

MARYLAND STATE POLICE

DATE January 25, 1991

TO/FROM

TO/FROM

<input type="checkbox"/> /___ Superintendent	<input type="checkbox"/> /___ Director, Planning, & Research
<input type="checkbox"/> /___ Deputy Superintendent	<input type="checkbox"/> /___ Commander, Personnel Mgt. Division
<input type="checkbox"/> /___ Chief, Field Operats Bureau	<input checked="" type="checkbox"/> /___ Commander, Training Division
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<input type="checkbox"/> /___ Chief, Services Bureau	<input type="checkbox"/> /___ Legal Counsel Unit
<input checked="" type="checkbox"/> /___ Commander / Director	
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<input checked="" type="checkbox"/> /___ Sgt. S.W. Jesse - Frederick Barrack	

**: Lubricant Test Conducted by S.T.A.T.E. Members**

- Reply / Return By \_\_\_\_\_ / \_\_\_\_\_ AS SOON AS POSSIBLE
- For Your: Information / Comments / Approval / Signature / File (CIRCLE)
- Prepare Reply for My Signature
- Prepare Reply over your Signature, Copy to \_\_\_\_\_
- Take Appropriate Action
- As Requested
- See Me

In September 1989, I had taken several Berettas to the factory in Accokeek to discuss with them a problem we were having with malfunctions. At that time, they advised that they had been experimenting with a different lubricant. This new lubricant was Militec. I obtained a sample and discussed testing it with Sgt. Murphey. tie-agreed, and I started using it on my Agency issued Beretta.

In March 1990, we again discussed the testing. of Militec and another new lubricant, Tetra gun. We had been approached by the representative from Tetra gun, and he wanted to be included in the test. Approval was obtained, and the test was begun in May 1990. The test involved two groups of S.T.A.T.E. team members. One group used Tetra gun and the other group used Militec. Each group was already familiar with using Break free. Each man was to use the product on his Agency issued Beretta and his S.T.A.T.E. issued weapon. These weapons included the following: Remington Model 700 bolt action rifle, Colt AR16 rifle, Remington 870 pump shotgun, and UZI submarine gun. The test was started in May 1990. At the beginning of the test, all of weapons were stripped of the previous lubricant.

In September 1990, the groups switched lubricants. The weapons were again stripped of the previous lubricant, The test was continued through January 1991. This provided for at least three months with each lubricant. Each S.T.A.T.E. team member was asked to prepare a Form 17 about. each of the lubricants tested. I have attached their Form 17's. The general consensus was that Militec was the best lubricant tested. Due to the fact that their findings and. comments are similar to my own, I will sum up all of the findings together.

## REF: Lubricant Test Conducted by S.T.A.T.E. Members

The currently used lubricant is break free CLP. It is a cleaner, lubricant and preservative. It has a teflon base for the lubricant and uses a carrier. The biggest problem with Break free is that it has to be shaken in order to mix the lubricant that settles to the bottom of the container from the carrier. does a good job of cleaning and lubricating. It does tend to off within a month.

Tetra gun uses a submicroscopic fluorocarbon particle (PTFE) . This is suspended in a carrier. They use three different types of carriers, grease, lubricant oil, and a spray lubricant/cleaner. For our test, we chose the lubricant oil and the spray lubricant/cleaner. In my testing, I also used the grease. I did not see any advantage in using the grease over the oil, and, after it had sat on the shelf a couple of week; I found that the lubricant and the grease had separated in the tube, and a liquid came out instead of the grease. The Tetra gun performed well and did an excellent job of rust protection and lubrication. It does, however, have a tendency for the dirt and fouling to form a paste within the weapon making cleaning. more difficult. I also noticed that a weapon coated with Tetra gun had a tendency to form condensation on the surface when stored in a gun case. I contacted the factory representative about this. I was advised that it was just displacing the moisture from the metal. In conclusion, I feel that the Tetra gun is a superior lubricant to Break free. It does still have the disadvantage of having to be shaken before using.

Militec is a synthetic-base& metal conditioner that forms a molecular bond with the metal. It comes in only one form and is similar to a light oil. It does not require shaking before use. I found that after using this product, the weapons were easier to clean, and the fouling wipes away easily. In addition to using it on all the S.T.A.T.E. weapons and the Agency Bereth, I used it on several Pistol Team revolvers and Match Colt .45 pistols. The best feature of this product is that once. it is applied, you can wipe off all the excess, and it still maintains its lubrication properties.

In addition to using both the Tetra gun and the Militec in the normal manner on my on-duty Agency Beretta and my S.T.A.T.E. weapons, I performed several endurance tests with several personal weapons. I cleaned and lubricated in the normal. manner and then wiped the pistols as dry as possible. I then used the pistols in my practice sessions on the average-of two to three times a week. Each practice is approximately sixty rounds. I did not clean them for at least two months. The pistols continued to work without problems. One of these pistols is a Match Colt .45 ACP that normally requires-constant lubrication due to being tightly fitted. Both the Tetra gun and the Militec worked extremely well under those adverse conditions.

In conclusion, I feel that the Break free we are currently using is an adequate lubricant. I feel that two factors are present with this product that help contribute to our occasional problems with malfunctions in the Beretta. Our personnel are not shaking the bottle when they use the Break free, and they are not cleaning' and lubricating the pistol on a monthly basis. By not shaking the bottle, they are only getting the carrier. Even when it is properly mixed, it tends to dry out after approximately a month. Both of these tend to let the fouling that accumulates in the firing pin channel harden. This locks the firing pin forward and causes a malfunction. The Tetra gun is an excellent lubricant and preservative. It is superior to the Break free we are currently using. It still has the disadvantage of having to shaken before use. Of the three lubricants, Militec is the best. It was the easiest to use, does not require shaking and appears to be the longest lasting. I recommend that when the Agency's current supply of Break free is used it be replaced with Militec. On 1/15/91, I spoke with Cpl. D. Boehm at the Supply Division. He advised that we are getting low on our current stock of Break free, and he will need to reorder within the next couple months. I would also request that we continue the testing with Militec. This would at no expense to the Agency as we have enough currently available.

