Teludyne Tech's StraightJacket system is applicable to semi-autos as well as bolt guns. They are also offering AR-15 upper receivers fitted with the system.

TELUDYNE TECH'S NEW BARREL JACKET SYSTEM

Could a STRAIGHTJACKET BE IN YOUR FUTURE?

Fortier is justly suspicious of extravagant accuracy claims, but this unusual barrel system seems to be able to back them up. **By David M. Fortier**

The old '42 flatfender rattled, bounced and lurched across the range heading up to the 500-yard line. The Kansas wind was gusting up to 20 mph and I chuckled as Mark almost lost his hat. Pulling up to the plywood target frame, the Jeep skidded to a halt and the retrofitted V-6 fell silent.

Climbing out, Alan Adolphsen, Mark Hatfield and I walked over to check our groups. I had fired a 10-shot string with an old No. 4 Lee-Enfield, outfitted with one of Teludyne Tech's StraightJacket barrel systems. Ammunition used was Wolf's 174-grain FMJ load from their Gold line.

At this distance, 500 yards, I frankly wasn't expecting much. To start, the Lee-Enfield's old two-groove barrel was dark from cordite and looked like a sewer pipe. Add in that Wolf's load is a standard ball, rather than match, load and I fully expected the group to be fairly large.

Instead of a 10-gauge duck pattern, I found seven .311" holes clustered into a more than respectable 5-inch group. All 10 were tucked into 7.5 inches. I have to admit I stared at it for a bit while thinking about the rifle with which it had been fired.

Eventually I uncrossed my eyes and glanced over at the Alan's group. Immediately before firing a 10-shot string onto paper with a StraightJacketed Remington 700 in 7mm Rem. Mag., he had rapidly pounded 20 onto a steel silhouette. Putting my tape up to it, I measured it center to center at just 2.5 inches. We were off to a surprising start, but I remained skeptical, and after pasting targets I walked quietly back to the Jeep. I needed to burn more rounds before I'd be able to tell if Teludyne's StraightJacket barrel system actually worked, or if it was just snake oil.

I have to say that I love my work and what I do for a living. However, I do sometimes tire of fielding calls from people who have designed what they consider the next great leap forward. These vary from useless gadgets, wonder lubricants and accuracy enhancers to "exciting" new firearm designs that just leave you shaking your head.

An example is the gent who called with the solution to the U.S. military's semi-automatic sniper rifle dilemma. His answer was an M1 Garand he'd modified to .338 Win. Mag. He felt this was the perfect fix and should be fielded immediately. When I mentioned a few small minor points such as the Garand has been out of U.S. service for decades, it's a product of 1920s manufacturing techniques, there were no spare parts available and due to the way it's loaded an optical sight has to be offset far to the left, he simply grew quiet.

So my natural reaction when I received a phone call from Teludyne Tech concerning the StraightJacket system was skepticism. After all, this unknown company makes enough claims concerning their system to make any seasoned rifleman shake his head. What do they claim their patented StraightJacket system will accomplish? Well, the list is actually fairly long. It will:

1. Improve the accuracy of any barrel.
2. Heat slower than a conventional barrel.
3. Weigh less than a traditional steel bull barrel.
4. Reduce or eliminate heat mirage from a hot barrel
5. Be extremely robust.

What looks like a bull barrel is really a light profile barrel inside a specially designed jacket system that stiffens and insulates the barrel.

The difference in this case, though, was that I knew the person on the other end of the phone. The designer of this system, Alan Adolphsen, hails from my home state of Maine. He is well respected for his fabrication skills, regarding both nautical equipment and suspensions for off-road vehicles, in the Mid-Coast region.

I'd seen his work before and always marveled at his skill. He is perhaps best known for his line of handsome scratch-built high-end flintlock rifles, pistols and shotguns. But he is no stranger to accuracy or long range shooting. In a former life, he carried an M24 as a sniper in a U.S. Army Reserve mountain unit. He is also a common face at high power matches and carries a Master classification.

So when he first spoke to me about his system, I listened to what he had to say. His quest to improve how a rifle performs began when he took up high power. Lying on the 600-yard line one hot Maine summer day with a .303 Lee-Enfield, he grew frustrated.

His problem was his group opened dramatically as the barrel heated. While the rifle shot very well for the first five or so shots, it became erratic as it heated. Scratching his head after the match, he vowed to fix the issue and retired to his shop.

His desire was not to simply switch rifles or swap out barrels, but to make the combination he already had perform. After numerous failed experiments over several years of hard work, he finally developed a system which actually performed, and dubbed it the StraightJacket.

Once he had a system that worked the way he wanted, he spent a considerable amount of time on research. He did this to see if someone had done something similar in years past. When he found nothing like it he patented all aspects of his system. Next, a company in South Carolina was formed to produce it and is now offering it to shooters.

What is it? Good question. It's actually fairly simple. It consists of a standard barrel (preferably of small diameter) with a large diameter (1.25 inches) outer sleeve. Carbon steel, stainless, aluminum and titanium sleeves are offered. Then a patented mix of bat wings and voodoo is added to fill the void between the outer jacket and barrel, creating a permanent monolithic structure.

If desired, an integral or removable muzzle brake can be mounted. When completed, the StraightJacket becomes a robust part of the barrel.

One question I had regarded durability. What about if it was dropped or received a hard impact? Would something break? Alan answered this question during his initial development and testing. He added a StraightJacket to an old worn out military M1898 Mauser barreled action he had laying about the shop. He then went to work on it with a hammer. After putting some minor dings in the stainless steel jacket, he began to swing it like a baseball bat against an anvil. He eventually succeeded in bending the Mauser action, but the StraightJacket remained intact.

Here's Alan Adolphsen, the inventor of the StraightJacket. His Remington 700 .300 Win. Mag. sports his patented barrel system with removable muzzle brake.

While discussing his system Alan took note of my skepticism and offered to StraightJacket my favorite Sako TRG-22 rifle. I politely declined his offer, but said if he was serious he could come out to my range in Kansas and demo his system.

Much to my surprise, he agreed. He offered to drive out and allow me to test a number of rifles with his system installed. While that sounded good, it would really provide no baseline regarding how these rifles shot before the system was installed.

So he offered to bring a stock factory rifle out. I could test it out of the box, and then he would install his system and I could retest it. To make things a bit harder on him, I said I'd ship him one of my personal rifles to StraightJacket. In this manner I could see if it actually did make a noticeable improvement in accuracy in a rifle out of his control. He had made some impressive claims, so I needed a suitable rifle. But I also needed something expendable if his claims proved false.

Adolphsen brought a variety of rifles to Fortier's range. Among these was a .303 British Lee-Enfield shop mule. This averaged a respectable 1.5 moa at 500 yards.

The Lee-Enfield sported a shortened wartime production two-groove barrel dark from cordite inside a StraightJacket, scope mount and a Teludyne stock.

Fortier kicked in a Mosin-Nagant, to which Teludyne added a StraightJacket. TTI added a scope mount, moved the bolt handle and dropped it into a new stock.

Firing off a bipod, the StraightJacketed Mosin-Nagant averaged a respectable 1.5 moa at 500 yards. The TTI muzzle brake made the rifle much more comfortable.

Digging around in the darkest, most cobwebbed depths of my bunker I came up with a suitable candidate, a 7.62x54R Mosin-Nagant. This particular example had a clean barrel, but someone had violated the receiver by drilling it for a scope mount. So it no longer had any collector value.

I had shot this rifle quite a bit in the past and checking its log book revealed group size and shape changed as the barrel heated. Average group size was in the 2.5-inch range at 100 yards, but the rifle was very inconsistent.

A short time later Alan arrived with Mark Hatfield, Teludyne Tech's Vice President of Logistics/Goverment Liaison. They brought a number of rifles with them and a large quantity of ammunition. Included in the pile was my reworked Mosin-Nagant.

I didn't recognize it at first. It had been transformed with the addition of a stainless steel StraightJacket installed over the standard military barrel. This incorporated Teludyne Tech's distinctive full profile double baffle muzzle brake. The StraightJacket gave the rifle the look of a heavy barrel match rifle.

The poorly installed scope base installed by a previous owner had been removed and a proper 1913 rail had been mounted to the top of the receiver inline with the bore. This would allow a scope to be properly mounted for testing.

After initial testing a Savage .308 bolt gun was broken down and fitted with a StraightJacket barrel system over the factory lightweight sporter barrel.

The bolt handle was also relocated and turned down to clear an optic. Then the barreled action was dropped into a competition-style stock Alan had whittled out. The end result was a very distinctive looking rifle which did not appear to be a Mosin-Nagant at first glance.

As I enjoy collecting and shooting classic military bolt-action rifles, I began testing with one of their shop mules. This was a No. 4 MK 1* Lee-Enfield in .303 British with a stainless steel StraightJacket. A scope mount had been added along with a custom competition style stock. Despite being topped with a cheap 3-9X hunting scope, the old Brit actually looked pretty good.

Pulling the bolt and peering down the barrel though revealed rough wartime two-groove rifling as dark as a Taliban's heart. I think I let out an audible wince just looking at it.

A quick zero check at 100 yards plunked three rounds of 174-grain Wolf Gold into .8". I had no intention of testing at 100 yards, though. Instead I climbed to the top of my shooting tower and got comfortable with the Brit rested on a shooting rest and rear bag.

My first round center punched a LaRue Sniper Target at 200 yards. Working the bolt, I dialed in 3 moa and slapped the 300-yard Action Target silhouette. Dialing in more elevation and carefully doping the wind, I took aim at the 500-yard LaRue.

The .303 was a bit lazier in the wind then I was used to and my first shot skipped to the right of center, off the silhouette. I dialed in a bit more windage and slapped it with the following five rounds. Next I switched to paper and fired a 10-round group at 500 yards. The Enfield/Wolf combination averaged 1.5 moa. Two more 10-shot groups maintained that average with 70% of all shots fired going into 1 moa.

Impressed by the consistency of the rifle, I decided to turn up the heat. Stacking a few more boxes of ammunition next to me, I cranked in some more elevation. Carefully taking aim through the cheap 3-9X scope, I squeezed off a round at the 600-yard silhouette. Coming out of recoil I watched the 20x10.5-inch plate dance on its chain. Quickly cycling the bolt, I fired again and again as I worked my way through the magazine. With 11 fresh empties lying next to me, I stuffed in another 10 rounds and repeated the exercise.

By the time those 10 rounds were gone, the black paint in the center of the target's chest was replaced by bullet splash. I stuffed in another 10 and continued on. When I was done, there were 31 rounds knotted up in the center section of the target. Coming off the gun, I reached forward and touched the barrel jacket. It was barely warm. I could easily pick the rifle up by the barrel. Plus I never detected mirage from barrel heat in the scope during the three strings.

Alan watched what I was doing and then grabbed a Remington 700 in .338 Rem. Ultra Mag. Going prone with it, he fired and reloaded as fast as he could go until he had emptied a full 20-round box. As soon as the last empty had hit the ground, he jumped to his feet, grabbed the rifle by its barrel and pressed it against his cheek. Normally this would result in a yelp and a burn. However, despite being force fed 20 rounds at a rapid rate, the big magnum was only mildly warm. You could easily hold onto any part of the barrel.

Next I mounted a Nikon 4-16x50mm Tactical onto my Mosin-Nagant and zeroed it at 100 yards. Firing a 10-shot group at 100 yards with Wolf 203-grain soft-points averaged 1.5 inches. This same load, from the same lot, had previously averaged 2.5 inches for a five-shot group. Next I moved to firing three 10-shot groups at 500 yards using Wolf's 200-grain EXTRA Match load. The old Mosin averaged 1.5 moa at this distance with the Russian match ammunition. 60% of all rounds fired went into 1 moa.

Switching back to Wolf's 203-grain soft-point load the Mosin proved easily capable of holding a LaRue at 500 yards. At 600 yards, I kept 90% of 40 rounds fired at a rapid rate on a 20x10.5-inch LaRue. Keep in mind, this was done with a good bit of wind (15-20 mph) and a cheap Russian steel case soft-point load intended for moose-size game.

After firing approximately 300 rounds of match, soft-point and ball ammunition at distances of 100 to 600 yards I came to a conclusion. It was obvious the accuracy of my 7.62x54R Mosin-Nagant had been improved. Before the StraightJacket was installed, accuracy was some-

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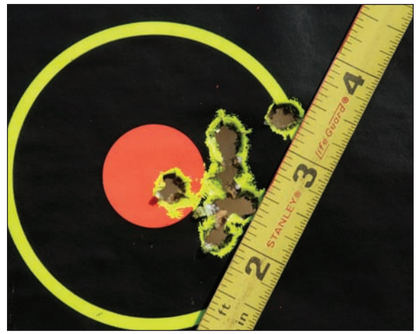

Accuracy of the Savage was noticeably improved following the StraightJacket installation. Three 10-shot groups averaged 1.2 inches at 100 yards.

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what erratic and group size/shape was affected by barrel temperature.

After the installation, group size was reduced by at least 1 moa. More importantly, the rifle was much more consistent. Plus barrel temperature was no longer an issue. I will also add that while I am not a fan of muzzle brakes, it did prove beneficial in this case.

Firing prone, 200-grain match and 203-grain soft-point 7.62x54R loads can rock you a bit. I find firing long strings of these loads to be a bit uncomfortable. Teludyne Tech's muzzle brake reduced any discomfort and made both the Mosin and lighter kicking Lee-Enfield very pleasant to shoot.

Mark Hatfield presses a StraightJacket barrel to his cheek after rapidly firing 20 rounds of .338 Rem. Ultra Mag. Don't try this with a standard barrel.

So, in these two specific examples Teludyne Tech's StraightJacket system did improve accuracy. However, to be honest, both of these are old surplus military rifles. Both had been restocked. Neither simply had a StraightJacket system installed. Due to this my next question was, "How much of a difference would just a StraightJacket make installed on a brand-new out of the box rifle?"

To find out, Alan fetched a brand new Savage .308 hunting rifle from the back of his SUV. It was brand new in the box with a light sporter weight barrel and a cheap factory-installed 3-9X scope. Nothing fancy, just a good reliable deer rifle. I pawed it over, noted the scope was installed a mite crooked, and prepared to get to work.

Rather than using Teludyne Tech supplied ammunition during testing, I walked to my bunker. Rummaging around I grabbed a case of Black Hills Ammunition's highly respected 168-grain Match load.

Next, three 10-shot groups were fired from a rest with rear bag at 100 yards. Keep in mind, firing 10-shot groups is a much more telling test than a similar number of five-shot groups. This is especially true concerning a light barrel sporter, like the rifle in question.

When testing was completed, the Savage had averaged 2.5 inches for the three 10-shot groups. Immediately following this, Alan broke the rifle down and installed a StraightJacket. As this was done solely for the purpose of this demo, and no shop was available, it was not done with an eye towards aesthetics. After the rifle was reassembled, the proprietary material used to fill the void between the steel jacket and factory barrel was allowed to do its thing for a set amount of time.

With the installation complete, the light barrel sporter suddenly looked like a heavy barrel target rifle. However weight was only increased by approximately 1.2 pounds. Since the jacket and filler material are lighter than a conventional bull barrel, the resulting package weighs quite a bit less than it looks.

With the rifle ready to go, the same load from the same lot was used to fire another three 10-round groups. The first group put nine rounds into an inch, with all 10 going into 1.2 inches. All three groups averaged a very consistent 1.2 inches.

Next I moved to 500 yards. Using the same load from the same lot I fired three more 10-shot strings. My first string at this distance put five rounds into 2.9 inches, seven rounds into just 3.2 inches with all 10 measuring 7 inches. Keep in mind we were shooting in a pretty typical Kansas wind.

All three 10-shot groups averaged 1.2 moa, with the core of each group coming in at under 1 moa. Following this, an additional 200 rounds were expended on the steel silhouettes at 500 and 600 yards.

Throughout testing the Savage remained very consistent and easily stayed on a LaRue at 600 yards. So without a doubt the accuracy of this rifle was improved by a noticeable amount through the installation of the StraightJacket system.

Don't think semi-automatic rifles are left out either. The folks from Teludyne also brought with them a 16-inch AR carbine outfitted with a StraightJacket. This was one of their first prototypes. However the simplistic nature of Stoner's gas system makes installing Teludyne Tech's system relatively easy.

It was assembled using a standard chrome-lined pencil weight barrel with most of the gas tube hidden inside the barrel jacket. For this test I pulled out some of Black Hills' 60-grain VMAX load. Firing 20-shot groups, yes 20 shots, from the bench at 100 yards I put 14 rounds into .75" and all 20 into 2 inches. I fired this at a rate of one round every four seconds and admit to getting a bit sloppy towards the end.

At 600 yards, it put 29 out of 30 rounds onto a 10.5-inch wide and 20-inch tall LaRue despite being fired at a rapid rate.

My conclusion after spending a week on the range with the folks from Teludyne Tech is their system does actually work. We tested a total of eight rifles, and all performed very well. The StraightJacket does indeed appear to dampen barrel vibrations and thus increase accuracy. This is especially true during long strings of fire.

Teludyne Tech's system is available with a fixed or removable dual baffle muzzle brake or no brake at all. Their design proved very effective at reducing recoil.

Depending upon the original barrel profile and barrel length, this system adds between 1 and 2 pounds to the rifle. So it is lighter than a traditional heavy profile barrel. Plus heat is radiated at a different rate than a conventional steel barrel.

I never noticed heat mirage radiating from the barrel, even during 30-40 round strings. The muzzle brake design also works well, especially on large magnums. I did not find it offensive, like many are, standing to the side of the shooter.

Low light testing was also performed using their 16-inch 5.56x45mm AR-15, M855 ball ammunition and a video camera. While there was a noticeable flash signature compared to an A2 flash suppressor, it was all vented to the side out of the shooter's line of sight.

Since their visit to my range, Teludyne Tech has been hard at work. Their design has generated interest among groups ranging from certain U.S. military units to shooters involved in the highest level of civilian competition.

They have installed their system on firearms ranging from .22 LRs to .50 BMGs. Among these is a .338 Lapua Improved Benchrest gun which is performing very well in sanctioned competition. They also sponsored a sniper team from the State of Maryland's Dept. of Corrections. This LE team recently competed in the FN/Leupold Sniper competition at Fort Meade, Md. Although this was their first competition, they came in 4th in Unknown Distance shooting out to 1000 yards and 15th overall.

Today Teludyne Tech offers StraightJacket systems not only for bolt-action rifles but certain semi-automatic rifles, such as the AR-10, as well. In addition they are offering AR-15 upper receivers with StraightJackets installed. Prices start at $350 to have a StraightJacket installed on your bolt-action rifle. AR-15 uppers are offered for $699. It will be interesting to see what the future holds for this new company.

Sources

Teludyne Tech Industries, Inc.
864-334-5300 | www.teludynetech.com

Black Hills Ammunition
605-348-5150 | www.black-hills.com

Wolf Performance Ammunition
888-757-9653 | www.wolfammo.com

SAVAGE .308 MODEL 10
100 YARD ACCURACY

Factory 2.5 inches / StraightJacket 1.2 inches

Accuracy is an average of three 10-shot groups fired from a benchrest and rear bag at 100 yards.