

After Action Report - Addendum

Date 12/05/2014

From: [REDACTED], Senior Armorer/Instructor
Range Training/Armory

Subject **Patriot Ordnance Factory (POF) 308 Rifle Test & Evaluation / Addendum**

[REDACTED] Sheriff's department has continued with its long term test and evaluation of the Patriot Ordnance Factory (POF) 308 14.5 inch barreled select fire rifle. At the conclusion of the original test we had shot 35,480 rounds of various brands of ammunition through the rifle. The results of this test were contained in the after action dated 01/06/14. At the completion of this test the factory agreed to allow us to continue testing the rifle to obtain statistical information on long term reliability.

The purpose of this addendum is to report on the status of that test rifle after we continued shooting it in an attempt to "fire to failure" (either mechanical or accuracy). The rifle now has 68,580 rounds fired through it. The last part failure took place at round count 66,900. The head of the op rod fractured and broke off causing the rifle not to cycle. During this malfunction the users continued to fire the rifle by cycling the action by hand for an additional 20 rounds.

A used op rod was placed in the rifle to allow us to finish the accuracy and velocity test while we waited for a new replacement part. The rifle has continued to run an additional 33,100 rounds since we completed the initial testing with only the op rod failure. We have found this to be very interesting because the only maintenance the rifle has received is two cleaning sessions and an occasional lubrication with Lucas gun oil. Other than that the rifle has received no maintenance.

We have been allowed to retain this rifle for further testing and as budget allows (308 ammo is very expensive as you know) we will continue testing with this rifle hoping to achieve our original goal of determining the normal life expectancy for this rifle.

On the next page I will lay out all the test information recorded to date regarding evaluation of this rifle. All data was obtained by live test fire using Sheriff's department personal.

Test Information

Test Duration: 09/2012 – 12/2014

26 months

Number of Rounds Fired: 68,580

Number of Malfunctions Recorded: 33

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. No new part related malfunctions were recorded after approximately 35,900 rounds until the round count reached approximately 66,900.

Ammunition Used: 7.62 X 51mm (308 win)

Federal 168 grain Match

Federal 168 grain Premium

Federal 150 grain FMJ

Federal 149 grain FMJ

Winchester 168 grain Match

Winchester 150 grain Power-Point

WPA 145 grain FMJ

TEN-X 125 grain Frangible

Speer 168 grain LE Gold Dot Soft Point

Hornady 155 grain Steel Match BTHP

Fiocchi 150 grain BTSP

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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 approximately 24,000 rounds the same three snipers were asked to perform an accuracy test and the results are listed below:

100 yard accuracy	.851 average
500 yard accuracy	5.12 average

At approximately 66,900 rounds the rifle was again tested for accuracy and the results are listed below:

100 yard accuracy	1.12 average
500 yard accuracy	5.98 average

Muzzle velocities were recorded at the beginning of the test, at 24,000 rounds and at 66,900 rounds. Below are the recorded velocities:

New	High 2375 fps	Low 2338 fps	Average 2375 fps
24,000 rounds	High 2296 fps	Low 2285 fps	Average 2291 fps
66,900 rounds	High 2398 fps	Low 2372 fps	Average 2384 fps

Chamber / Bolt/ Barrel/ Temperatures 66,900 rds

(All temperatures were obtained using a hand held infrared thermometer) Ambient air temperature 65 degrees

Chamber Measured at throat

1 Round = 63 degrees	20 rounds/ full auto = 79 degrees	50 Rounds/ full auto = 95 degrees
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Bolt Measured at bolt face

1 Round = 60 degrees	20 Rounds/ full auto = 68 degrees	50 Rounds/ full auto = 78 degrees
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Barrel Measured at gas block

1 Round = 62 degrees	20 rounds/ full auto = 110 degrees	50 Rounds/ full auto = 220 degrees
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At this point it should be noted that we have not replaced hammer or trigger springs. During this test we have replaced the following parts:

23,500 Buffer Spring
28,600 Gas Piston
29,800 Ejector Spring & Buffer
31,280 Extractor Spring
34,280 Extractor
35,900 Op-Rod
66,900 Op-Rod

As stated before we decided to continue testing the rifle to complete failure. To date we have not been able to complete this task due in large part to budget constraints. When we receive further funding we will continue testing this rifle and will report all the results of that testing in writing when completed.

At this point in our testing this rifle has surpassed our expectations of reliability and accuracy for a select fire 308 rifle. We have now had six POF 308 rifles in service with our SWAT team for the past year. To date all rifles function without failure and accuracy has been well within all department requirements.

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Sheriff's Armorer/Instructor

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