistol load with excellent accuracy and good terminal performance. This line of ammunition has the highest levels of quality control. It is a common choice by law enforcement. This round was used for comparison purposes with the Dynamic Munitions 124 grain hollow point that also uses the XTP projectile.

ROUND 2: Dynamic Munitions 124 grain XTP Hollow Point.

This ammunition is the primary duty 9mm round produced by Dynamic Munitions LLC. It utilizes the Hornady XTP projectile.

ROUND 3: Dynamic Munitions 115 grain FMJ.

This is the primary training 9mm round produced by Dynamic Munitions LLC.

ROUND 4: Dynamic Munitions 147 grain CMJ.

This is a specialty low pressure ammunition designed for the competition shooter to provide low recoil, consistency and yet still make power factor.

TEST PROTOCOLS AND PHASES

PROTOCOLS:

All phases and tests were conducted with at least one chief tester and one assistant for quality control and multiple measurements. No averages were provided unless at least 4 rounds fired per phase for all rounds. All failures to function are included in the data with no "flyers" or failures being removed.

5 PHASES:

1. All rounds fired at least 4 times, chronographed and averaged. Testing actual vs advertised velocities, consistency and reliability. Outside Air Temperature (OAT) for this phase of testing was between 57 and 62 degrees Fahrenheit.

2. All rounds fired at least 4 times into IWBA calibrated FBI 10% ordnance gelatin with a standard 4 layer denim barrier. Recovered rounds inspected for failures, retained weight and overall dimensions.

Measuring Overall Penetration Depth.

Measuring Reliability and Consistency.

3. Animal Tissue with a standard denim barrier. All rounds fired at least 4 times into Animal Tissue with a denim barrier. Rounds not recovered.

Measuring Overall Wound dimensions. Exit wound channels from each of the two briskets measured for min and max diameter then averaged. Average diameter converted to area and recorded.

Measuring Reliability and Consistency.

MEDIA:

IWBA Calibrated FBI 10% ordnance gelatin. Proper recipe, temperature and BB depth calibration immediately prior to shot.

Denim barrier consists of four layers of standardized material.

Animal Tissue consists of 2 boneless hanging briskets
7-8" thick. (Average human male is 10" thick)
36±2 pounds. Fat side out, back to back. Point side up on one and down on the other to provide equal thickness.

Animal Tissue consisting of 2 boneless cow briskets was chosen after discussions with a forensic pathologist, other MD's and a butcher. There are four main types of human tissue: muscle, epithelial, connective and nervous. Cow brisket closely represents human muscle tissue and organs. It is a compressible realistic consistent media. Results accurately compare to post shooting medical reports.

Media Problems:

IWBA Calibrated FBI 10% ordnance gelatin- Gel was originally used because it is consistent and easy to use/measure. It allowed a comparative study to take place with replicable results. Never advertised or designed to be a simulation of any human or animal tissue. Gel is a fluid and is non-compressible unlike human material. Temporary Stretch Cavity does not represent any damaged or destroyed material. Although density and resistance is similar to human tissue gels inability to be compressed makes it an extremely poor tissue simulant as hydraulic effects in gel are completely different than in animal tissue or a human target. This required a new more realistic media to be used. Our Phase 3 used actual animal tissue to make up for the deficiencies in using only gel and getting artificial results. This was never a problem in hollow point testing as recovered bullet diameter equaled gel wound diameter which is similar to results in actual tissue. With rounds that tumble or cause compression gel results are very artificial and were very different from actual tissue tests or medical reports post shooting.

TEST AND ROUND SUMMARIES

To include as much relevant data as possible we used multiple pistols with different barrel lengths. We used a Glock 17L, 2 Glock 34s, one Glock 17, 2 Glock 19s and a Sig P320. We found very consistent results from 3 testers perspective.

ROUND 1: Hornady 124 grain XTP Hollow Point.

This ammunition performed almost exactly as it did in the 2016/17 Joint Agency Ballistic Test For Defensive Handgun Ammunition. Since the same phases and protocols were used we included that data to increase sample size.

ROUND 2: Dynamic Munitions 124 grain XTP Hollow Point.

This ammunition was extremely consistent and matched almost exactly the terminal performance of the Hornady XTP.

ROUND 3: Dynamic Munitions 115 grain FMJ.

This round functioned flawlessly and proved to be an excellent choice for inexpensive FMJ training ammunition.

ROUND 4: Dynamic Munitions 147 grain CMJ.

This low pressure ammunition had noticeably lower recoil. Its velocities were consistent. We found that these 147 grain competition rounds cycled great in both Glock 19s with factory springs. In the other Glocks and the Sig we had several failures to cycle as could be expected due to its low pressure. We replaced the factory spring with a 13 pound spring and the Glock 17L, Glock 34s and the Glock 17 all functioned perfectly. We didn't have other springs for the Sig. Also, the velocities *decreased* with the longer barrels of the Glock 34 and Glock 17L. We did some drills and recorded 2 controlled triples with .15 splits with that low recoil round in a G34.

ACKNOWLEDGEMENTS

There are so many people to credit with the amount of data that was measured and calculated in this report. People involved in this test came from a police department, a local gun store and 2 training schools. One local grocery store chain gave a great discount on the brisket used in Phase 3. The tests were accomplished at 2 outdoor ranges. No ammunition manufacturers were allowed to attend any test. They were only allowed to provide ammunition and nothing else.

A very special thanks to all the volunteers who helped set up, tear down, measure, re-measure, document, calculate and check all the data. Only through their diligent thorough work could this much accurate data be generated.

There are no conclusions in this test. Testing was accomplished only to provide raw data on a large scale with an enormous sample size on multiple media.

Any questions regarding this test, other tests or to inquire on a future test should be made to:

viperweaponstraining@gmail.com

Other information and reports are available at:

www.viperweapons.us

ATTACHMENT 1: TEST PICTURES



ATTACHMENT 2: SPREADSHEET TEST DATA

Dynamic Munitions 9mm Ballistic Test				PHASE 1			PHASE 2			PHASE 3	
Caliber	Round	Box Velocity	Pistol	Rounds Fired	Average Velocity	Standard Deviation	Rounds Fired	Denim Covered Penetration	Gelatin Diameter	Denim Covered Shots	Tissue Av Hole Area
9mm											
	Hornady 124 gr HP XTP	1110	Glock 17 4.5"	10	1091	31	5	16.25	0.43	4	0.3
	Dynamic Munitions 124 gr HP XTP	1110	Glock 17 4.5"	7	1095	8	5	16.75	0.42	4	0.32
			Sig P320 4.7"	7	1093	11					
			Glock 19 4.0"	7	1067	7					
			Glock 34 5.31"	7	1151	11					
			Glock 17L 6.0"	7	1180	10					
	Dynamic Munitions 115 gr FMJ		Glock 17 4.5"	7	1108	10					
			Sig P320 4.7"	7	1101	12					
			Glock 19 4.0"	7	1078	5					
			Glock 34 5.31"	7	1142	20					
			Glock 17L 6.0"	7	1175	25					
	Dynamic Munitions 147 gr CMJ		Glock 17 4.5"	7	953	9					
			Sig P320 4.7"	7	947	15					
			Glock 19 4.0"	7	951	12					
			Glock 34 5.31"	7	935	16					
			Glock 17L 6.0"	7	914	25					