



JOHN McMAHON, SHERIFF-CORONER



After Action Report

Date 01/06/2014

From: Bruce D. Park, Senior Armorer/Instructor
Range Training/Armory

Subject **Patriot Ordnance Factory (POF) 308 Rifle Test & Evaluation / Follow-UP**

The Armory was contacted by our Special Enforcement Detail (SWAT) back in 2012 regarding testing for a select fire rifle chambered in 7.62 X 51mm (308 Win). Their requirements stated that it must have a 14.5 inch barrel, the ability to accept a suppressor, have some method of regulating the system for the suppressor, and resemble not only in appearance but operation, our standard issued SED M4 rifle. Multiple rifles were considered and tested.

As was stated in the first after action report dated 01/03/2013 the Patriot Ordnance Factory (POF) P308FA was selected for the initial round of testing and was eventually chosen for the duty rifle. Although the rifle was chosen the Armory continued with the testing procedures in an attempt to determine the life cycles of the various components of the rifle and ultimately the service life of the rifle itself.

The test rifle continued to be used for training and demonstrations throughout our department. The rifle received little to no maintenance other than occasionally having the bolt carrier group lubricated. The testers and users were told that this was a "Worst Case" testing procedure and the Armory wanted no preventive maintenance performed on the rifle by the users.

The rifle performed flawlessly to 23,500 rounds with a few minor malfunctions' (most shooter induced). At this point the rifle continued to operate correctly in semi-auto and full auto with the exception of when the operator fired two round bursts. This procedure would produce a double feed malfunction. It was determined that the action (Buffer) spring had become compressed approximately 1-1/2" to 1-3/4" in overall length. Once the spring was replaced the rifle functioned normally.

The next issue with the rifle occurred at approximately 28,600 rounds when we began having intermittent malfunctions. The malfunctions consisted of a failure to extract the empty case completely from the chamber due to short bolt movement while the action attempted to load the next round into the chamber. It was determined that enough of the chrome plating on the gas piston had flaked off to cause a sufficient amount of drag to intermittently cause this malfunction. We replaced the gas piston and this eliminated the malfunction. We were informed by the factory that this issue had already been addressed by the engineers who developed a new piston but the new piston was not available when our rifle was produced.

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At approximately 29,080 rounds we began having failure to eject issues. This again was an inconsistent condition. After a full inspection of the rifle we found a slightly compressed ejector spring and penning of the buffer face with minor distortion to the surface. We replaced the ejector spring and buffer and this eliminated the malfunction. It should be noted that the buffer was replaced just to keep it from causing damage to the aluminum buffer tube extension, not because the buffer was not working. Normally we would have cleaned up the distortion and placed the buffer back in service.

The extractor spring was the next part to show signs of fatigue. Again the rifle functioned fine in semi-auto but began having intermittent extraction problems in full auto. The empty case was removed from the chamber but there was insufficient spring tension to hold onto the case long enough to eject it. The extractor spring was replaced at approximately 31,280 rounds and the rifle continued running normally. At approximately 34,280 rounds we experienced occasional extraction issues in full auto again, during two round bursts. This malfunction resulted in the case being removed from the chamber but the extractor could not retain the case long enough to be ejected. We examined the extractor and determined that it showed enough signs of wear to replace it. We replaced the extractor (final part) and this cured the malfunction. The rifle has continued to function normally to its current round count of 35,480

Test Information

Test Duration: 09/2012 – 01/2014 17 months

Number of Rounds Fired: 35,480

Number of Malfunctions Recorded: 23

Malfunction Types: Failure to feed, Failure to extract, Failure to eject, Double feed

Note: We did not experience any malfunctions until the rifle reached approximately 23,000 rounds.

All extraction failures were due to part fatigue not stuck cases.

Ammunition Used: 7.62 X 51mm (308 win)

Federal 168 grain Match

Federal 168 grain Premium

Winchester 168 grain Match

Winchester 150 grain Power-Point

WPA 145 grain FMJ

TEN-X 125 grain Frangible

Accuracy & Velocity Tests

We performed initial accuracy tests when we first received the rifle. The rifle was shot by three different department snipers and the results are listed below:

100 yard accuracy	.473 to .753
500 yard accuracy	3.76 to 6.01

At the end of the test the same three snipers were asked to perform a final accuracy test and the results are listed below:

100 yard accuracy	.851 to 1.54
500 yard accuracy	5.12 to 7.43

Muzzle velocities were recorded at the beginning and at the end of the test. Below are the recorded velocities:

New	High 2375 fps	Low 2338 fps	Average 2375fps
End of test	High 2296 fps	Low 2285 fps	Average 2291 fps

Chamber / Bolt/ Barrel/ Temperatures

(All temperatures were obtained using a hand held infrared thermometer) Ambient air temperature 60 degrees

Chamber Measured at throat

1 Round = 61 degrees	20 rounds/ full auto = 77 degrees	50 Rounds/ full auto = 81 degrees
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Bolt Measured at bolt face

1 Round = 60 degrees	20 Rounds/ full auto = 65 degrees	50 Rounds/ full auto = 68 degrees
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Barrel Measured at gas block

1 Round = 62 degrees	20 rounds/ full auto = 108 degrees	50 Rounds/ full auto = 211 degrees
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For further information, questions, or data collected for this report please contact me by e-mail or through the information below.



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