December 4, 2002 13:49

Snipers And Their Rifles - 1976-2002

Second of Two Parts

By R.J. Thomas

Even before the fall of Saigon, all of the U.S. military services (except the U.S. Air Force) had launched separate initiatives to improve their sniper equipment and capabilities, efforts that would go on for more than two decades. The world-class snipers in the U.S. military today owe their excellence to that sustained, behind-the-scenes effort from the mid-1970s through today.

The Marine Corps had the best of the Scout/Sniper courses, and the Navy SEALs were conveniently located (at least on the West Coast) to take advantage of the Marines' courses at Camp Pendleton, Cal. While seats in the Scout/Sniper course were jealously guarded by the Marines, the SEALs were able to get a couple of seats in most courses.

The SEALs typically finished at the top of the class, and that record of performance strengthened the Marines' contention that the SEALs needed their own sniper course. They generously offered the SEALs their own KD range and stalking areas on Pendleton on which to conduct a SEAL-specific course.

The Army was developing its own sniper qualification courses. However, there was dissension (as to what equipment they needed) between the SF, grunts and the Army Marksmanship Unit. With exception of the Delta boys, the snipers weren't getting much help from the AMU with accurate, long-range equipment.

The evolving Marine sniper rifle was a rebarreled 700 Remington action with steel Winchester Model 70 floor plate and trigger guard, bedded in McMillan glass stocks by the Quantico marksmanship unit. The Marines opted to stay with the 7.62 NATO exclusively, due to availability of 7.62 NATO match ammunition worldwide. They called upon John Unertl to build them a rugged 10X power scope, with enough elevation adjustment to dial up to 1200 yards with the 7.62 NATO match load.

The Navy started rebarreling some of its Vietnam vintage wood-stocked 700s as some had had several thousand rounds through them. The Navy then went into negotiations to buy a replacement rifle for the tired 700s and ultimately bought heavy-barreled McMillan rifles chambered for 7.62 NATO and 300 Winchester Magnum. The Navy also bought a few heavy-barreled 7.62 NATO chambered Remington 700 barreled actions in Brown Precision glass stocks from Brown Precision when McMillan fell behind in deliveries. The scope of choice for the Navy rifles was the Leupold Ultra 16X developed to survive on Navy SASR .50 caliber sniper rifles. Leupold also developed 10X and 20X Ultras to be utilized on the 7.62 NATO and .300 Win. Mag. rifles.

The Army, noting the extended range and accuracy of the Navy and USMC rifles over their M-21s, requested bolt guns. The Army bean counters said they could have them, but they would have to disavow their Vietnam-era M-14/M-21s. The Army succeeded in getting the Remington bolt guns, but were limited to a choice of 7.62 NATO barreled rifles, or .300 Winchester Magnums - but not both. Once again, the bean counters called the shots on what the operators wanted and what they ultimately would get.

During the 1980s, development of 7.62 NATO ammunition for sniper applications continued. Both the Navy and Marine Corps marksmanship programs were having problems extracting the levels of accuracy out of their sniper rifles

previously attainable with 173-grain Full Metal Jacket (FMJ) Lake City Match 7.62 NATO. This situation was of particular concern to the Marines, as their Unertl scopes had elevation settings regulated for the Lake City load.

An ammunition evaluation trial was set up at Quantico, Va., to test the sniper systems of all branches of the military with the Lake City Match ammunition. The end result of those trials was that the marksmanship units the 7.62 L.C. Match was erratic and no longer able to meet minimum accuracy requirements for U.S. military sniper systems.

Also at that time, representatives from both marksmanship programs met at Lake City Arsenal to determine why the accuracy of the LC match/sniper load had deteriorated. The accuracy problem turned out to be multifaceted, but primarily stemming from post-Vietnam budgetary constraints imposed on the arsenals. When accuracy standards were set for 7.62 NATO Match in the late 1950s and early 1960s, all of the brass, projectile and cartridge manufacturing equipment was new. The arsenals picked their most accurate setups and manufactured the best match/sniper ammunition they could and set a production standard based on those lots ammunition. A lesser standard of accuracy was set for 7.62 NATO ball.

However, over the next 20 years, the manufacturing equipment continued to wear - particularly the dies to make the match boattail projectiles - to the point that the original standards for match ammunition could no longer be met. (Specifications for the ball ammo could still be met.)

In typical bean-counter fashion, the budgetary powers controlling the arsenals rejected requests to replace the precision equipment required to manufacture match-quality ammo (a minimal part of their production), and instead reduced accuracy requirements to what they could produce with the worn equipment. Complicating the accuracy problem was the loss of the formula (destroyed in a powder explosion) for the original lots of DuPont IMR 4895 used in the early match loads. The unsuccessful attempts by DuPont to duplicate IMR 4895 forced the arsenal to search worldwide for a powder which would duplicate the loading densities, burn rate and pressure curves of the original 4895. It had only marginal success.

As members of the military marksmanship units already knew, the quick answer to accurate ammunition was to replace the 173-grain FMJ with a 168-grain Sierra Match King bullet. The Match King provided a viable solution to competition ammunition shortfalls, but since it has an open cavity design (hollow point), it was not without problems in use as sniper ammo.

Most people believe that by the Geneva Convention agreements, the U.S. military is prohibited from using expanding, exploding or unusually destructive projectiles in combat. The facts are otherwise: The projectile prohibition language is contained in the "Hague Accords" of the early 1900s, to which the United States was never a signatory, but by which we had agreed to abide in principle.

As a result, the Pentagon directed the Lake City Arsenal to load match ammo with the 168 MK, but to mark the boxes with the caveat declaring, "NOT FOR COMBAT USE" until the issue could be resolved by the office of the Judge Advocate General in international court.

In the 300 Winchester Magnum loads, the Match Kings were altered by spinning the nose of the projectile closed. In preparation to defend the Match King, ballistic labs at the direction of the Pentagon carried out extensive comparison testing with several 7.62 NATO ammo types from European, Asian and Australian sources. The foreign-produced 7.62 NATO, with cannelured 144-grain to 150-grain ball ammunition was tested against the Match King projectile on humanoid models for tissue destruction, penetration and excessive damage.

Out of six NATO ammunition manufacturers represented, the Match King loaded ammunition was the fourth least destructive. An interesting side note was my testimony to the JAG office on the relative effects of the Match King compared with a 173-grain FMJ on its recipient. I pointed out, "It is difficult for an enemy to tell if he has been shot with a hollow point or a full metal jacket ... as it whistles through his ears."

It was also successfully argued that in many sniper situations where a hostage or hostages are involved, the Match King offered less potential collateral injury to hostages due to excessive penetration of the target. The JAG lawyers won the day and we now shoot unaltered Sierra Match Kings in both our 7.62 NATO and .300 Winchester Magnum chambered sniper rifles.

By the early 1980s, sniper training in the three services involved was becoming highly refined. The Marines incorporated the lessons learned from their Vietnam vintage snipers, (Carlos Hathcock, Eric England, Jim Land and others) and combined sniping skills with marksmanship training out of Quantico. The sniper was also trained in the skills of a Forward Observer (FO) for Marine artillery and naval gunfire, as well as recon techniques. Many of the Marine Corps'

sniper instructors and snipers came from the ranks of its competition program.

The Navy followed the Marine Corps lead and began training snipers not only as FOs, but Forward Air Controllers (FACs) and intelligence collectors. The snipers' concealment and stalking techniques could be employed in conjunction with high definition photography and terminal guidance of precision guided munitions missions.

The Navy incorporated Service Rifle and Long Range Competition (Any Sight/Any Rifle, 600 and 1,000-yard competition) training into its sniper course. Learning to shoot well in the heat of competition reinforced marksmanship training basics taught in the sniper course. Load development for the Navy's Long Range Competition program provided the proving ground for the .300 Winchester Magnum McMillan sniper rifle ammunition.

The Navy's sniper program quickly determined that it was difficult to train new snipers with the heavy recoiling magnums, despite easier hits on targets between 800 and 1,200 yards. Navy program managers also recognized that the high-intensity loads for the magnums eroded the throats of the barrels after 1,000-2,000 rounds leading to loss of extreme accuracy (requiring expensive re-barreling). The bottom line was, the students needed to learn their skills using the 7.62 NATO bolt guns with scopes and employing M-14s and M-16s as security rifles. Officials had to restrict Magnums to advanced training and special applications requiring hits on targets beyond the practical range of the 7.62 NATO.

The concept of a pair of snipers working together as a team had evolved along with a need for an effective "Sniper Security Rifle."

The Navy combined the technology of building a National Match M-14 with solidly mounting a medium power (10X) scope to achieve an excellent upgraded version of the old M-21 system. The Navy also made developmental forays into building an enlarged Armalite clone to handle a wildcat cartridge designated the 338/416 RAP.

This cartridge, based on a shortened and necked-down 416 Rigby case, never met expectations for a number of reasons. The foremost of many problems was the design of the rifle, which was based on an "M-16 on hormones." The huge cartridge case holding over a hundred grains of slow-burning propellant behind a Lapua 250 grain boattail spitzer, produced ferocious recoil, requiring a muzzle brake on the oversized AR design prototype rifles. All in all, the project had little chance of producing a system that would meet sniper accuracy requirements, but it did spawn a good sporting cartridge in the .338 Lapua Magnum.

The Navy during the 1980s was also working on a Special Application Sniper Rifle (SASR). The Naval Special Warfare (NSW) Operational Requirement (OR) design called for a one-man portable .50 caliber sniper rifle able to maintain sub-minute-of-angle (MOA) accuracy out to 1,500 meters - the better part of a mile. The resulting single-shot rifle designed by Jerry Haskins with advice from the NSW contracting officer (me), resulted in our first MILSPEC .50-caliber sniper rifle.

Although selected lots of .50 ball ammo shot close to MOA, the program suffered from no dependable source of MOA ammunition. The .50-caliber anti-material Roufuss ammunition was even more erratic from an accuracy standpoint, but shooters made hits on equipment and vehicles out to 2,500 yards - over 1.5 miles. Recommendations to develop precision ammo fell on deaf ears or prompted the bean counters to moan, "too costly." Of course, civilian shooters in .50 caliber clubs succeeded in developing half-minute hand-loaded .50-caliber ammunition (on their own nickel). The U.S. military owes them a great debt for that effort.

Development of the .50-caliber sniper systems continued through the 1990s to include several bolt actions (both single shots and repeaters) from a number of manufacturers.

Barrett came out with a semi-automatic model that sparked some interest within the military for its application on slow-moving targets such as APCs and helicopters. The original NSW OR for a sub-minute-of-angle .50-caliber system has never been achieved with MILSPEC ammo, in either a single shot or repeater system. Several of the bolt actions have also achieved sub-MOA performance with after-market barrels and hand-loaded projectiles in the hands of civilian competitors.

To my knowledge, none of the self-loaders have produced even MOA performance, but the requirement for a repeater, let alone a semi-auto from a sniper standpoint is questionable. If a sniper has not accomplished his goal with one shot or perhaps two at the most, he is at grave risk of discovery and return fire from mortar and heavy machine gun.

Reports of ineffective sniper capabilities of U.S. Forces in Afghanistan, compared with reports of successful long-range hits by their Canadian counterparts, should be taken with a grain of salt, particularly in terms of calling into question the effectiveness of American snipers and equipment.

That is because technology and training cannot attain perfection: Even McMillan .50-caliber sniper rifles utilizing the best hand-loads available, in the hands of the best marksmen in the world, cannot consistently hit human-size targets at 2,500 meters. This is not to say that such hits cannot be accomplished. If a sniper has the target range nailed to a gnat's ass, gets his elevation come-up just right and reads the winds (maybe several) correctly between his muzzle and the distant target, he may dial it in. Every dog has his day.

U.S. forces today have the best sniper equipment in the world. No other country can produce systems that will out-shoot and out-range our 7.62 NATO, .300 Winchester Magnums and our bolt-action .50 caliber sniper systems. Today's long-range 7.62 NATO ammunition has evolved into three load and barrel combinations:

A light projectile, high-velocity load features a 155-grain boattail hollow-point at 2,900 feet per second out of a one-in-thirteen twist 28-inch barrel. The original 168-grain boattail hollow-point provides 2,750 fps out of a one-in-twelve twist 26-inch barrel. A recent improved LR load features a 175-grain boattail hollow-point at 2,700 fps out of a one-in-ten twist 26-inch barrel.

Velocities for the 7.62 NATO LR loads may vary up to 50 fps depending on barrel manufacturer and chamber dimensions. The MILSPEC .300 Winchester Magnum load achieves 3,100 fps with a 190-grain boattail hollow-point out of a 28-inch one-in-twelve twist barrel. A velocity of 3,100 fps velocity on a 190-grain bullet cannot safely be attained with SAAMI .300 Win. Mag. throat and cartridge OAL seating specifications. The MILSPEC load requires a long throat chamber and increased OAL length of seating of the 190-grain projectile (hence increased case capacity) to attain the increased velocity. The whole system must be based on a long action/magazine box to accommodate the increased length of the MILSPEC load.

The bottom line is that it is up to the individual services to provide adequate sniper training, and it is incumbent on our military theater commanders to learn how to effectively employ these sniper systems on today's battlefields.

Editor's Note: The initial article in this series, "Snipers and Their Rifles - 1775-1975," appeared in *DefenseWatch* magazine on Nov. 27, 2002.

R.J. Thomas is a Contributing Editor of DefenseWatch. He can be reached at win70shooter@hotmail.com.

– Your Support is Important!
– Feedback Wanted
– Article Submission Procedures/Subject Editors Sought
– Glossary of Military Acronyms
– Hack Book Sales