

7/9-7/8 2008

Post-Event ReportU.S. Army Sniper School M24 Field Service Seminar**Groundwork for Event**

Corey Nissen asked that we organize the class based on the request of SFC Jared VanAalst- NCOIC of the U.S. Army Sniper School. SFC VanAalst, who has just recently taken the NCOIC position at the school, was concerned about the lack of maintenance procedures and records for the rifles belonging to the school, as well as the validity of the repairs that were being performed by the instructors. His goal was to have the instructors trained in such a way that they could competently perform basic repairs safely and effectively, and be able to identify when a maintenance issue required return to Remington for service.

Over the course of several conversations by phone and email, a list of specific issues that SFC VanAalst would like to see addressed was compiled. I organized this list into groups of topics and presented them to Tom Nagle for discussion. Tom approved of covering all of the topics mentioned and added that he would also like for us to spend some time addressing unnecessary problems encountered with the Turn-In program and things that could be done on the unit level to make the process more efficient.

A personal acquaintance in the AMU rifle build area suggested that I also spend some time on the specific issue of chamber maintenance and inspection. Their unit has done some repair work for the Sniper School in the past and cited fouled chambers as one of the most often encountered issues with their rifles.

The week of July 7th was scheduled as off-cycle time for the instructors. July 8th was selected as the date for the seminar, allowing the rest of the week open should more time be required. Six hours were spent in the classroom on the 8th, with three additional hours spent after class with the unit armorer in the armory working on rifles that were known to have issues. July 9th was spent on the range where almost forty of the School's rifles were targeted and assessed.

Materials Supplied by Remington

Each student was supplied with a binder of materials including note sheets for each of the slideshows, inspection procedures, an accuracy test flowchart, Turn-In procedures, and articles written by Mike Haugen covering cleaning, maintenance and painting instructions.

Several homemade chamber mirrors were supplied for use in the armory.

A parts order for \$572.02 was placed, on the MPD cost center, for parts to be used during the event. Approximately \$250.00 of the inventory was used, the rest of which will be returned under the SNC order.

A production/service history of the rifles owned by the school, as well as a SWS service/parts list, was supplied to the NCOIC.

Material Covered

It was stressed that all of the repair material covered in the course was solely intended for use by the instructors at the school and that only material covering cleaning, maintenance and proper Turn-In procedure should be passed along to the students attending the Sniper School.

The presentation material from the M700P armorer's course was modified and repackaged into a series of four short slide shows covering: inspection, ejector service, extractor service and trigger/bolt stop work. Special emphasis was placed on the correct way to perform specific repairs the instructors have been effecting, including what inspection and testing steps need to be taken to ensure that a repair is safe and correct once it has been completed.

Some time was spent discussing pitfalls in the Turn-In process including ensuring that necessary paperwork is properly supplied, point of origin being communicated to Rock Island, and diligent follow-up with weapons pool to make sure that the rifles are relayed to Remington in a timely manner.

Issues Encountered

Included below are specific issues and malfunctions found with the Sniper School's pool of M24 rifles, likely causes observed and actions taken to remedy them:

- Hard Use – Undocumented round counts
 - The School owns 72 M24 rifles- with 6-8 of the rifles being relegated to "parts guns" and 3-4 set aside for competition. The remainder of the rifles are used to instruct classes of approximately 40 students. The class cycle is 5 weeks, with about 8 classes taught each year. Each student fires from 1200 to 2000 rounds over the course of a class. No accurate records are kept of the number of rounds that have been fired through any specific rifle. The service history of the rifle pool shows that only about half have been in for service in the last 5 years, with only a few having been factory serviced within the last 2 years.
 - Surprisingly, of the rifles that were taken to the range on the 9th, ALL shot within spec- with most actually shooting $\frac{1}{2}$ - $\frac{3}{4}$ MOA.
 - While no accurate round count can be determined, the majority of these rifles are used for each and every class, representing somewhere between 9,600 and 16,000 rounds per year. With most of the rifles having not been in for service in several years this would imply that many of the rifles have fired astoundingly high round counts with no degradation in accuracy.
 - Suggested to the armorer that the production/service history that was supplied be used as a starting point for round counts and

service records to be kept on all of the rifles so that they could be preemptively serviced before accuracy degraded.

- Loose / Malfunctioning Safeties

- Nearly half of the rifles inspected had safety levers which would not clearly detent into the 'fire' position. In most of these cases the safety lever also exhibited significant left-right play.
- Instructors have been repairing this by removing the safety from a designated "parts gun" and installing on the preferred rifle.
- Disassembly and inspection did not find any of the safety levers, or detent balls to be damaged- rather in every case either the safety detent spring had lost tension or the retaining clip had shifted and was not holding the spring securely. Those identified were repaired by repositioning the spring and/or retaining clip.
- Two possible causes were found- repeated cycling of the safety lever fatiguing the spring, and the practice of the school to fit a strong rubber band around the pistol grip and the safety lever encouraging the student to keep their safety in the 'safe' position. I believe the rubber band, putting rearward tension on the safety lever when in the 'fire' position, coupled with recoil was causing the safety to 'bounce' to the mid position, further fatiguing the spring.
- Advised the instructors to consider adopting an alternative to using the rubber bands on the safeties, and that rather than swapping in new safety levers, a better practice would be to have complete replacement triggers available to install on the rifle while sending the faulty one back in for a 'rebuild'. One of the instructors mentioned that Brownells is selling Remington 700 Safety Kits (Rifle Basix p/n 758-000-011). I advised that the detent ball and lever would not likely be compatible with the SWS trigger housing and that they were better served to replace the trigger assembly and have the malfunctioning one serviced.

- Malfunction Bolt Stops

- Several of the rifles had bolt stops that would either not pull down out of the way of the bolt or would fail to rebound when released.
- In two instances the cause was found to be that the bolt stop release lever was out of adjustment- corrected accordingly. The rest were found to be caused by fouling and/or corrosion on the bolt stop.
- No suitable flushing cleaner was available in the school armory, though they have recently acquired a parts cleaning tank. Until now cleaning the bolt stop has consisted of squirting oil into the bolt stop slot while the action was still assembled to the stock.
- Advised the instructors to source a spray degreaser or make use of their parts cleaning tank to clean the bolt stop area ONLY with the action removed from the stock. Methods of removing the bolt stop and thoroughly cleaning the bolt stop and its slot were covered during the presentation.

- Bolts difficult to close
 - Many of the rifles would not readily close on a cartridge or an empty chamber. The cause was found to be contact between the right-side locking lug and the front trigger guard screw.
 - Methods of quickly and accurately diagnosing the problem were discussed as well as the proper way to shorten the front screw while removing only enough material to allow proper function.
- Fouled Chambers
 - Several rifles taken to the range had difficulty opening after firing a round. Every rifle inspected was seen to have significant fouling in the chamber.
 - Several chamber mirrors were supplied to the instructors with instruction on how to use them. I suggested that they further emphasize chamber cleaning as part of their cleaning and maintenance presentations, and inspect each student's rifle before it is turned back in.
- Damaged Firing Pin Cam Surfaces
 - Four of the rifles taken to the range that exhibited difficulty opening after firing a round were found to have significant damage to the firing pin cam surface on the bolt body.
 - Two distinct types of damage were found
 - Cracking/Chipping half way up the cam surface
 - Most likely caused by firing the rifle with the bolt not completely in the closed position. Due to the difficulty, in some instances, of closing the bolt (see above), it is possible that some of the damage occurred when the student thought the bolt was closed and fired the rifle. It was also speculated that some of the students may be using a "European Half-Cock Safety" - forgetting they had the "safety" on when they fired the rifle.
 - Carving of the camming surface
 - A significant amount of material was ground away from the cam surface, leaving a sharp ridge on its outer edge which hid the damage until the firing pin was removed from the bolt. Not sure if this was caused by the high number of cocking cycles or an improper heat treat on either the bolt body or the firing pin head.
 - In either case, the instructors were advised to mark the rifle for return. To minimize future troubles, they were advised to pay close attention to rifles that were difficult to close- repairing any with 'long' front trigger guard screws, and to watch for any students who might be firing the rifle with the bolt not fully closed.
- Damaged Stock Assemblies

- Two rifles were found to have damaged adjustable butt plate assemblies. Both of which were damaged at the adjustment screw retaining bushing in the stock plate.
 - Advised armorer to return these stocks for service/replacement
- Damaged Optics
 - Only one case was noted. SFC VanAalst has sent the scope in question directly to Leupold for service.

Follow-Up

Sgt. Palkki, the chief armorer, asked if we had a package of parts that could be ordered to allow them to perform the repairs that were covered. I told him that I was not aware of any such kit, but that I would put together a list of suggested parts and work with him in the future to revise the list to allow them to order replacement parts that ensured they always had replacement parts on hand to repair their most common issues.

Certificates were sent out to each of the attendees immediately upon my return to the office.

All documents put together for the course were saved to the shared Field Service drive for future revision and use.

Sent SFC VanAalst a note of thanks for allowing time in the schedule of his instructors to cover the material and asked that he keep us updated with the status and performance of his rifles.