



James C. Boudreau
Support Services Captain

Windham Police Department

Kevin L. Schofield
Chief of Police



William T. Andrew
Patrol Captain

Memorandum

To: Donald H. Gerrish; Town Manager
From: Kevin L. Schofield Chief of Police
Subject: Department Pistol Transition Proposal
Date: January 27, 2019

To follow up on our earlier discussion, members of the departments firearms unit have been researching new service pistols for the Windham Police Department. Currently, the officers are assigned Sig Sauer Model P226 pistols in 357 Sig, in Semi-auto caliber. The Majority of the guns were obtained and issued in 2006, less the few that have been replaced over the past 13 years. Although still functional, Sgt. Ray Williams, Officer Devon Rogers and Officer Josh Katuzny have had to replace parts on several service weapons. If we do not convert to a new system, I will ask them to inspect and armor each weapon to assure they remain mechanically sound and functional.

The proposal being made is two-fold; first to transition to a new make of gun, second to transition to a new caliber. Officers Thomas Hamilton and Devyn Rogers, under the supervision of Sgt. Ray Williams prepared a report which is enclosed. To paraphrase they recommend we transition to the Glock model G45 9mm. The rational is as follows:

- Highly popular and utilized weapon in civilian law enforcement and military applications.
- Lower shooter recoil due to "low bore axis" which means the weapon sits lower in the hand therefore reducing the effect of recoil.
- Increased ammunition capacity, 18 rounds compared to our current 13 round capacity.
- Fewer mechanical pieces (38) in the Glock weapon system which translates into fewer repairs and easier cleaning and armoring of the weapons.
- At approximant \$410 per weapon plus 3 magazines they a very affordable and cost effective.



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The team recommend to transition to the 9mm caliber, their rational is as follows:

- More popular caliber
- Less recoil than other utilized calibers such as the .45, .40 and .357 Sig
- Increased accuracy for most shooters
- Equally effective as heavy calibers (see attached FBI studies)
- Less costly than most other calibers
- Popular caliber which typically is readily available.

The methodology to seek input from all sworn officers was to shoot not only our current Sig Sauer weapons, we tested and evaluated several models of Glock pistols at the firing range last summer. After feedback received from department members, and their independent evaluation, the team recommend: the **GLOCK MODLE G45** pistol in **9MM caliber**.

Cost: We have obtained Quotes from Interstate arms our firearms vendor. The cost of the project for 30 Glock pistols, 90 magazines, and 30 holsters is \$15,868.50. We would receive \$9550 in trade for our old weapons making the net cost to the department \$6318.50.

If approved my recommendation would be to utilize our federal forfeited assets account to pay for this project. There are ample funds to cover this cost.



Windham Police Department
Memorandum

To: Chief Kevin Schofield, Captain James Boudreau, Captain William Andrew
Cc: Sergeant Peter Fulton, Sergeant Ray Williams, Sergeant Rob Hunt, Sergeant Jason Burke
From: Officer Devyn B. Rogers, Officer Thomas J. Hamilton
RE: Glock / 9mm Proposal
Date: August 9, 2018

Law enforcement agencies are in a constant state of reassessment. From the patrol officer who is responding to calls and determining what their next course of action will be based upon the information at hand, to the command and administration reviewing policies and procedures to determine if they are still relevant and/or necessary. Departments across the nation have moved to external vests and carriers because it was recognized that wearing a heavy duty belt on the waist for 8 to 10 hours a day over the course of many years can cause or accelerate health complications. No longer do departments set up a perimeter and wait for additional units during an active shooter scenario. The world of law enforcement is, and should be, in a constant state of evaluation and improvement. Much like the transition from revolvers chambered in .38 special and .357 magnum, to auto loading handguns chambered in 9mm and .45ACP, I believe it is time for the Windham Police Department to consider a change in its duty sidearm and ammunition.

Below is a transcribed excerpt of the FBI Academy Caliber Specific Ammunition Trial:

Source: <http://looserounds.com/2015/11/09/fbi-9mm-justification-foia/>

"May 6, 2014

FBI Training Division: FBI Academy, Quantico, VA

Executive Summary of Justification for Law Enforcement Partners

- Caliber debates have existed in law enforcement for decades
- **Most of what is "common knowledge" with ammunition and its effects on the human target are rooted in myth and folklore**
- Projectiles are what ultimately wound our adversaries and the projectile needs to be the basis for the discussion on what "caliber" is best
- In all the major law enforcement calibers there exist projectiles which have a high likelihood of failing LEO's in a shooting incident and there are projectiles which have a high likelihood of succeeding for LEO's in a shooting incident
- **Handgun stopping power is simply a myth**
- The single most important factor in effectively wounding a human target is to have penetration to a scientifically valid depth (FBI uses 12" – 18")

- LEO's miss between 70 – 80 percent of the shots fired during a shooting incident
- Contemporary projectiles (since 2007) have dramatically increased the terminal effectiveness of many premium line law enforcement projectiles (emphasis on the 9mm Luger offerings)
- 9mm Luger now offers select projectiles which are, under identical testing conditions, outperforming most of the premium line .40 S&W and .45 Auto projectiles tested by the FBI
- 9mm Luger offers higher magazine capacities, less recoil, lower cost (both in ammunition and wear on the weapons) and higher functional reliability rates (in FBI weapons)
- The majority of FBI shooters are both FASTER in shot strings fired and more ACCURATE with shooting a 9mm Luger vs shooting a .40 S&W (similar sized weapons)
- There is little to no noticeable difference in the wound tracks between premium line law Auto enforcement projectiles from 9mm Luger through the .45 Auto
- Given contemporary bullet construction, LEO's can field (with proper bullet selection) 9mm Lugers with all of the terminal performance potential of any other law enforcement pistol caliber with none of the disadvantages present with the "larger" calibers"

I believe all the points made above are important, but I have bolded/underlined the points I find most significant.

In short, advances in ammunition manufacturing have given the 9x19mm (9mm luger) round the capability to penetrate and expand on par with or better than the best types of other common handgun calibers, while retaining two of its own best inherent characteristics: ability for high ammunition capacity in a full sized handgun, and extremely manageable recoil impulse. 9mm also causes less wear and tear on the firearms because it is not a high pressure round like .40S&W or .357 Sig.

Examples of 9mm vs .40 S&W (from <https://www.luckygunner.com/labs/self-defense-ammo-ballistic-tests/>) :

9mm

Barnes 115gr TAC-XPD +P

5 shot average penetration (w/ 4 layers of fabric): 13.4"

5 shot average expansion: .70" (initial diameter of .355")

NOTE: I have personally fired this round, and despite being a "+P" round, it has exceptionally low recoil, while still meeting then minimum FBI standard of 12" of penetration.

Hornady 115gr FTX Critical Defense

5 shot average penetration (w/ 4 layers of fabric): 13.1"

5 shot average expansion: .50" (initial diameter of .355")

Speer 115gr Gold Dot

5 shot average penetration (w/ 4 layers of fabric): 16.4"

5 shot average expansion: .55" (initial diameter of .355")

.40 S&W

Barnes 140gr TAC-XPB

5 shot average penetration (w/ 4 layers of fabric): 12.4"

5 shot average expansion: .76" (initial diameter of .40")

Hornady 155gr XTP Custom

5 shot average penetration (w/ 4 layers of fabric): 22.4"

5 shot average expansion: .49" (initial diameter of .40")

Speer 165gr Gold Dot

5 shot average penetration (w/ 4 layers of fabric): 27.1"

5 shot average expansion: .40" (initial diameter of .40")

The 3 comparisons made between the 9mm and .40S&W above are a very small sample of a very well planned and executed test by the staff at Lucky Gunner, however I chose comparable brands/bullet weights between the calibers. I chose these brands and bullet weights because they are well known duty rounds, as well as some of the lightest and effective bullet weights for each caliber.

All 9mm calibers showed effective penetration, as well as very adequate expansion. I believe all 3 of those brands and bullet weights are very viable choices for law enforcement duty rounds. The comparable .40S&W rounds show (in two cases) extreme over penetration and unimpressive expansion. For a much more in depth look at ballistic testing I would suggest a thorough review of the Lucky Gunner test.

In order for officers to most quickly stop a deadly force threat, in regards to gunshot wounds, the two most reliable methods are a Central Nervous System shot (immediate incapacitation) or shots to large vital organs causing rapid blood loss (hydraulic failure). The importance of penetration and expansion is discussed at great length in the FBI Trial. This is important because the FBI labeled the two most important wounding factors as follows:

1. Penetration
2. Permanent cavity (caused by bullet expansion).

I believe the first paragraph of the FBI's conclusion sums it up very well, it states "While some law enforcement agencies have transitioned to larger calibers from the 9mm Luger in recent years, they do so at the expense of reduced magazine capacity, more felt recoil, and given adequate projectile selection, no discernible increase in terminal performance."

Not to mention the cost of 9mm as compared to other rounds is incredibly competitive. If the department were to continue ordering ammunition from AAA Police Supply, but purchased 9mm instead of .357 Sig, the savings to the department's budget would not go unnoticed. A case (1,000 rounds) of .357 Sig range ammo costs \$293. A case of 9mm range ammo costs \$203. The savings for a 10 case order of range ammo would be \$900. This savings could be increased even more if the department was willing to explore new options for ammunition suppliers.

This savings does not only apply to range ammo, but also duty ammo. A case of .357 Sig duty ammo (Speer Gold Dot) costs \$424. A case of Speer Gold Dot 9mm 124gr +P costs only \$332. On an order of 2 cases of duty ammo the department would save \$184.

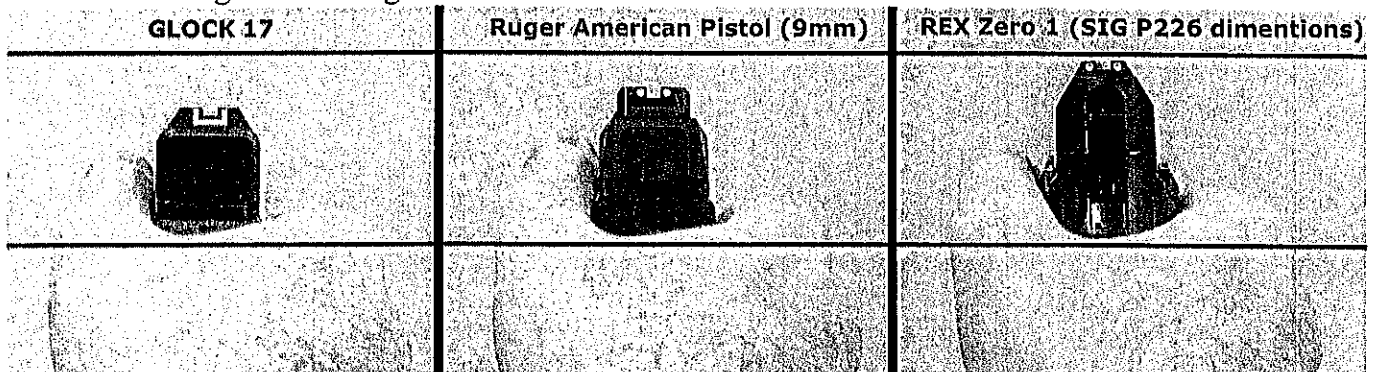
If the department were to keep they current Sig Sauer P226's and convert them to 9mm, it would cost approximately \$407 per gun for the complete 9mm slide assembly plus the cost of new magazines for each officer. The benefit to this would be that the department would not need to switch holsters, as the guns would still fit.

Another option that I believe would be more cost effective in the long run would be to transition to a newer, striker fired, polymer handgun. The obvious choice would be a full sized Glock 17. Glock handguns are an incredibly proven platform that boast reliability, ease of use, simple actions that contain far fewer moving parts, and increased service life of intervals. Glock handguns are used by the majority of law enforcement agencies across the country, as well as special operations groups throughout the military. A department priced Glock handgun costs \$409. This includes 3 magazines and several removable back straps to help tailor the handgun to the specific shooter.

A Glock 17 (chambered in 9mm) holds 17+1 rounds, as compared to our current guns which hold 12+1. I believe that capacity is an incredibly important factor, especially considering that officers miss anywhere from 70-80% of shots during an OIS (per the FBI 9mm justification stats). In addition to the increased capacity and lower recoil of the 9mm round, Glock handguns boast an incredibly low bore axis, further aiding in recoil management and allowing for faster more accurate follow up shots. The Glock 17 has a bore axis height of 1.26", the Sig P226 is 1.80". Though roughly a half inch of difference may not seem like much, it is a significant amount when it comes to felt recoil.

Bore axis is an important consideration because the higher the bore is above the shooter's grip; the more leverage the handgun has during recoil. In the real world this translates to more "muzzle flip" making the handgun more difficult to control during sustained firing.

Below is an image showcasing different bore axis'.



Source: <http://www.thetruthaboutguns.com/2016/03/foghorn/high-low-bore-axis-mean/>

Per <http://gundata.org/blog/post/sig-sauer-vs-glock/> , a Glock handgun contains 38 hard parts. In comparison, the Sig P226 contains over 100. That is 62 less parts that need to be checked for tolerances/wear, and 62 less parts to possibly fail when they may be needed to preserve the life of an officer or innocent citizen.

During my short time as a Sig armorer, I have had to replace several parts on the department issued handguns. In one of these cases, the extractor was damaged so severely that the handgun was on the verge of a catastrophic malfunction where it would become unusable.

Though this next article is only an anecdotal sample of one, there are countless other examples of individuals using and abusing Glock handguns, while they exhibit nothing outside of borderline boring reliability.

Source: <https://www.ballisticmag.com/2018/05/23/glock-17-torture-test-ocean/>

In summary, the author details how over the course of 18 years he treated his Glock 17. At the time of purchase the weapon was a new concept and was not as "tried and true" as it currently is. The author did not clean his Glock for the first 10,000 rounds and experience no issues outside of a slower cycling slide. He also tested the Glock in extreme cold, heat, sandy, and wet conditions without issue.

A common point of contention regarding Glock handguns is that the trigger must be pulled in order to take the gun down. If the user is following all weapon safety rules, as everyone always should when handling a firearm, this is not an issue. Every handgun, regardless of action type (ie. striker/hammer fired) should be visually inspected and physically checked before being taken down.

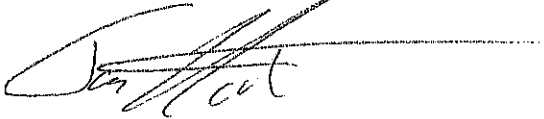
Based on all the provided information, I believe that a Glock handgun chambered in 9mm is the best choice for a law enforcement agency. Considering the increased capacity, low felt recoil, forgiving maintenance schedule, and proven track record of reliability, the Glock handgun is a cost effective and prudent choice that will allow officer to get the most out of their firearms training.

Thank you for your time and consideration.

Patrolman Devyn B. Rogers

A handwritten signature in cursive script, appearing to read "Devyn B. Rogers".

Patrolman Thomas J. Hamilton

A handwritten signature in cursive script, appearing to read "Tom Hamilton".



Windham Police Department
Memorandum

To: Chief Kevin Schofield, Captain James Boudreau, Captain William Andrew
Cc: Sergeant Peter Fulton, Sergeant Ray Williams, Sergeant Rob Hunt, Sergeant Jason Burke, Detective Sergeant Jason Andrews
From: Officer Devyn B. Rogers, Officer Thomas J. Hamilton
RE: Glock / 9mm Proposal Appendix 1
Date: October 26, 2018

Since the initial proposal was submitted, the primary source that was used to collect ballistic data for the 9mm and .40S&W (Lucky Gunner) has added several brands of .357 Sig. We think that a more direct comparison between the 9mm and the .357 Sig will even better demonstrate the superiority of modern day 9mm ammunition.

9mm:

Speer 115gr Gold Dot

5 shot average penetration (w/ 4 layers of fabric): 16.4"
5 shot average expansion: .55" (initial diameter of .355")
5 shot average velocity: 1143 feet per second

Hornady 135gr Critical Duty +P

5 shot average penetration (w/ 4 layers of fabric): 18.1"
5 shot average expansion: .47" (initial diameter of .355")
5 shot average velocity: 1118 feet per second

Federal 124gr HST

5 shot average penetration (w/ 4 layers of fabric): 18.3"
5 shot average expansion: .61" (initial diameter of .355")
5 shot average velocity: 1135 feet per second

Winchester 147gr Ranger T-Series

5 shot average penetration (w/ 4 layers of fabric): 16.5"
5 shot average expansion: .74" (initial diameter of .355")
5 shot average velocity: 941 feet per second

.357 Sig:

Speer 125gr Gold Dot

5 shot average penetration (w/ 4 layers of fabric): 13.2"
5 shot average expansion: .67" (initial diameter of .355")
5 shot average velocity: 1375 feet per second

Hornady 135gr Critical Duty

5 shot average penetration (w/ 4 layers of fabric): 18.9"
5 shot average expansion: .47" (initial diameter of .355")
5 shot average velocity: 1222 feet per second

Federal 125gr HST Tactical LE

5 shot average penetration (w/ 4 layers of fabric): 18.0"
5 shot average expansion: .61" (initial diameter of .355")
5 shot average velocity: 1387 feet per second

Winchester 125gr PDX-1 Defender

5 shot average penetration (w/ 4 layers of fabric): 15.4"
5 shot average expansion: .69" (initial diameter of .355")
5 shot average velocity: 1423 feet per second

Overall Averages (9mm):

Penetration: 17.3"
Expansion: .59"
Velocity: 1084 fps

Overall Averages (.357 Sig):

Penetration: 16.3"
Expansion: .61"
Velocity: 1351 fps

As the data shows, for these 4 comparable bullet loads, on average the 9mm penetrated 1" further while only expanding .02" less. .02" is exactly .508mm. From this data, the conclusion can be drawn that the average velocity increase shown by the .357 Sig does not have an appreciable impact on terminal ballistics.

To reiterate from the FBI Justification Trials, "The single most important factor in effectively wounding a human target is to have penetration to a scientifically valid depth (FBI uses 12" – 18")." Attached to this document is the full FBI Justification trial for your review.


If adequate penetration, while still achieving adequate expansion, can be achieved with a lower recoiling, higher capacity, more cost effective handgun, this police department would be doing its officers a disservice if it were to not seriously consider the benefits of transitioning to a modern striker fired handgun in 9mm.

In addition to the above bullets compared, Lucky Gunner has numerous other 9mm rounds that they have tested in the same manner. All of that data is available on their website (<https://www.luckygunner.com/labs/self-defense-ammo-ballistic-tests/>).

Patrolman Devyn B. Rogers



Patrolman Thomas J. Hamilton





QUOTE

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FAX: (978)-667-1350 [LE SALES]
www.interstatearms.com

Bill To: 105830

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375 GRAY ROAD
WINDHAM, ME 04062

Ship To

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375 GRAY ROAD
ATTN: TOM HAMILTON
WINDHAM, ME

Order#	610419-00
Page#	1
UPC Vndr	000000
Ship Point	INTERSTATE ARMS CORP-WHSE 1
Via	BEST WAY
Terms	PD NET 15
Entered	08/24/18
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Taken By	rn	Sales In	RN	Sales Out	PD	Placed by	Customer P/O	AGENCY QUOTE REQUEST
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Instructions
QUOTE REQUEST

Ln#	Product And Description	UPC Item#	Quantity Ordered	Quantity B.O.	Quantity Shipped	Qty UM	Unit Price	Price UM	Discount Multiplier	Amount (Net)
	Quote Request: TOM HAMILTON Contact Number: 207-892-1919 X 4411 Email Address: TJHAMILTON@WINDHAMMAINE.US Pricing is for FET exempt agency purchase only. Freight is estimated and will be adjusted at time of invoicing. *****TRADES***** Department Trades: (25) USED 10 Y/O SIG SAUER 226R 357SIG W/3 MAGAZINES \$315.00 (5) USED 1 Y/O SIG SAUER 226R 357SIG W/3 MAGAZINES \$335.00 CURRENT TOTAL TRADE VALUE \$9550.00 *****TRADE NOTES***** **Quote and trade values are good for 30 days** *It is the responsibility of the department to deliver or									
2	DS-PA455S3ABLE	00000	30		DROP	each	429.00	each	0.00	12870.00
	GLOC AUTO 45 9MM GEN 5 AMGLO NS 3-17RD MAGS									
	** DIRECT ORDER **									
4	7360-2832-411	00000	30			EA	99.95	EA	0.00	2998.50
	SAFA HOL 7360 7TS LVLIII W/LIGHT M3 MID PL BK RH									

2 Lines Total

Total	15868.50
Trade Credit	9550.00-
Invoice Total	6318.50