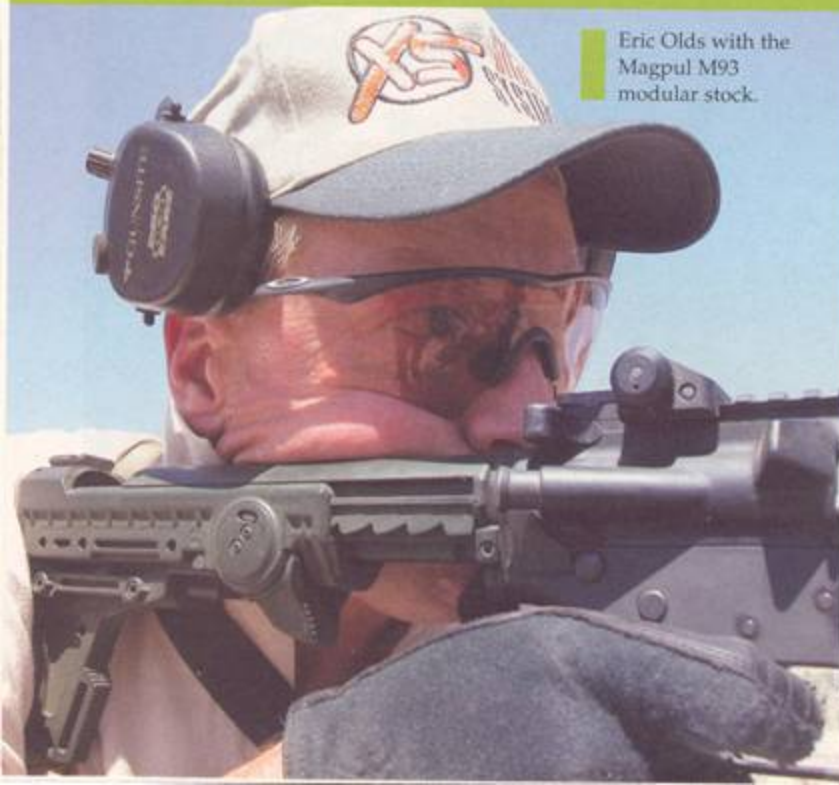




ERGONOMIC CARBIN

top left: Bill Go in SBU Prone, using the Sully Stock on his Wilson Carbine. top right: M4 with the M93 Modular Stock. The pack is Lightfighter's/Eagle's excellent RAID.

BY PATRICK A. ROGERS



Eric Olds with the Magpul M93 modular stock.

While the AR series has been around since the early 1960s, the original M16 is a significantly different weapon than the M16A2 (A3 and A4), M4 (A1) and the precision SAM and SPR variants.

While many of the evolutionary modifications were beneficial (flat top upper receivers, improved handguards) some were, at best, useless. Chief among these are the adjustable target type rear sight and lengthened buttstock—two items that offered more of an advantage to the Team Shooters firing across the manicured lawns of Quantico, Ft. Benning and Camp Perry than to the L/Cpl Grunt engaged in close combat with the fanatics who are trying to destroy all that this country stands for.

The reluctant acceptance of viable optical sights by the military has rendered the target style rear sight moot, but the curse of the A2's buttstock will hinder the gunfighter for a long time to come. It is interesting that while the Big Army and SOCCOM have been using Aimpoint™ red dots and ACOGs for years, the Marine Corps (exclusive of the Force



E STOCKS

NEW CHOICES FOR THE SERIOUS SHOOTER

Reconnaissance Companies, which have been using Aimpoints and ACOGs for years), still apparently enamored by the romance of iron sights, only recently made an urgent acquisition of ACOGs for their grunts.

A casual review of pictures or video from Operation Iraqi Freedom shows U.S. Infantry trying to make do with the too long A2 stock—generally with the toe of the stock above the shoulder. This negates all of the marksmanship training relative to stock weld and cheek weld and makes consistency a lost cause.

Apparently some who make decisions never considered that infantry combat occurs closer to 200 meters than 200, and that body armor may add another inch or two to a stock which is already too long. The extra 5/8 inch difference between the A1 and A2 stock is

great for a High Power rifle shooter in the offhand position, but a detriment for the gunfighter in a proper fighting stance.

I've often wondered about the priorities here. Are we training to shoot polka dots on paper across a golf course—or to kill bad guys?

The adjustable stock has suffered similarly. Originally designed to make the carbine easier to store, it originally had two positions—generally too short and too long (a trait shared by the Joint Services "Combat" Shotgun, the M1014) with lengths of pull (LOP) at 9.8 and 13.1 inches respectively. It was not until the mid 90s that we finally caught on and added two additional milled holes in the receiver extension, allowing for intermediate LOPs.

Another problem is that the toe of the original adjustable stock is one inch

shorter than the fixed stock, making it necessary to hang the toe of the stock on your collarbone rather than place it in or near the shoulder.

Several attempts have been made to correct the collapsible stocks. When the U.S. was looking at the Advanced Combat Rifle (ACR) they used an adjustable stock that had a triangular upper portion, giving a better cheek weld. Some made their way into some SOCCOM units as well as 1st Force Reconnaissance Company. They are rarely encountered now.

The Enhanced Stock—better known as the Ribbed Stock—as designed by Picatinny Arsenal and made by Colt and Rock River Arms (they are not interchangeable) took care of the toe problem, though at (relatively) great developmental cost. It never took care of the cheek weld issue, which is puz-



USAF Para-rescueman Nate Cox with a Vltor Stock on his G/U/U-5P. Note the two battery compartments and enhanced cheek weld.



The Vltor Clubfoot stock.

zling to many. More puzzling is the fact that this stock has a sling loop in the conventional position at the bottom of the stock—wonderful for a carry strap, but useless when one considers the usefulness of a tactical sling. The Ribbed Stock is currently in common use among various military units.

The Naval Surface Warfare Center at Crane, IN designed an enhanced stock (commonly known as the Crane Stock), which is used by some maritime warriors. It has a battery compartment on each side of the stock, giving the shooter an opportunity to not only store spare batteries for Aimpoint, NVG and white lights, but it also has a better cheek weld. It also uses an attached rubber butt pad to address the issue of plastic stocks on nylon gear, resulting in slippage. Unfortunately, there is a problem keeping the pads attached.

This stock is approximately 7.25 inches long, giving a LOP while closed at 11 inches. The toe is 5 inches long, putting it in line with the current offering of adjustable stocks. The Crane is not normally available legally outside of the military supply system (though this may soon change).

Fortunately, a number of very talented people have stepped up to the plate with some very useful answers to the current stock deficiencies. Each has addressed the issue in line with their particular frame of reference. I've had three upgraded stocks in my possession for a few months now, and they have

been through the hands of a number of serious shooters. Each stock is sufficiently different to avoid making a direct comparison, but each addresses the need of the gunfighter. There are obviously other stocks available. I haven't evaluated the others and won't comment on something that I haven't thoroughly wrung out.

SULLY Stock

The Defensive Edge makes and distributes a fixed stock that makes a lot of sense. Greg Sullivan, the Chief Instructor at Defensive Edge, designed the SULLY stock, an 8.1-inch long unconventional appearing buttstock that is the right size for most people.

Based on observations while training SWAT cops, Greg noted that those in a proper fighting stance (hips and shoulders square to the threat, elbows down) often had the adjustable stock open to the first notch. This LOP (approximately eleven inches) appeared to be useful for the majority of those who used a proper fighting stance and/or who wore body armor. This mirrors my observations exactly. (See *The Fighting Stance and LOP*, December 2001 S.W.A.T. Magazine and *Carbine Manipulation Tips*, July 2002 S.W.A.T. Magazine.)

The issue A2 stock (also the adjustable stock opened all the way) forced the shooter into a bladed position, which did not support what was necessary in close combat. Additionally, it exposes the weak link in body

armor—the sides, which have less ballistic coverage and lack the hard plate in the front and back of the vest.

Greg understood the problems at work here, and set out to design what is the best of the fixed stocks. Made of solid urethane and molded in black to match the existing furniture, the stock is undercut. While unconventional in appearance, this notch makes it significantly more comfortable to carry on patrol. It also works well if you are shooting from a rest. The support side hand can hold the rear of the stock back into your shoulder. The SULLY stock, due to its shorter length, offers a better cheek weld than the issue adjustable stock—another thing necessary for consistency.

This stock works only with the short-barreled weapons (11.5 to 16 inch), and requires the use of the carbine receiver extension and buffer/spring assembly.

This stock has a 1.25-inch sling loop in the conventional position. This is necessary if you want to attach a three-point sling to the carbine.

Greg is working on a similar stock for shotguns, something long (no pun intended) overdue.

The Sully stock represents the way to go if you use—because of choice or legal mandate—a fixed stock.

Vltor Modstock

The Vltor Modstock System is a product of Vltor Weapon Systems (Vltor, pronounced UHL-tar), is Latin



The VLTOR stock (top) and the Crane Stock (bottom).

Cross section of the VLTOR and Crane Stocks showing battery compartments and cheek weld area.

for Avenger, an appropriate name considering the events of 11 September, 2001). Eric Kinzel, the General Manager, is no stranger to the AR family nor the gun business, having started off as a staff writer for *Gun World Magazine*, and then moving on to Knight's Armament Corporation. He helped start up Microtech (a specialty knife company) and then founded Vltor.

While at *Gun World* he had an opportunity to view pictures of entries in the Advanced Combat Rifle (ACR) development/test program. One of the entries, Colt's, had a unique stock. It had a longer buttplate (solving a noted previous problem) that was angled at the bottom, and a triangular cheek weld. Later, while at KAC, he had the opportunity to see the Colt's ACR in person. He became sold on the design.

Eric designed the stock to be modular from the outset. He noted that with the advent of the SOPMOD Kit, a number of mission essential accessories were available to the shooter, most requiring batteries (Aimpoint optical sight, AN/PEQ-2A IR illuminator and sight, AN/PVS-17B night sight). The added weight on the front of the carbine translates into slower target acquisition. Eric wanted to get some of the weight back to the rear of the rifle if possible (there is currently an initiative at a lab to have all equipment powered from a source in the stock).

The Modstock is offered in both rifle and carbine versions in two configura-

tions, Standard and Clubfoot. All are made of a glass filled polymer composite with a special impact modifier to lessen the chance of the stock becoming brittle during cold weather. All metal parts are either 4140 carbon steel or 304 stainless.

The Standard Carbine stock has an outline roughly similar to the original adjustable stock (circa 1968) and a similar latching mechanism, but any similarity ends there.

The toe of the stock is five inches—a full inch longer than the original. The toe is canted slightly inboard, rather than the vertical plane on the original, providing a subjectively better feel when mounted. The butt has a rough molded checkering, providing a gripping surface against your vest.

The stock itself has a series of holes and notches, offering a clue to its modularity. Currently the stock comes with two cheekpieces (left and right) or two battery compartments, each holding batteries for your optic, white light or night vision sight. The battery compartments add another subjectively nice feel for the cheek weld.

The Modstock is slightly heavier than the issue stock (4.8 oz. vice 4.4) and adding components and batteries will also drive the weight up slightly. This slight increase in weight is more than offset by having spare batteries on the gun (if that is in your mission profile) or a better cheek weld (if the batteries are not needed).

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It will give you a LOP from approximately 9.9 inches (closed) to 13.3 inches (open), the same as the issue stock. Intermediate positions are the result of your present receiver extension, be it two, four or six positions.

The Modstock has a molded sling loop on top of the stock, in the same position as the original. There is also a side-mounted pushbutton swivel that can be attached to the lower portion of the stock.

The Carbine Clubfoot stock is undercut, offering an option when firing from prone (the SAM or SPR configurations come to mind here).

The rifle Modstock is longer, reflecting the increased use of the prone position when servicing targets in the mid range venue.

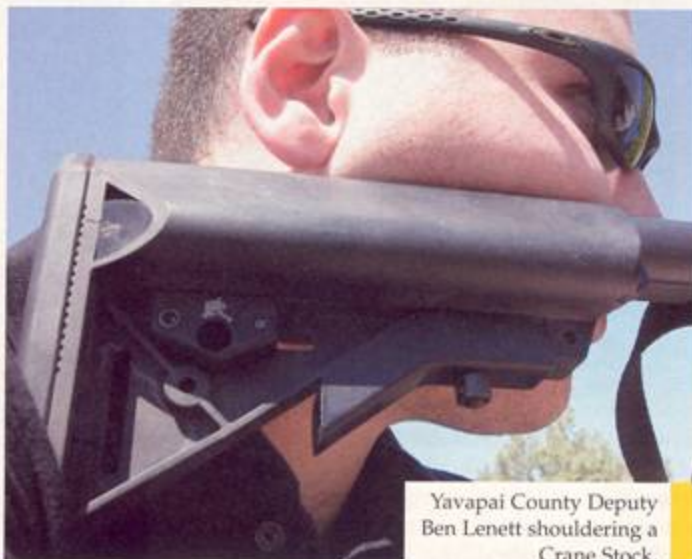
Right now you can have any color you want as long as it's black. They are currently testing tan and OD green, but if you are really set on a more useable color, there is always the spray can.

The Vltor is a relatively simple way to bring the original adjustable stock to its logical conclusion. All that is necessary is to remove the original stock and place this onto your milspec receiver extension. This might be especially useful to those military types who need to turn a stock gun into the armory, but prefer the better fit of the Vltor while doing cool guy stuff. This is exactly what happened when U.S. forces crushed Iraq earlier this year. A number of Marines from the 1st Reconnaissance Bn privately purchased a number of carbine stocks and gave them the proper workout in the intended environment.

Please note that the Modstock will only fit on the milspec receiver extension. The milspec and Colt's receiver extensions are 1.15 inches in diameter, while the other makers' receiver extensions have a diameter of .020 larger at 1.17 inches.

Magpul M93 Modular Stock System

Richard Fitzpatrick is a former Reconnaissance Marine, and the designer of the ubiquitous Magpul. His M93 Modular Stock System (MSS) is completely different and unique in every aspect from all other stocks. The M93 is a carbine stock, and thus far the only one released. In the design



Yavapai County Deputy Ben Lenett shouldering a Crane Stock.



The current military Ribbed (Enhanced) Stock.

pipeline are the M92 and M92A (fixed stocks), the M94 (a fixed stock that is user configurable for length) and the M95 (for Precision Rifles).

Rich got his idea after seeing the Ribbed Stock at the 99 NDIA Expo. After using the ACR stock (great minds obviously think alike) on his personal carbine, he was surprised that the Ribbed Stock did not have a similar

cheek weld. The question was asked, and the arsenal staffers told him that the Ribbed Stock "was the result of many months of study, research and significant amounts of money."

This once again verifies my theory of (in certain fields) an almost impenetrable disconnect between those who do and those who design.

Rich started off with a vision to make a version of the ACR stock with a few improvements. He found that he could accomplish everything he wanted except for the consistent cheek weld. He realized that the issue receiver extension (AKA the buffer tube) was a weak link and would have to be redesigned. He then collaborated with Steve Hines (maker of the Ergo Grip) who had a design of his own that incorporated an improved cheek weld design. They filed jointly for a utility patent in mid 2001. They showed the design to the SOPMOD conference and received little interest.

They brought a prototype to 2001 SHOT Show, where they were sufficiently encouraged to bring out a group of pre-production stocks. Based on user feedback over a three-month period, they instituted changes and brought out the production version.

The MSS uses a proprietary receiver extension tube that acts as a modular base for any of the fixed or adjustable stocks. The aluminum buffer tube is covered by a high strength carbon fiber nylon mix. The exterior of the tube is larger than the issue receiver extension, providing a more comfortable and repeatable base for your cheek weld, regardless of the extension of the stock. The stock body is a glass filled polyurethane, which acts as a natural lubricant over the buffer tube.

The stock itself is seven inches long, and the toe is five inches high. The stock currently comes with a removable tail unit—future offerings will include a battery pack, a Survival/Aircraft Unit (USMC Cobra crews are now carrying

M4's in the cockpit) and a Grenadier Unit, carrying three 40mm grenades for the M203QD.

The stock has eight adjustable positions, ranging from a 10.04 inch to a 14 inch LOP. Preset clips are included so that you can rapidly deploy the stock to your favorite position without having to count up or down.

The lock and release lever is a tad different. There is a lock button in front of the lever. When the lever is forward, there is no movement (laterally or fore and aft). In the unlocked position, the stock is engaged to the buffer tube, but will ratchet rearward when pulled. Even though it is unlocked, the stock cannot travel forward—you can use it without fear of the stock collapsing forward. If the lever is pulled and held rearward, the stock will move freely along the buffer tube.

There is a molded sling loop on the inside of the removable tail cap. More importantly there is available a steel sling loop that attaches to the buffer tube, and permits attachment of the more practical single point sling.

The stock comes in black, but will be offered in tan, OD green, and coyote brown.

The best way to describe the MSS is that it is a fixed stock that is also adjustable. It made an impression strong enough to have it purchased by MARSOC Det 1 (the Marine Corps contribution to Special Operations Command) for use on its M4A1 carbines—in coyote brown, of course!

Fitzpatrick has a few other neat innovations that may come to fruition soon.

It is hard to avoid comparisons when talking about a single subject. It is also difficult to remain objective, when subjectivity based on past experience has the potential to prejudice the mind. Each of these stocks is designed for a specific purpose, by those who actually have experience in this line of work (what a concept!). Each fills a particular niche, and each is a quality item worthy of consideration. Each of the three principals are competent and knowledgeable men. More importantly, they have a frame of reference as shooters, and have carried their thoughts forward to produce equipment that improves the man/weapon interface.

I have used each of the stocks, and have observed multiple shooters use them under demanding conditions. Each stock is a quality piece and you can't go wrong with any of the three.

Many people prefer a fixed stock, citing strength and fit. An equal number prefer the adjustable stock, stating that the ability to adjust the LOP is important for an issue gun that may have to fit a number of different shooters. The choice may or may not be yours, but rather an anonymous bean counter serving a two-year tour in an acquisition billet.

Equipment is not a substitute for skill, but we often find shooters hampered by ineffective or inefficient weapons, sights, slings, stocks or other accouterments.

We are fortunate to have a wide variety of equipment to choose from. The difficulty starts when we try to sort out the wheat from the chaff. A lot of what is on the market is useless at best, and you may not understand this until you plunk down a bunch of your hard earned cash. The result may be no more than an inconvenience, though it could be significantly worse. Find the very best equipment that fits your mission profile. Then seek proper training with that equipment.

When you are finished, train some more. ☺

[Pat Rogers is a retired Chief Warrant Officer of Marines, and a retired NYPD Sergeant. He has been a Rangemaster at Gunsite since 1993, and is currently the Owner of E.A.G. Inc, which provides services to various governmental organizations. He can be reached at patrogers3@juno.com.]

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