GUN TESTS®

THE CONSUMER RESOURCE FOR THE SERIOUS SHOOTER

$5.95 July 2015/Vol. XXVII, No. 7

MORE SELF-DEFENSE SHOTGUNS





How about a pumpgun that's also a semi-auto? The Tristar TEC-12 dual-mode scattergun went up against a nicely appointed Mossberg Model 590 Magpul. One was a clear winner among our four recent candidates. **— Page 6**



338 WIN. MAGNUMS

Gunsmith Iver Henriksen was Elmer Keith's favorite firearms craftsman; here, we take an in-depth look at one of his rifles alongside a reworked Model 70 Winchester. **— Page 10**



LIGHTWEIGHT SNUBBIES

The 325PD chambered in 45 ACP might make a good concealed-carry choice, but we're lukewarm on it, to tell the truth. And see why we gave the 625-10 an 'F' on... **— Page 16**



AR-15 TRIGGERS

Tested: HiperFire's EDT and 24E units, the Ruger Elite 452 AR-Trigger, and Rise Armament's RA-535. **— Page 22**



TARGET PISTOLS

Want to bang paper or steel? We check out the Metro Arms Bullseye and Colt Gold Cup Trophy. **— Page 27**

DOWNRANGE: 2 ● FIRING LINE: 3 ● READER SERVICE: 15 ● COMING UP: 32

DOWNRANGE

GOINGS-ON AT GUN TESTS



Todd Woodard

Though most Gun Tests readers prefer getting their gun reviews straight up in the mail every month, I wanted to take a moment to let you know there are other options to get our unique take on gun evaluations, including some new products: videos, e-books, and electronic archive materials.

Starting from the top, the Gun Tests website, Gun-Tests.com, is where we store archival material from past issues. All current subscribers to Gun Tests magazine have access to many digital editions of past and current issues in PDF format, which can be viewed on laptops, tablets, or other mobile devices. Currently, we offer subscriber-only access to the past 10 years of articles and reviews of handguns, rifles, shotguns, accessories, and more. We are working on ways to expand the archives backward in time, with an eye toward having the entire *oeuvre* accessible eventually. I won't oversell how fast that build-back will be accomplished, however, because it's painstakingly slow work to extract materials from older files. But the realization we came to was that because guns are durable products, a 15-year-old review of a good handgun still has value to our readers because many older guns, now out of production, were in fact super performers, and as used products, they can surpass their original dollar value. The Colt Python and H&K P7M8 shown at right are but two examples.



Currently, we have full-issue PDFs available from January 2006 forward. Now, we're trying to figure out how to recreate 2005 issues in electronic form and make those available. As it stands, some pieces of issues are available in text form on the website back to 1998. However, that information is incomplete — that is, some of the material from each issue from 1998-2005 doesn't appear on the website. We make corrections and updates to the existing material nearly every day. To get digital access to the archives, consult the extensive directions on page 5.

There's also a series of e-books that are available on the website now. These are compilations of past materials organized into categories. The e-book titles include: "The 'A' Team: 1911 Handguns & Gear," "The 'A' Team: Concealable 9mm Handguns & Gear," "Ammunition Buying Guide, Parts I & II," "The 'A' Team: Top AR-15 Style Rifles & Gear, Parts I & II," "380 ACP

— continued on page 31

GUN TESTS®
THE CONSUMER RESOURCE FOR THE SERIOUS SHOOTER

Editor.....W. Todd Woodard
Sr. Technical Editor.....Ray Ordorica
Managing Editor..... Tracey Taylor
Contributing Editors...R.K. Campbell
Roger Eckstine
Austin Miller
Robert Sadowski
David Tannahill
Ralph Winingham
Firearms Coordinators ..... Sy Ent
Kevin Winkle
Texas Custom Firearms
Social Media Editor ..... Cara Blake

TO CONTACT THE STAFF:
GunTestsEditor@icloud.com

GUN TESTS ACCEPTS NO COMMERCIAL ADVERTISING

GUN TESTS ® (ISSN No. 1042-6450) is published monthly by AG Media, Inc.; 111 Corporate Drive, Big Sandy, TX 75755-2446. Periodicals Postage Paid at Big Sandy, TX, and at additional mailing offices. Copyright © 2015, AG Media. All rights reserved. Reproduction in whole or part is strictly prohibited. Printed in U.S.A. Revenue Canada GST Account #128044658.

Subscriptions: $49 (U.S.) annually. Outside the U.S. and Canada $72 (U.S.) for one year, $144 (U.S.) for two years. Single copies $7.50 (U.S.). Bulk-rate subscriptions for organizations and educational institutions are available.

Postmaster: Please send address changes to: ***GUN TESTS***, P.O. Box 8535, Big Sandy, TX 75755-8535, or ***GUN TESTS***, P.O. Box 39, Norwich ON, N0J 1P0. **Canada Publishing Agreement** #40016479.

ONLINE SUBSCRIPTION SERVICE:
www.Gun-Tests.com
Click "Contact Us"
Or call toll free (800) 829-9084

BACK ISSUES:
Call (800) 571-1555

A Solution for 10mm Misfeeds

Reader G.W. had to solve a lot of problems after he bought a Colt Delta Elite in this powerful chambering. Reader Mike wants to know if the 308 battle rifles tested in June had fluted chambers.

Re "The A-Team: 1911 Handguns & Gear" E-Book

Several years ago, I was fortunate to find an early Colt Delta Elite for a very reasonable price. It came with three 10mm magazines. After firing a box of 10mms and waiting for my eyebrows to grow back, I decided to drop a 40 S&W barrel into it. Ordered an appropriate Kart barrel, two Metalform mags, and Jerry Kuhnhausen's book on the gun from Brownells, and went to work. Everything worked out great except the mags. They fed sporadically and would not lock the slide back after the last round was fired. Apparently, the small platform on the followers did not make sufficient contact with the slide stop to push it up into its proper position. When I reordered with another mag, I had the same problem. What to do? I simply loaded up the original 10mm mags with the 40 S&W rounds and have been shooting both factory and reloads without a hitch ever since. They work great. By the way, I recall reading more than 40 years ago, if you are having trouble with 9mm mags in a 1911, use 38 Super mags instead. Keep up the good work, I enjoy your unbiased and objective tests.

— G.W.

G.W. — Thanks for the advice on this uncommon firearm and chambering. A lot of folks are curious about the Colt Delta Elite chambered in 10mm, shown below, but aren't willing to part with the change for pistol and ammunition to see what it's all about.

— Todd Woodard



Re "308 Win. Battle Rifle Shoot Out: Century Arms C91 Vs. PTR-91," June 2015

I just finished reading the latest issue of Gun Tests and I really enjoyed it. I have a question on the 308 battle rifle test. How come you didn't mention the fluted chamber that is part of the CETME/91 design? Maybe it's not on either of these rifles? I ask this because around the year 2000 I briefly owned a CETME. It was a good rifle as far as how it handled, and I would much prefer that design over most other 308 semi-auto battle rifle designs. But it would only shoot rounds with thick case walls — ammo such as Portuguese, South African, and my favorite, Australian surplus. None of which, to my knowledge, are imported to this country any more. It tore the case head off Winchester, Remington, UMC, PMC, and other domestic brands. My broken-shell extractor got a real work out until I figured that out. So, after all that, I gave the CETME rifle an "H" rating — two letters below "F," which for me means I will not ever buy one again!

So after all that, did the 308 battle rifles that were tested have fluted chambers, and did you encounter any issues with ejecting with them? I didn't read where you did. I looked into a PTR-91 earlier in the decade

GUN TESTS REPORT CARD GRADING

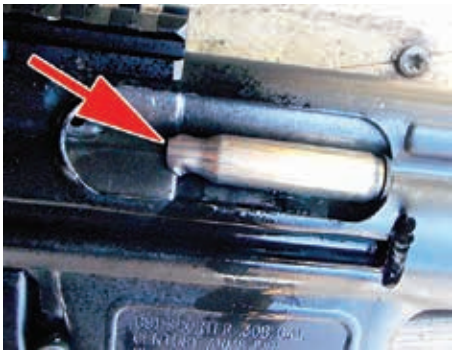
Gun Tests Grade: A
A gun with this rating functions perfectly, shoots accurately, and exhibits comfortable, easy use for its owner. We may prefer one gun over others based on its unusual accuracy, superior performance, unusual features, or nice cosmetics. We recognize such a gun for these traits without regard to its cost.

Gun Tests Grade: B
We give this ranking to a gun that functions appropriately for its category, but which might not do as well in major areas as an **A**-ranked gun.

Gun Tests Grade: C
We may have reservations about some aspect of a gun's performance or pricing. We express those reservations so the reader can balance our concerns with his or her needs.

Gun Tests Grade: D
Some aspect of a gun's performance — in particular, safety, function, or accuracy — doesn't meet our standards and isn't easily resolved.

Gun Tests Grade: F
Some aspect of a gun's performance is dangerous, inappropriate for the category, or is likely to fail.



and the rep with JLD told me that the PTR-91 had a partially fluted chamber. With all that said, I feel like I may now consider buying a PTR-91 based on your review! Thanks for writing a great gun testing magazine! **— Mike**

Hey Mike: On page 21 of the June issue, first paragraph below the PTR subhead, the text reads, "The PTR-91 and the C91 use the characteristic fluted chamber that helps to dispel pressure and allow easier extraction of the fired case." And then on page 24, Bob Campbell supplied the accompanying image and caption, which read, "In this malfunction in the C91, this case spun backwards and was caught by the bolt. Note the characteristic gas-blowby markings on the cartridge case from the fluted chamber." — tw

Re Model Numbers in Names

In GUN TESTS, what do the numbers in the firearms names mean? For example, from the May 2015 magazine, page 18, Beretta A400Xplore Action has this in its name: "J40AA88." What does J40AA88 signify? And then, also from the May issue, LWRCI M6A2 Piston Carbine M6A2R6B16. What does M6A2R6B16 signify? If I wanted to purchase a firearm that was reviewed, could I just tell the dealer the model number? — Oscar

Hey Oscar: In both cases you cite, the alphanumeric code after the manufacturer's name (e.g., LWRCI) and series designation (e.g., M6A2) is the manufacturer model number. So, the LWRCI M6A2 Piston Carbine M6A2R6B16 is an exact, specific gun. In this example, there are several other M6A2s that LWRCI makes that are slightly different configurations. The M6A2R6B16 is a specific gun, with certain specifications, that we tested. Other M6A2 models can have different handguards, buttstocks, colors, triggers, sight packages, and so on. So, for instance, when I put the name and model number into a browser search, the first entry that comes back is for ImpactGuns.com, which has the firearm listed for $2,250.29. That is the model we tested. If you're interested in our specific test gun, it's listed for sale on GunBroker.com in Auction No. 485590270. Or search GunBroker.com for auctions by seller "texasguncollector." — tw



KSG and UTS Tests

I am a long-time subscriber to GUN TESTS. I am requesting a comparison of the KSG vs. the UTS 12-gauge bullpup shotguns. **— Kevin**

Hey Kevin: We reviewed the KSG (pictured below) in the November 2012 issue. Our Team Said: "On the second gun, we had only one failure to feed after shooting several hundred additional rounds. Because it's a pump, it doesn't require the same level of maintenance as gas systems on the semi-autos do, and it will shoot and cycle just about





anything of any power level you stuff in it, unlike the Saiga. We didn't like that the KSG ejects spent shells straight down into your pump arm, and we learned that we preferred working it with a grip."

We reviewed the UTAS UTS-15 12-Gauge Shotgun (pictured above) in the June 2013 issue. Our Team Said: "The UTS-15 worked like a well-oiled machine. We liked the feel and the way the gun moved. Capacity was top shelf — load on Sunday, shoot well into next week. But we still have reservations. If we were choosing between a Saiga at half the cost and the UTS, just the dollars would give the Russian a win. Also, this is a fairly new design, and our recent experience with the prototype KSG and a 2nd-Gen SIG Sauer 556R, or any other new design on the market, would make us pause. If you have already purchased a UTS-15, it appears that UTAS is performing warranty work on guns that are having problems under the one-year warranty. So, our recommendation is to wait this one out and let the non-GUN TESTS readers be the beta testers on the UTS-15." — tw

Re "Firing Line" June 2015

I am writing in response to Woody's Firing Line post in last month's issue: "Air Rifle or Suppressed?" I am in a similar boat, as I am surrounded by evil varmints and neighbors (some of whom aren't as smart as horses, but we won't go there). I have gone the whole gamut in regards to varmint control. I am 50, somewhat nearsighted, with my eyes not getting any better with age. I would like to make some suggestions for Woody,

which I think may help him out.

I wouldn't recommend a suppressed 22 LR rifle, for a variety of reasons. Not that I have anything against them — I have a number of them myself. But I do think for what you're trying to accomplish, there are better choices. Never mind the fact that 22 LR ammunition is apparently made of Unobtanium of late, and a suppressor (silencer) is expensive and requires a $200 tax stamp. Interestingly, an integral suppressor on an airgun does not require a tax stamp. I tried a Crosman 177-caliber air rifle, but since the pellet broke the sound barrier, the dang thing was as loud as a 22 LR! So, it would be wise to be sure the pellet is rated below 1,000 fps from an airgun you're considering.



I think you should seriously look at a Walther LGU Air Rifle or the Air Arms TX200 MkIII pellet rifle. Also, I personally have, use, and love a 22-caliber Air Arms TX200 MkII (pictured above, photo by AirgunDepot.com). Both rifles are subsonic and have integral suppressors and are quiet.

Another thing I would suggest is that you use lead-free pellets, such as from Haendler & Natermann. They're non-toxic, which is a good thing when you're shooting around horses, and any time there's a chance other critters may eat any kill you may not be able to recover and properly dispose of. I use the lead-free Haendler & Natermann pellets in my TX200 MkII, and they shoot great. But with that, keep in mind that lead-free pellets are lighter than lead pellets, so they'll be faster. In my 22-caliber TX200 MkII, the Barracuda Green pellets are still subsonic. I'm not sure about the 177-caliber version. So if your rifle is already rated to flirt with the sound barrier, you may want to either stick with lead, or choose a different rifle or caliber of rifle.

I hope this helps! **— Colin**

Thank you, Colin. Great advice. The Air Arms TX200 Mk III is a field-target underlever-style spring-piston-operated air rifle with a Lothar Walther barrel. Action is a sliding breech. It doesn't ship with open sights, but it has 11mm dovetail grooves for optics. The beech Monte Carlo stock has a raised right-hand cheekpiece, and the forearm and pistol grip are checkered. Other features include a two-stage adjustable match trigger. It usually sells for around $630. — tw

Re "Three Trail Companions We Like," May 2015

Loved the article about the Mora knife; bought four and I love them. However, no matter how I try to find the Scow sheath, no luck. Neither Scow or Last Ditch Leather Works' website is working. Any suggestions on how to get in touch with Mr. Scow?

— B Miller

Mr. Miller, Duane Scow does not have a website. He has only an email address, which we published. Contact Duane at lastditchleatherworks@aol.com. Duane said he now has a steady list of 200 orders for this sheath. He had 30 requests the first day my story appeared. Gun Tests *spreads the word. — Ray Ordorica*



Print Subscribers: How to Get Web Access to the Archives

Setting up free electronic access to our website allows you to search the **Gun Tests** archives for specific guns — and you get access to the current issue on the web before it hits your mailbox. Also, you can check the status of your subscription account, update your mailing or email address, pay your subscription invoice or renew your subscription, and communicate with the editorial staff. Current subscribers can begin activating free online access by typing this into your browser: **Gun-Tests.com/activate.**

To create your web-access login, you provide your first and last name, the ZIP/Postal Code, and your account number. That's the first 11 digits found on your magazine's mailing label just above your name. If you can't get the account activated, contact us at **Customer_Service@GunTests.info**, or call 1-800-829-9084.

There are two ways to find guns we've reviewed. The Compare Guns feature (top left corner of the page under the logo) allows you to input several descriptors and narrow the search results. Or you can use the Search function. If you search for a common item, such as "22 LR," you'll get tons of references. Basically, the search function finds every instance of the searched-for topic and lists the accompanying articles the topic appeared in. The more specific and unique the reference, the better the search. We do our best to list the catalog numbers for guns we've tested, so that's usually a good place to start. There's also an "Advanced Search" area to help you narrow the results.

We welcome mail from our readers. To send us comments or questions about previous articles in the magazine, email us at: **GunTestsEditor@icloud.com.** *If you'll include the month and year of the article you're writing about, it's a big help. Also, please include your name, address, and phone number. We won't publish your personal information other than your name, but we may need to contact you about material in your letter.* **GT**

More Tactical Pump Shotguns: Tristar and Mossberg Compete

Once again sacrificing our shoulders to the God of Shock, we measured the performance of two pumpguns and gave a clear win to the Tristar TEC-12 over the Mossberg Model 590 Magpul.

There are times when a potential owner of a reliable self-defense shotgun might want to spend a little more money on upgraded features for the sake of comfort or convenience, so we ventured into the world of extra bells and whistles in this test of two higher-end tactical self-defense shotguns. This is the second part of a four-pack of pumps our team put through their paces. For this test we picked a pair of self-defense firearms in the $700 to $775 MSRP range to see how they would stand up to a thorough examination on the shooting range. The 12-gauge shotguns selected for this review were a Mossberg Model 590 Magpul with an adjustable stock listing for $773, and a Tristar TEC-12 capable of either pump action or semiautomatic fire that retails for $689. Both retail for around $500.

While budget is a key factor in the minds of many shooters as they ponder the purchase of a self defense shotgun, there are times when added features are too good to pass up despite the added cost.

Firearm manufacturers are well known for tossing in a few bells and whistles to make their product a little more attractive. The hope is that buyers will be willing to shell out a few dollars more for a feature that will make their new firearm more accurate, more comfortable, more attractive, etc. Sometimes the added features prove to be worth the additional cost, and sometimes the bell or whistle is just eye candy.

As noted in last month's review of two pump actions, self-defense shotguns fall into a category of rarely used but necessarily reliable firearms. When they are put into play, the shooter should be able to touch off consistently accurate, perfectly functioning rounds in what might be a life or death situation. There is a wide selection of these types of firearms carrying a price tag of $500 or less, most of which are so similar that distinctions in appearance and handling are minor at best.

In this match-up we selected a pair of what we would consider higher-priced shooting tools: The Mossberg Model 590 Magpul was outfitted with a fully adjustable stock and extended magazine retailing for $773. The Tristar TEC-12 was capable of either pump action or semiautomatic shooting, and it is available for $689.

Using the same type of shotgun ammunition that was fired through last month's shotguns, our test rounds included Rio Royal Buck 2.75-inch loads moving nine pellets of No. 00 buckshot at an average muzzle velocity



Recoil from the slug, buckshot, and No. 6 shotshells used in the Tristar TEC-12, being fired here in a five-shot drill, was less severe in the shotgun in both its pump-action and semiautomatic modes. We attributed some of that to the ported choke tube.



The empty Mossberg Model 590 pumpgun weighed right at 7.5 pounds empty. Our shooters said that heft was acceptable, although the shotgun was muzzle heavy even when empty, they said. Contributing Editor Ralph Wininghamreported that the textured pistol grip and short, ridged forearm did not provide as good or as comfortable a hold as we would have liked.

of 1345 fps, and Winchester Reduced Recoil Winlite 2.75-inch loads pushing 0.9-ounce 400-grain sabot slugs with an average muzzle velocity of 1450 fps. Our function-fire and cycling rounds were Remington ShurShot Heavy Dove 2.75-inch loads with 1⅛ ounces of No. 6 shot moving at an average of 1255 fps.

For shots in close-defense simulations, we fired test loads at Birchwood Casey Eze-Scorer 23-inch by 35-inch Bad Guy targets and the identically sized Targets Online paper images of potential threats. For slug shots at 25 yards, we used Champion VisiColor Zombies 12-inch by 18-inch Slasher Tusks targets. Only head shots were counted as acceptable results with the slug ammo because that is what Hollywood tells everyone is the way to dispatch a zombie. Here are our findings:

Mossberg Model 590 No. 50669 Magpul Pump-Action 12 Gauge, $773

While expecting a little better quality and performance because of the higher price tag and the fully adjustable stock, we have to admit we were disappointed in just about every aspect of this shotgun. In particular, shoulder shock moved into our home with the first round touched off in the Model 590 and stayed as an unwelcome guest throughout the testing.

The 39.25-inch-long pump had a short, angled grip on the stock that was adjustable for both length of pull and comb height. It also featured an 8-round magazine for increased firepower. After firing several rounds through the pump, none of our test team members had any interest in trying to complete a rapid-fire drill of all nine rounds.

The heft of the Model 590 was considered acceptable, although the shotgun was muzzle heavy even when unloaded, we thought. The empty shotgun weighed right at 7.5 pounds. However, the textured pistol grip and short, ridged forearm did not provide as good or as comfortable a hold as we would have liked.

MOSSBERG MODEL 590 MAGPUL NO. 50669 PUMP 12 GAUGE, $773

GUN TESTS GRADE: C-

What we considered excessive recoil and poor accuracy factored more in our ranking than the nice touch of an adjustable stock and extended magazine on this Mossberg. The nice trigger pull of 5.5 pounds, and the safety on top of the receiver were about the only other favorable features of this firearm, in our opinion.



Action Type	Pump	Buttstock Drop @ Heel	Adjustable
Chamber Size	2.75 to 3 in.	Forearm	Black Synthetic
Overall Length	39.25 in.	Forearm Length	8 in.
Capacity	8+1	Front Sight	Ramp
Weight (Unloaded)	7.5 lbs.	Rear Sight	Adjustable Ghost Ring
Barrel Length	20 in.	Trigger Pull Weight	5.5 lbs.
Barrel	Matte Black Steel	Warranty	Unwritten
Receiver	Matte Black Aluminum Alloy	Telephone	(800) 363-3555
Choke	Cylinder, Fixed	Website	Mossberg.com
Buttstock	Black Synthetic Magpul	Made In	U.S.A.
Buttstock Length of Pull	12.25 to 14.25 in.		
Buttstock Drop @ Comb	Adjustable		



We considered this adjustable stock impressive, but it didn't help the Mossberg's hard-kicking, inaccurate nature.



Easy to access, the safety on top of the receiver was the quickest and easiest to put into play, our shooters said.



Too short, with uncomfortable raised ridges, this Mossberg forearm did not provide a firm, steady hold on the shotgun. Too bad, because that could have lessened the gun's very sharp recoil with all test loads.



The red ramp front sight, combined with an adjustable Ghost Ring rear sight, didn't help us shoot the Mossberg as well as the other close-quarter shotgun in this test.

During the accuracy testing on the zombie hog target set 25 yards downrange, we found that alignment with the adjustable Ghost Ring rear sight and the red ramp sight during the rapid-fire, five-shot group of sabot slugs was very poor. Add in the factor of what we would consider extreme recoil, and we were not surprised when the five-shot group measured 9 inches across and was well below the kill zone. There were no shots in the head and only one that would have resulted in a chest wound.

The short length — just 8 inches — and shape of the forearm made the Mossberg hard to hold during rapid-fire drills, our team said. Although recognizing that the Mossberg did not have a full-length pistol grip like the other shotgun in the test, we were still disappointed in the way the shotgun handled. We thought this despite the fully adjustable stock, which allows a shooter to customize the length of pull and the comb height, an impressive feature rarely found on a self-defense firearm. However, the stock seemed to do little to tame recoil.

Similar unsatisfactory accuracy results were achieved during the close defense situation, wherein three potential threats at less than 7 yards were handled with five shots of No. 00 buckshot. The run with the Mossberg took 5.72 seconds, which was a full second longer than that of the Tristar in either its pump-action or semiautomatic mode. The Mossberg's first shot was touched off at 1.2 seconds; then 1.82 seconds for the second shot on the same target; 2.64 seconds for the third shot, this one at the second threat; 5.05 seconds for the fourth shot after moving to the other side of a barricade, and 5.72 seconds for the final shot, the latter two at the third target. Videos of these drills will be available soon on the magazine's YouTube channel.

In addition to the handling problems mentioned earlier that contributed to the longer drill time, one of the nine No. 00 pellets on the second target went wide to the left. By missing the body of the second potential threat,

TRISTAR TEC-12 NO. 25120 PUMP/AUTO 12 GAUGE, $689

GUN TESTS GRADE: A-

Performing well in both the pump-action and semi-automatic modes by producing tight, accurate groups with slugs and No. 00 buckshot, we also were impressed with the shotgun's heft and balance. Felt recoil was softer than with any other recently tested tactical shotgun — a plus for anyone who wants to avoid shoulder shock.



Action Type	Pump/Semi-Auto	Buttstock Drop @ Comb	1.0 in.
Chamber Size	2.75 to 3 in.	Buttstock Drop @ Heel	1.25 in.
Overall Length	39.5 in.	Forearm	Black Polymer
Capacity	5+1	Forearm Length	7.0 in.
Weight (Unloaded)	7.5 lbs.	Front Sight	Raised Front Bridge Fiber Optic
Barrel Length	20 in.	Rear Sight	Adjustable Ghost Ring
Barrel	Matte Black Steel	Trigger Pull Weight	9.0 lbs.
Receiver	Matte Black Steel	Warranty	5-Year Limited
Choke	Extended Ported Cylinder Tube	Telephone	(816) 421-1400
Buttstock	Black Polymer with Pistol Grip	Website	TristarArms.com
Buttstock Length of Pull	14.75 in.	Made In	Turkey



A quick twist of this ring at the end of the magazine allowed a shooter to easily switch back and forth from pump action to semiautomatic mode—a plus.



Note the extended bolt (arrow) that is required to work the action when the Tristar is in semiautomatic mode. The safety and action release for the pump-action mode are both on the front of the trigger guard.



A rubberized, full pistol grip felt good and allowed for steady control of the Tristar during rapid-fire drills.



The extended and ported choke (arrow) may have been a factor in the reduced felt recoil we felt when firing the Tristar. Also, note how the red-optic-bar front sight stands out, allowing for easy target acquisition. We liked it better than the Mossberg's.



The Tristar TEC-12, being fired above, notched a clear win over the Mossberg 590 Magpul in the accuracy. Here, it is producing an excellent 3-inch group of five slug hits on a zombie hog target at 25 yards.

that shot could have easily carried on to strike a bystander or do other unnecessary damage downrange. In addition to the errant pellet, the other buckshot loads struck low on the center mass on the targets, with an average pattern stretching about 9 inches across.

While the Remington No. 6 shotshells used in function-fire and speed-fire testing cycled in an acceptable manner, the shoulder shock problem continued to make firing the Mossberg an uncomfortable experience. On the plus side of the Mossberg review, we were pleased with the 5.5-pound trigger pull that made touching off rounds a little easier. Also, we liked the safety lever on top of the receiver that provided easy access. The extended magazine that allowed the shooter to fire up to nine rounds, should that ever be necessary in either practice or real-life situations, was considered a plus for the Mossberg.

Our Team Said: This Mossberg 590 Magpul was found to be hard to handle and control, particularly since it kicked like a mule — recoil was substantially greater than with any other tactical pump we handled. Accuracy with both the slugs at 25 yards and with the No. 00 buckshot in the self-defense drill was disappointing, our shooters said, and the sights were not as easily aligned as with the other models tested this month and last.

Tristar TEC-12 No. 25120 Pump/Auto 12 Gauge, $689

The ability to fire in either pump-action or semiautomatic mode was the most obvious added feature on this shotgun. We found that transforming the Tristar from a pump action to a semiautomatic was surprisingly simple. A twist of the adjustment ring near the end of the magazine is all that is required for the switch.

Even better, in addition to having quick runs and no functioning problems in either mode with the Tristar, we found the shotgun handled better with less recoil, even in rapid-fire drills.

Also, our shooters noticed that recoil when firing in either mode was also lighter than with any of the other firearms, even with the Tristar weighing in at 7.5 pounds, the same weight as the Mossberg.

In the scenario involving three close-up potential threats, the accuracy of the Tristar impressed our crew. Both runs, one in the pump-action mode and one as a semiautomatic, were quick and solid with excellent center mass hits.

As a pump action, the Tristar run was completed in 4.84 seconds, with the first shot fired at 0.94 seconds; the second at the same target at 1.89 seconds; the third shot on another target at 2.45 seconds; the fourth shot on a third target at 4.24 seconds; and the final shot at the third target stopped the clock at 4.84 seconds.

Switching to semiautomatic mode, the Tristar run was cut down to 4.42 seconds total. The first shot was fired at 1.14 seconds; the second was timed at 1.50 seconds; the third at 2.12 seconds; the fourth at 4.16 seconds; and the final shot was 4.42 seconds.

Although its design and appearance were nearly identical to the other full-length pistol-grip shotguns we tested, the heft and balance were quite nice. Even with a relatively short forearm, measuring just 7 inches long, we liked the feel of the grooved slide action and the rubberized pistol grip. Both provided a secure, firm hold even during the rapid-fire drills.

Measuring just a quarter-inch longer than the Mossberg with an overall length of 39.5 inches, the balance of the shotgun was very nice, we thought. When the weight of a shotgun is balanced, the handling ability is enhanced and moving onto a target is much easier.

On the trip to the range, we found that the adjustable Ghost Ring rear sight and red-bar front sight bracketed by high-rise side plates were easy to align on target. That resulted in exceptional performance on a 25-yard zombie hog target. Firing in pump-action mode, we put five slug shots clustered into a 3-inch group — all in the middle of the kill zone. This was the best group achieved with any of the self-defense firearms in the four-pack test.

We were a little concerned about the 9-pound trigger pull, about 4 pounds heavier than what we prefer in a self-defense shotgun. However, the heavy trigger did not appear to be a detriment to putting quick and effective shots on targets.

Elsewhere, the extended and ported choke tube may have been a factor in our team's assessment of the Tristar's reduced recoil. Porting is designed to expel gases from the fired rounds to each side rather than allow all the push to rock back on the shooter's shoulder. This is another feature we appreciated on the Tristar.

Our Team Said: Offering comparatively light recoil with the heavy loads and good accuracy, the Tristar TEC-12 excelled in our testing. We were pleased with the comfort and handling and the added feature of being able to switch from pump action to semi-automatic quickly and easily.

The only downside we could find was with the trigger pull, and we would recommend getting it adjusted to make the 9-pound tug a little lighter.

When all four tactical pump-action shotguns were tossed into the mix, including the CZ-USA and Weatherby models tested last month, the Tristar TEC-12 rose to the top of our rankings.

Written and photographed by Ralph Wininghamm, using evaluations from Gun Tests *team testers.* **GT**

338 Win. Mag. Bolt-Action Duo: Henriksen Versus Winchester

Custom gunsmith Iver Henriksen was Elmer Keith's favorite firearms craftsman; here, we take an in-depth look at one of his rifles alongside a reworked Model 70 Winchester.

The gunny student who knows anything at all about Elmer Keith will probably know many of Keith's guns were sold off recently by a well-known auction house in Maine. Apparently, the auction was a huge success, and some of the offerings proved to be bargains. A brace of like-new Ruger No. 1 rifles sold for less than their combined new MSRP prices today, and a fabulous engraved and gold-inlaid Model 70 made by Frank Pachmayr for Elmer Keith sold for less than some unadorned custom rifles made by some makers on today's market.

Among the auctioned rifles were several by Keith's favorite gunsmith, Iver Henriksen (1910-1987). In fact, our Senior Technical Editor made a solid absentee bid for one of the Henriksen-Keith rifles. Alas, the rifle sold for three times that bid. From this auction, we discovered that if a rifle has Henriksen's name on it, especially if it was owned by Keith, it will have a value of about $5000; but of course that's not guaranteed. So we thought we had lost out on the chance to examine and test a Henriksen rifle. As luck had it, however, a friend of the magazine owned one of Henriksen's rifles, but didn't know it. We were talking with him one day and he said he had a rifle made by some Montana gunsmith. We asked if it could possibly be a Henriksen rifle, and he said he didn't know. When we got a chance to examine it, we saw the Henriksen name written around the base of the barrel, and explained to our friend what he had.

He graciously allowed us to borrow it for this report. He later found out the design and layout of this particular rifle in all its aspects had in fact been suggested by Mr. Keith to its previous owner. The rifle is a custom FN Mauser 98 in 338 Winchester Magnum with fabulous wood, and it is fitted with a classic Balvar 8A Bausch & Lomb 2.5-8X



Both of these are now excellent 338 rifles. The Winchester, left, has been modified to have a steel trigger guard and throated to accept the long-seated bullets that the Henriksen likewise accepts.



Below: This is how Henriksen put his name onto the barrels of his rifles. He used topnotch barrels and selected the best of them for his work.

scope with the windage and elevation adjustments in the bases.

We chose to test it against a modern Winchester Model 70 in the same caliber, the rifle having also just been fitted with one of the old B&L Balvar 8A 2.5-8X scopes in adjustable-base mounts. We tested this rifle in the December 2012 edition of Gun Tests where it got high marks (A-). The Model 70, now owned by our Senior Technical Editor, got some serious upgrading, which put it into the realm of the Henriksen for its ability to handle long-seated bullets. Here's what we found.

Iver Henriksen Mauser 98 338 Winchester Magnum, ~$5000

The rifle had no iron sights, which we regretted, though the B&L scope setup allowed, in years past, for an iron-sight accessory to be installed in place of the scope, if field conditions warranted it. The action was a Belgian FN, with a side safety similar to that found on Belgian Browning rifles. The left side of the rust-blued action had the FN logo followed by ACTION – MADE IN BELGIUM. The tightly and fully bedded heavy 26-inch barrel had 338 WIN MAG on its left side, and just in front of the action ring was Henriksen's name rolled into the barrel's rear end. The right side of the action was drilled and tapped for a receiver sight, and the holes were filled with tiny screws. The bolt and extractor were rather garishly jeweled, the bolt polished bright, and the bottom of the bolt flattened and nicely checkered. The floorplate was hinged, and the trigger guard was contoured so it resembled some of the English rifle treatments we've seen. Although it utilized a standard-length follower, the magazine box was a full 3.6 inches long. That of the unaltered Winchester M70 was about 3.4 inches long. This means the Henriksen rifle could utilize 0.2 inch longer overall cartridge lengths in the standard 338 case, which is a significant amount of extra space, and the rifle was throated to take advantage of this. The Henriksen barrel spins the bullets one turn in 12 inches. The metal was all rust blued, and was in superb condition.

The oil-finished stock wood was a fine piece of figured walnut, and its checkering was nicely done. Of about 20 lines per inch, it fully wrapped the forend in a borderless point pattern and had well-formed and generous patches on each side of the pistol grip. The bottom of the pistol grip had a checkered steel plate protecting it. The butt had a black Pachmayr pad that was now on the stiff side. Henriksen passed away in 1987, so that pad had been on there a while. It seemed to have enough life left in it that we were not worried about recoil, and the rifle's empty weight of 9.7 pounds also helped us

RANGE DATA

Winchester Super X 225-gr. Soft Point	**Henriksen Custom Mauser**	**Winchester Custom Model 70**
Average Velocity	2685 fps	2665 fps
Muzzle Energy	3598 ft.-lbs.	3545 ft.-lbs.
Average Group Size	1.4 in.	1.2 in.
Remington 250-gr. Core-Lokt	**Henriksen Custom Mauser**	**Winchester Custom Model 70**
Average Velocity	2570 fps	2580 fps
Muzzle Energy	3663 ft.-lbs.	3691 ft.-lbs.
Average Group Size	1.3 in.	1.5 in.
Nosler Handload 300-gr. Accubond	**Henriksen Custom Mauser**	**Winchester Custom Model 70**
Average Velocity	2240 fps	2295 fps
Muzzle Energy	3339 ft.-lbs.	3505 ft.-lbs.
Average Group Size	1.1 in.	1.1 in.

Average velocity was recorded at 10 feet using an Oehler 35P chronograph with proof channel. Accuracy figures are the results of three-shot groups fired at 100 yards from a bench rest.



Just in front of the scope are the old and new trigger-guard and floorplate assemblies for the Winchester. The one on the left is the all-steel part that also fits the 375 H&H Model 70, along with a longer follower and new spring. We got an extra magazine box, and had to modify the ejector. The bolt and the rest of the rifle remained the same as before, but we throated the barrel to accept longer bullets. That box in the background holds a Brownells screwdriver and bits.

to not worry. The stock had Keith's "Monte-Carlo" design that keeps the kick off the face, and the cheekpiece was generous in size. The stock also had some cast-off, so we knew this rifle would not hurt us even if it had been fitted with a steel butt plate. The stock had two quick-detachable sling-swivel attach points, and the forend had an ebony tip. The forend was also affixed to the barrel with a third screw, about midway between the front action screw and the forward sling swivel lug. The bolt was slick and smooth, feeding was the same, and the trigger pull was excellent.

On the bench at the range, as expected, the weight of this rifle combined with the excellent stock design kept the kick to a minimum, though it was still not all that much fun with our heavy-bullet loads. With 225-grain Winchester and 250-grain Remington factory loads, the rifle put its shots into less than 1.5 inches reliably. We then tried with a modest load of the 300-grain Nosler Accubond loaded with Reloder 22 powder, and after the first shot, which landed an inch away, we got a group of just 0.4 inch, all shots touching. We repeated this, and each time it seemed the rifle would shoot the first shot from a cold barrel an inch or so from the next three, which would land within half an inch of each other. These bullets were seated out to nearly touch the rifling. Fired cases showed rounded primers, so we were nowhere near the rifle's potential. Even with the odd grouping, the rifle did quite well enough, we thought, to make good use of the 300-grain Accubond bullets. Our only problem with this rifle was in dragging it out of our hands to give it back to its owner.

Many online sources suggest a 1-in-10 twist, or faster, for this bullet, though usually at higher velocity than we were pushing it. In light of that, we were surprised the rifle worked so well with its 1:12 twist with this long bullet.

Our Team Said: All things considered, we conclude that if you can acquire a Henriksen rifle for most any price, you'll be mighty pleased. In fact, you ought not to ever regret

IVER HENRIKSEN MAUSER 98
338 WINCHESTER MAGNUM, ~$5000
GUN TESTS GRADE: A

Classic lines in the Elmer Keith style, with Keith's stock design, the Henriksen 338 was one of the more impressive rifles we've tested. It was not a lightweight, and that combined with its stock design gave us lots of comfort in our shooting tests.



Action Type	Bolt	Magazine Capacity	3 Rounds
Overall Length	46.6 in.	Magazine Type	Box
Barrel Length	26.0 in.	Stock	Fancy Walnut
Overall Height	8.2 in.	Stock Length of Pull	13.7 in.
Weight Unloaded	9.7 lb.	Trigger Pull Weight	2.8 lbs.
Weight Loaded	10.0 lbs.	Warranty	NA
Sight Radius	NA	Telephone	NA
Action	Rust-Blued Steel	Website	NA
Barrel	Rust-Blued Steel	Made In	USA



The strong angle of the pistol grip (arrow) let our shooters pull the rifle firmly into our shoulders to reduce felt recoil.



The stock had castoff and a comfortable cheekpiece. The buttpad was old but was still soft enough. The bedding was tight to the tip of the ebony forend. The pistol grip was capped with a checkered steel plate to protect the wood.



The deep color of the stock wood was lovely to behold. Note the safety lever at the right rear of the stock. This is a Belgian 98 action.



The Henriksen had an excellent trigger and superb checkering. The trigger guard was nicely contoured. Workmanship was outstanding throughout. We loved the classic lines.

it. This one showed us what a fine custom rifle ought to look like and how it ought to perform. We believe Mr. Keith would have been quite happy with this one.

Winchester Model 70 Alaskan 338 Winchester Magnum, $1340

Our Tech Editor liked this rifle enough that he bought it, but he decided he didn't like the aluminum trigger guard. Steel is stronger, holds its finish better, and resists scratches better. He also wanted to extend the magazine and throat the rifle so it would accept bullets seated out longer than normal. This is something Elmer Keith had discussed in his writing. Keith had recommended Henriksen to our test rifle's former owner, so it was no surprise the Henriksen rifle had had this treatment done to it. Keith liked long, heavy bullets, preferring the old heavy-jacket 275-grain Speer bullet in this caliber. When we tested this Model 70, we also had a new Model 70 on hand in 375 H&H Magnum, and our Technical Editor pointed out that the floorplate of the 375, which was steel, would fit the 338 with no alterations of the stock. Accordingly, he arranged to acquire a steel trigger guard/floorplate, longer follower and new follower spring, along with a second magazine box, to work into one that would match the 375's for length. These parts can sometimes be purchased from Browning, at a total cost of around $300. With the cost of the gunsmithing and bedding yet to come, the price for this setup goes up to about $1800.

As noted, the new steel trigger guard slipped right into the 338's stock with no alterations needed. By removing the rear spacer from the magazine box, the box was no longer joined at its rear end. However, the fit in the wood of the stock was snug enough that nothing else was needed. The stock held the magazine together perfectly. We were able to alter the ejector by softening it, drilling a new hole, and reshaping the metal to work perfectly with the longer cartridges. An easier solution would have been to get a 375 ejector. We had been concerned that ejection would be a problem. Early rifles had the rear action ring shortened to give more room for the outgoing spent cases, but ejection has not been any sort of problem as long as we've worked on this rifle.

There remained the throating of the barrel so it would accept the longer-seated bullets. Our main intention for this rifle was to use handloads featuring long, heavy bullets like the beautiful 300-grain Nosler Accubond boattail, which is

WINCHESTER MODIFIED MODEL 70
338 WINCHESTER MAGNUM, $1390
GUN TESTS GRADE: A

We tested the base rifle in December 2012, giving it an A- grade at the time. Since then, it's been upgraded with steel parts from the 375 H&H Model 70, throated to accept long handloads, and will soon get full-length steel bedding from Brownells.



Action Type	Bolt	Stock	Walnut
Overall Length	45.5 in.	Stock Length of Pull	13.6 in.
Barrel Length	25.0 in.	Trigger Pull Weight	4.4 lbs.
Overall Height	8.1 in.	Warranty	*None Written
Weight Unloaded	9.0 lbs.	Telephone	(800) 322-4626
Weight Loaded	9.2 lbs.	Website	WinchesterGuns.com
Sight Radius	18.8 in.	Made In	USA
Action	Blued Steel		
Barrel	Blued Steel		
Magazine Capacity	3 Rounds		
Magazine Type	Fixed Box		

*Note that our modifications to the throat would nullify any warranty.



We chiseled out the rear portion of the magazine box, which left the back of it unjoined. However, the fit in the wood is so snug that no other work was needed.



The new steel trigger guard (arrow) slipped right into the 338's stock with no alterations. The idea came from a tested Model 70 375 H&H Magnum Ray Ordorica had on hand.



A Clymer throating reamer allowed us to throat the barrel longer, which required another 0.230 inch in the magazine box to accept longer-loaded rounds.

1.75 inches long. Seating that long bullet out would give more room in the cartridge for powder, which of course applies to all bullet weights in this cartridge, but works best with the heavier bullets. The lighter bullets would not gain much if anything from this extra magazine length.

We borrowed a Clymer throating reamer from gunsmith Don Fisher and put it to use on the 338 Model 70. After some problems associated with the reamer's mount, we were able to throat the barrel the required extra length, about a quarter inch. When we removed the magazine-box filler, it gave us 0.230 inch more length in the box. We went a little deeper than that because some freebore had done wonders for a similar rifle in the past. The Winchester has a twist of 1 turn in 10 inches, which we thought would work well with the longer bullets.

The next step was to find, buy, and mount a Balvar 8A scope, along with the correct bases. After some lengthy research and a diligent search, we found what we needed on eBay. More on the scope later. With the scope mounted, we shot the modified rifle with our test load, using Reloder 22 powder and the long Nosler bullet. To our chagrin, the bullet didn't shoot worth a whoop, at first. We got groups from 3.5 to 5 inches at 100 yards. Could the problem have been with the scope? We wondered. We made a list of possible problems, but before we started digging into the rifle's bedding, we phoned Doc J. Lillie, a friend of the magazine who had extensive experience with the older B&L scopes, specifically the 8A that we had on our Winchester. The good doctor advised us that the little four-legged star nut is supposed to be screwed by hand all the way up, pressing the spring leaf firmly against the base of the scope-ring mount. Not knowing any better, and not having the original instructions, we had made the nut snug, not tight. We promptly and fully tightened the star nut and went back to the range. With no further alterations to the rifle, we fired groups with our 300-grain load of around an inch, to our great joy. Our next step with the rifle will be to fully bed it to the muzzle with Brownells Steel Bed, adding some cross screws as needed to prevent the stock from ever splitting.

We are very happy with the modified Winchester. It still handles factory loads perfectly, with accuracy as good as it was before we went at it. We noted a slight drop of about 35 fps in the velocity of the factory Winchester 225-grain load from our previous test, but we believe the gain in potential for the heavier bullets far outweighs that loss. The road is now open for experimentation with long, heavy bullets, which is what we had in mind for this rifle.

Our Team Said: This alteration might not be for everyone, but we are pleased with the new setup, not the least of which gives us all-steel metalwork in this rifle. We originally gave it an A- for the aluminum parts, but now in all steel, with extended box and throated, it's a Grade A rifle.



This B&L Balvar 8A scope and its external mounts added some weight to the rifles. This is a two-piece base. Note the curved leaf spring and the tight star nut (arrow), which made all the difference in its accuracy. We didn't know it must be as tight as your fingers can get it. That brought our groups from 5 inches down to 1. The adjustments are easily made and lock solidly with huge screws. If the scope is banged, it springs back into perfect zero. The 40mm objective lens gathers lots of light.



The eyepiece of the old B&L Balvar A scope was serrated for easy power changing. Both the new Winchester and old Mauser were fitted with Balvar A 2.5-8X scopes, which in our empirical tests were at least as good as anything made today. In the early 1950s, they sold for $100, and the mounts were extra. Clarity was superb, and we liked the tapered reticle.

Bausch & Lomb Balvar 8A Scope and Mounts, from $100-$250

Many years ago, during the middle 1950s, B&L offered this scope for the then-lofty price of $100. That would be about $875 today. Mounts were extra at $25. The Balvar 8A was, and may still be, without peer. These fine scopes were all made entirely in the USA with some of the finest optics in the world. There is nothing in the scope that can be easily broken nor rearranged. The company actually drove nails with one as an advertising demonstration. Deep-water immersion was another grueling test to which this riflescope was submitted in the B&L ads. However, many folk, like some of us at Gun Tests, were put off by the adjustments in the bases. We recently decided to learn what we have missed all these years, acquired two Balvar 8A scopes in excellent condition, and stuck one on the test Winchester Model 70.

To adjust the power, the earlier Balvar 8 had a ring you gripped and twisted, but for the 8A you grab the entire ocular end of the scope, which is serrated, to change the power. This gives a good grip when scope and hands are cold. There were also 2.5X

Baltur, 4X Balfor, 6X Balsix, and 8X Baleight fixed versions, an early 2.5-4X, and then came the 2.5-5X Balvar 5 and 2.5-8X Balvar 8. Everyone seemed to want the big variable 8 and especially the 8A. The objective is 40mm. Eye relief is very good for hard-kicking rifles like our 338s, and the eye relief does not change with changing power. After the 8A came the Balvar 8B, also called the Trophy, which had internal adjustments. That scope was made in Japan. With the Balvar 8A, there are no adjustments within the scope other than the ability to focus it for one's eyes, in the conventional manner, and of course the power-changing system. The scope presents only a straight tube, which was machined from a solid billet of aluminum. The reticle is formed into the glass, has a taper to it, and doesn't change size with changes in power. Neither is there a change in focus, eye relief, nor in point of impact with changes in power. In practice, we found the tapered reticle works very well. It has the features of a duplex reticle without the steps. To mount this scope you need a set of rings that grasp it in the middle, and there are several types of those. The problem today is to find a set of bases for your particular rifle. Bases for the more common rifles like Winchester Model 70s, Remingtons, and Mauser 98s should be somewhat easier to find than those for less-popular rifles. There were one-piece and two-piece bases. Our test Henriksen has a one-piece base, and the Winchester has two pieces. In addition there were two scope-attaching methods, the early plunger type and the later star-nut type. The Henriksen has the plunger; the Winchester, the star nut. As mentioned above, be sure to tighten the star nut fully, pressing the attaching leaf spring up snugly against the base of the ring mount. This is per B&L's written instructions from long ago.

One of the main selling points of this scope is that you could buy one scope and several sets of bases for your different rifles. Changing the scope from rifle to rifle was easy, and each rifle's zero didn't change when you took off and replaced the scope. The base adjustments lock in place by large opposing screws, so they can't change. The support points, i.e., the V-blocks that hold the scope in position, are well spaced apart. If you dropped the rifle or the scope got banged, the spring-loaded mount would return it to zero every time, and the spring-type mounting also tended to reduce potential damage to the scope tube.

We found the serrated eyepiece gave excellent traction for changing the power, unlike many other scopes we've had over the years. One of our old scopes had a stud sticking out of the power ring so you could force it to turn when its guts got frozen. Another variable scope we had, long ago, had a setup similar to the Balvar. You'd grab the eyepiece and twist it to change the power. One day in the field we wanted more power, grabbed the ocular, and twisted. It was so cold the scope froze up, stuck internally, and instead of changing power the eyepiece simply unscrewed.

Our Team Said: By empirical testing we found the old B&L Balvar 8A to be superior to many high-grade modern scopes for resolution and flare prevention. The image clarity was only matched, not exceeded, by that of a very costly Leupold Mark 4 Mil-Spec 10-power scope with 30mm tube. In short, we have not found any reason to reject these old scopes in favor of any modern units. We have no intention of "upgrading" the one on our new Model 70, nor does the owner of the Henriksen rifle.

If you want one, check eBay diligently. There are some great bargains to be had, even though these scopes, rings, and bases are getting increasingly scarce.

A former excellent source of bases and mounts and a few scopes, Mr. H.E. Gibbs, apparently had a fire that destroyed all his stock, and he is no longer in business. We wish him the best, and wish you luck if you choose to get one of these older B&L scopes and use it.

Written and photographed by Ray Ordorica, using evaluations from Gun Tests *team testers.* **GT**

GUN TESTS

THE CONSUMER RESOURCE FOR THE SERIOUS SHOOTER

1. To Change Your Address

If you are moving, please attach your present mailing label to this form, and enter your new address here:

Name

Company

Street

City

State Zip

2. To Order/Renew

To order, or extend your current subscription, enter your name and address above, and check the subscription term you prefer:

__ One year: $49
__ Two years: $98
__ New subscriber
__ Renewal

These rates are good in U.S. and Canada only. For all other countries: 1 year $72 (air), 2 years $144 (air).

3. To Give a Gift Subscription

Enter your name and address above and your giftee's name and address below. The subscription rates stated above apply to gifts.

__ Send a One-Year Gift
__ Send a Two-Year Gift

Name

Street

City

State Zip

Return this coupon (or a photocopy) to:

GUN TESTS
P.O. Box 8535
Big Sandy, TX 75755-8535

We Test Two Light Snubbies in 45 ACP; One Cracks Up, Fails

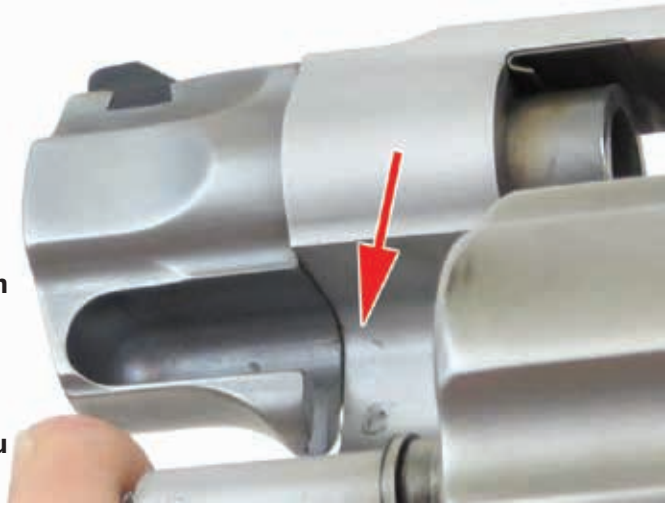
The 325PD lightweight Smith & Wesson snubnose revolver might make a good concealed-carry choice, but we think there are likely better choices. The 625-10 developed a frame crack.

Chambering 45 ACP in revolvers goes way back to the early 20th century and WWI. The U.S. military had plenty of 45 ACP ammo, but few of the then-new 1911 pistols, so the solution was to chamber Colt's and S&W's large-frame revolvers in the 45 ACP cartridge. Since then, numerous S&W revolvers, as well as revolvers from other manufacturers, have been chambered in 45 ACP. S&W used its large N-frame to build the Model 25, similar to a Model 29 except chambered in 45 ACP or 45 Colt, often called Long Colt to ensure it's not confused with Automatic Colt Pistol. In fact, the Model 625 is one of the more popular action-competition revolvers. The Governor is another Smith & Wesson revolver that shoots 45 ACP. But neither of these wheelguns are compact enough for easy carry.

Compact is a relative term when describing a S&W N-frame. The N-frame is used for the S&W Model 29 chambered in 44 Magnum and high capacity 8-shot 357 Magnum revolvers like the Model 327, 627, and others. The S&W Model 325PD and the S&W Performance Center Model 625-10 tested here both feature scandium-alloy N-frames, alloy barrel shrouds, steel barrels, and titanium cylinders to cut weight, making their heft suitable for conceal carry. As a result, we found toting these wheelguns in a holster on our hip was comfortable to do, and if they performed as shooters, we would assess them as good choices for defense. Availability is something of an issue, of course, because the S&W Model 325PD is no longer produced by S&W, and the S&W Performance Center Model 625-10 was a Lew Horton Special Edition revolver offered in 2003 and 2004. But we found two that were in LNIB (Like New In Box) condition, and we saw others for sale at various retailers and auction houses in case you're interested.



These two scandium-frame snubnose revolvers seemed to be good choices for concealed carry on the surface. Our shooters would consider carrying the S&W Model 325PD ($700-$925) on the left, but the S&W Performance Center Model 625-10 ($1200-$1400) on the right developed a cracked frame after testing, which earned it an F grade.



During our test, the S&W Performance Center Model 625-10 developed a faint crack in the frame, shown here just to the rear of the barrel shroud in the frame. Because the handgun is no longer made, Smith & Wesson replaced it with another gun. But we can't recommend you go search for one.

Moon clips are required to make these N-frames run fast. Clips for 45 ACP revolvers come in two-, three- and six-round clip configurations. We tested these N-frames with three- and six-round clips acquired from Numrich Gunparts Corp. (GunpartsCorp.com). Six-round moon clips (252510B) cost $1.40 each and three-round half-moon clips (252670B) cost $2.25 a pair. We also used a case-removal tool (958390B) that cost $10.65, which is a notched tube that fits over the fired case and is used to twist the empty case out of the clip.

We ran these revolvers using a mix of factory 230-grain ball ammo from Hornady and Winchester, reloads with 185-grain SWC bullets, and a load from a custom ammo reloader in 45 Auto Rim. The custom 45 Auto Rim ammo manufactured by American Custom Ammo (AmericanCustom.tripod.com, acrammo@sum.net, [850] 689-4553) was loaded with a Rainier 200-grain TMP/FN/FB bullet. The 45 Auto Rim cartridge was developed in 1920 as a substitute for 45 ACP and moon clips in M1917 revolvers. These cartridges have a thick rim and headspace on the rim.

Though both of these revolvers shared the same material in their frame construction, they were set up with different grips, barrel length, sights and lock up. Spoiler alert: The 625-10 was a real contender for conceal carry, but a defect caused it to be eliminated from consideration. Here's more about what we found with these 45 ACP snubnose revolvers.

S&W Model 325PD 45 ACP, $700-$925

First, we tested chamber and bore alignment with a Brownells revolver range rod (080-617-045WB, Rod Combo for 45 Auto/45 Colt, $42) and found all chambers were in spec, which we had assumed because this revolver showed little signs of use. The matte-black scandium frame and barrel shroud contrasted with the gray titanium cylinder. Fit and finish were very good. The hammer,

SMITH & WESSON MODEL 325PD 45 ACP, $700-$925

GUN TESTS GRADE: B-

The 325PD makes sense if you need a hideout revolver chambered in 45 ACP.





The ejector rod fully ejected empties from the cylinder.



Lock up was tight between the crane and frame, what we expect in a well-made revolver.



The rear sight was a V-notch, and the front a fiber-optic tube; the serrated top reduces glare.

Action	Double Action
Overall Length	7.6 in.
Overall Height	6.1 in.
Maximum Width (Cylinder)	1.7 in.
Weight Unloaded	23 oz.
Weight Loaded	26.1 oz.
Barrel Length	2.8 in.
Capacity	6
Frame Material/Size	Scandium Alloy, Large N-Frame
Cylinder Material	Titanium
Frame Front Strap Height	2.2 in.
Frame Back Strap Height	3.8 in.
Grips	Smooth Wood
Grip Thickness (max)	1.2 in.
Grip Circumference (max)	4.8 in.
Front Sight	Red-Fiber-Optic Tube
Rear Sight	Adjustable V-notch
Sight Radius	3.8 in.
Trigger Pull Weight Single Action	4.1 lbs.
Trigger Pull Weight Double Action	13 lbs.
Trigger Span Single Action	2.7 in.
Trigger Span Double Action	3.3 in.
Safety	None
Warranty	Lifetime to Original Owner
Telephone	(800) 331-0852
Website	Smith-Wesson.com
Made In	Springfield, MA.



Note the steel barrel is housed in an outer barrel sleeve, or shroud, made of a lightweight alloy, the purpose being to reduce weight.

trigger, and cylinder latch were all blued steel. The hammer spur was the large, square target type with plenty of checkering to thumb back the hammer without fear of slipping. It also made the revolver a bit bulkier.

The rear sight was adjustable for windage and elevation and sported a V-notch. The rear portion of the rear sight was also serrated to eliminate glare—a detail we have come to expect from S&W. The front sight stood tall with a red fiber-optic tube that absorbed light when light was available. In dark conditions, the red tube offered some contrast, allowing shooters to pick it up quickly. The sights were very usable for defense work, as the red dot from the end of the tube seemed to naturally settle into the V-notch. The tube could be replaced with another color if desired; it was pinned in place. The top of the frame and barrel shroud were serrated nicely.

The grip was smooth wood, and our shooters found it to be hand filling. It allowed testers to get a firm hold on the revolver, especially during double-action rapid-fire testing. A lanyard loop was built into the frame of the 325PD. This feature would not be used in typical concealed-carry use, but we could see this feature being used by, say, a fly fisherman in the back country.

The 325PD had a tight lockup, and we had a confident feeling opening and closing the cylinder. We particularly liked the chamfered chambers. This allowed us to more easily chamber the fat, stubby 45 ACP cartridges. Bent clips should either be pounded flat or discarded, as we found a slightly bent clip made loading and unloading more difficult, which is something to avoid in a high-stress situation. The 325PD will also fire 45 ACP cartridges without a clip since a shoulder is machined into each chamber that allows the cartridge to headspace on the case mouth, as it does in a 45 ACP semi-automatic pistol. The issue with loading cartridges this way is, the ejector will not shuck the empty case. Each case needs to be pushed out separately with a rod, pencil, or some thin instrument that will fit into the chamber. Tedious is the best way to describe shooting the 325PD in this manner. At the range, our suspicions were confirmed. This

RANGE DATA

Winchester White Box 45 ACP 230-gr. JHP	Smith & Wesson Model 625-10	Smith & Wesson Model 325PD
Average Velocity	772 fps	788 fps
Muzzle Energy	305 ft.-lbs.	317 ft.-lbs.
Smallest Group	1.8 in.	0.6 in.
Average Group	2.0 in.	1.0 in.

Hornady Steel Match 45 ACP 230-gr. HAP	Smith & Wesson Model 625-10	Smith & Wesson Model 325PD
Average Velocity	738 fps	741 fps
Muzzle Energy	278 ft.-lbs.	285 ft.-lbs.
Smallest Group	0.2 in.	0.6 in.
Average Group	0.4 in.	1.2 in.

Handload 45 ACP 185-gr. SWC	Smith & Wesson Model 625-10	Smith & Wesson Model 325PD
Average Velocity	913 fps	901 fps
Muzzle Energy	343 ft.-lbs.	334 ft.-lbs.
Smallest Group	0.2 in.	0.4 in.
Average Group	0.7 in.	0.9 in.

American Custom Ammo 45 Auto Rim 200-gr. TMP/FN/FB	Smith & Wesson Model 625-10	Smith & Wesson Model 325PD
Average Velocity	702 fps	724 fps
Muzzle Energy	219 ft.-lbs.	233 ft.-lbs.
Smallest Group	1.6 in.	0.6 in.
Average Group	1.8 in.	1.6 in.

To collect accuracy data, we fired five-shot groups from a bench using a rest. Distance: 15 yards with open sights. We recorded velocities using a ProChrono digital chronograph with the first screen set 15 feet from the muzzle.



The 325PD's large sights, left, made sight acquisition fast, and its red-fiber-optic-tube front sight absorbed surrounding light, making it glow. The 625-10's sights, right, were minimalist for concealed carry,

S&W PERFORMANCE CENTER MODEL 625-10
45 ACP, $1200-$1400
GUN TESTS GRADE: F

The Performance Center 625-10 was a disappointment. It was well set up for conceal carry, but a cracked frame forced us to eliminate it from consideration.





The stubby ejector rod did not clear empty cases from the chamber.



The handgun showed tight lock up, and the front edge of the cylinder was beveled nicely.



Note how the rear sight groove starts as a V-shape then tapers to a deep groove. These sights were more concealable.

Action	Double Action
Overall Length	7.6 in.
Overall Height	5.5 in.
Maximum Width (Cylinder)	1.7 in.
Weight Unloaded	21.5 oz.
Weight Loaded	24.7 oz.
Barrel Length	2.0 in.
Capacity	6
Frame Material/Size	Stainless Steel, Large N-frame
Cylinder Material	Stainless Steel, Non-fluted
Frame Front Strap Height	1.8 in.
Frame Back Strap Height	3.9 in.
Grips	Checkered Walnut/Finger Groove
Grip Thickness (max)	1.1 in.
Grip Circumference (max)	5.2 in.
Front Sight	Dovetailed White Dot Ramp
Rear Sight	Groove
Sight Radius	4.5 in.
Trigger Pull Weight Single Action	4.3 lbs.
Trigger Pull Weight Double Action	11.3 lbs.
Trigger Span Single Action	2.8 in.
Trigger Span Double Action	3.3 in.
Safety	None
Warranty	Lifetime to Original Owner
Telephone	(800) 331-0852
Website	Smith-Wesson.com
Made In	Springfield, MA



The muzzle was crowned, but we would have liked the outer edges of the barrel shroud beveled.

revolver and the 625-10 transferred a lot of felt recoil into our palms. The revolver was not pleasant to shoot for an extended period of time. In single action, we were able to get about 1-inch groups from the 230-grain FMJ factory loads from Hornady and Winchester, which we thought was acceptable accuracy. The hotter handloads showed even better accuracy, with its best groups under 0.5 inches. We fired at a range of 15 yards for accuracy testing, then moved to 3, 5, and 7 yards for fast double-action shooting to simulate typical confrontation ranges. Most testers, firing as fast as they could, were able to keep six shots in center mass of the target. We also tested reloading speed by shooting a six-shot string, reloading, then shooting the fresh six rounds. We found we could, after some practice, reload the revolver almost as fast as a semi-automatic pistol. Testers liked the fact they could use the same factory ammo in the 325PD as they used in their 45 ACP semi-auto pistols. The ammo was compatible and accurate in both weapons. We also discovered that recoil with the same ammo in our 45 ACP semi-auto pistols felt much less than with the scandium-framed 325PD. We could shoot all day with a full-size full-weight 1911, P220 or G21, but not with this.

We felt the sights were tall, making the 325PD bulky for conceal carry. The front sight had a few sharp edges that could potentially snag on loose clothing during a draw. We would practice our draw from concealment with an empty gun over and over until we felt confident we could perform regardless of concealing garment.

Our Team Said: We thought the 325PD was too bulky for concealed carry due to the excellent, but prominent, sights. As a bug-out-bag gun or night stand piece that uses ammo compatible with a 45 ACP semi-automatic pistol, this revolver shines.

S&W Performance Center Model 625-10 45 ACP, $1200-$1400

The S&W Performance Center Model 625-10 was a Lew Horton





The grip of the 325PD, left, offered a bigger hand hold for more controlled shooting, but it also made the revolver bulkier. The 625-10's grip, right, was small, requiring the shooter tuck the small finger under the grip.





In the 325PD, left, the chamber mouths were gently chamfered, so aligning fat, stubby 45 ACP cartridges in a moon clip was a little faster. Ditto that on 625-10, right. This is a very helpful feature.

Special Edition. The scandium frame was fitted with a 2-inch barrel. The barrel looks shorter than it actually is due to the short 45 ACP cylinder. The shorter 45 ACP cylinder used on the 325PD and the 625-10 leave a noticeable gap between the cylinder and the frame—remember the N-frame was made for longer rimmed cartridges like 357 Magnum, 41 Magnum, 44 Special and 44 Magnum. On both models the barrel is set back to meet the short cylinder, creating the illusion of the gun having a very short barrel.

Testers felt the 625-10 was better set up for concealed carry than the other gun due the fixed sights, smaller grip, and the melt treatment it had. Most edges were beveled, giving the revolver a smooth exterior. The front edge of the cylinder was beveled nicely, allowing the revolver to be easily holstered, but the outer barrel edges near the muzzle were sharp. We would knock off these edges if we owned this pistol. The action was smooth as silk, and we liked to dry-fire the revolver prior to actual range time. The bore and chambers were in spec according to our Brownells revolver range rod test. The cylinder of the 625-10 locked into the frame differently than the 325PD. A ball



Notice how the moon clip fits into the extractor groove of the 45 ACP case. Arrow: A steel flash shield protects the scandium frame from hot gases flowing between the cylinder and barrel gap.



In the 625-10, note how the height of the ejector star accommodates cartridges in a moon clip and how the moon clip fits the cartridges in the chambers.



Arrow: The 625-10's trigger had a stop built in, which we liked because it allowed for short resets.

detent on the crane snapped into a V-shaped groove in the frame. We liked this lock up better than the lockup on the 325PD. We felt it was sturdier and stronger.

The metal fit and finish were very good. The grips had no gaps and they did not overlap the frame. The matte-gray finish gave the 625-10 a refined look. The hammer, trigger, and cylinder latch also had a matte-



Both revolvers had exposed backstraps, which transferred more felt recoil to our palms; Arrows: Note the lanyard loops built in.



Arrow: A pin in the 325PD's ejector shroud improved lock up of the 325PD's cylinder.





In 2005, when we first tested the Model 325PD, left, we gave it a Conditional Buy recommendation, and we still feel the same. Super-light handguns chambered in powerful cartridge carry easily, but pound the shooter. The Model 625-10, right, was offered 2003-2004, and both may have simply been the wrong mix of cartridge and frame materials.

stainless finish. The hammer spur was teardrop shaped, which gave it slightly less bulk yet provided enough traction to manually cock the hammer. The cylinder opened and closed with a tight lockup. We did notice the short ejector rod and wondered if it was long enough to eject empties clear of the cylinder. It wasn't. The trigger featured a stop, which we liked and appreciated in rapid-fire drills because it shortened reset. The chambers were all chamfered, which allowed for easier loading of the fat 45 ACP cartridges in a moon clip.

The blade front sight with white dot was dovetailed into the barrel. It was thick and matte black and contrasted with the wide groove milled into the top of the frame. The rear of the groove was V-shaped and tapered into a flat, deep groove. At ranges of 3 to 7 yards, these sights allowed fast acquisition and follow-up. They were also low profile, so they were less prone to snagging when drawing from concealment.

The 625-10 had shorter grips, which made it more concealable than the 325PD. The former's grips were checkered wood with finger grooves that blended smoothly into the frame. The backstrap also had a lanyard loop.

At the range we found the 625-10 was harder to fire due to its smaller grip. We produced some impressive six-shot groups at 15 yards: 0.4 inches with Hornady Steel Match 230-grain full-metal-jacket rounds and 0.7 inches on average with our 185-grain SWC reload. We found it odd the Winchester White Box—also 230-grain FMJs—did not perform as well as the Hornady ammo. We could get 2-inch groups on average with the Winchester ammo; the 325PD obviously had better accuracy, which was in part due to the more refined sights. The 45 Auto Rim ammo also proved not to be as accurate as the Hornady or the reload in accuracy testing. It averaged slightly less than 2 inches at 15 yards. All groups were adequate for defense work within that 3- to 7-yard distances, but we expected more from a Performance Center revolver.

In our rapid-fire portion of testing—six shots, reload, six shots—at 3, 5, and 7 yards, we found we were just as accurate with the 625-10 as we were with the 325PD. The 625-10, even with its shorter grip, gave us good groups at center of mass on the cardboard.

The downfall of this revolver came after testing and cleaning. A team member noticed a hairline crack that had not been in the frame when we started. The crack was just aft of the barrel shroud where the crane locks into the frame. All the factory rounds and reloads we used have been tested extensively in other revolvers and semi-automatic pistols, but none of them caused a gun failure. We failed the revolver due to this crack.

Our Team Said: The 625-10 seemed to be a very serviceable revolver for conceal carry; however, it suffering a cracked frame during our test excludes this revolver from our short list of defense carry revolvers. To the company's credit, when we contacted S&W, they offered a replacement for the 625-10, since that model is no longer manufactured. S&W was accommodating and apologized for the faulty revolver, but we can't send our readers into the used-gun market to look for a 625-10. If you choose to ignore our advice and experience with this unit and buy one anyway, then *caveat emptor.*

Written and photographed by Robert Sadowski, using evaluations from Gun Tests *team testers.* **GT**

Replacement AR-15 Triggers From Ruger, HiperFire, and Rise

Ruger's Elite 452 and HiperFire's EDT trigger are superior upgrades. We were less impressed with HiperFire's 24E, and we encountered problems with Rise Armament's RA-535 unit.

Improving the trigger in an AR-15 can make a big difference in performance of the rifle. Whereas handgun triggers are generally retained and modified, the AR-15 lends itself more easily to replacement of its trigger group, such as we did in this review. Our test triggers were two from HiperFire, the $89 HiperTouch EDT AR-15/AR-10 Enhanced Duty Trigger and the $215 HiperTouch 24E Elite, Ruger's new Elite 452 AR Trigger 90461, $159, and the $259 Rise RA-535 Advanced Performance Trigger.

Our test-bed AR-15 was the Bushmaster "preban" XM-15 carbine previously tested in the August 2003 issue of Gun Tests. The XM-15 featured a 1:9 twist 16-inch-long barrel chambered for 5.56mm ammunition. While its trigger continued to be extremely consistent, the pull weight measured at a full 8.5 pounds with little or no take up and a hard break. In terms of function, there was nothing really to complain about other than it being inordinately heavy, a characteristic we were looking to change. For optics we retained the Sightron S33-4R 1X-magnification red-dot scope that had been in place since about 2005. With four different illuminated reticles to choose from, we picked the single-dot reticle with a size of 2 minutes of angle at 50 yards.

We considered both ease of installation as well as performance in our judging standards. The Rise Armament trigger was a sealed drop-in module, but the other triggers required assembly. By working with both a neophyte builder and an experienced gunsmith, we were able to gain valuable insight on the process. Matt Suddeth of Katy, Texas — a brilliant knife maker with a reputation for exacting rifle work — advised us on aspects of the installation. Once the triggers were configured properly, we measured their pull weights 10 times immediately following installation then 10 more times after our range tests with a Brownells Recording



Our four replacement triggers for the AR-15 were the $159 Ruger Elite 452AR (top left), the $89 HiperFire HiperTouch EDT trigger (bottom left), HiperFire's $215 24E (bottom right), and the $259 Rise Armament RA-535 (top right).



Knife maker and riflesmith Matt Suddeth of Katy, Texas was added to our test team for his vast experience with trigger assemblies. Suddeth admired the precision of the Ruger Elite trigger, but preferred the steel used for the HiperTouch EDT. Contact him at Suddeth_Matt@yahoo.com.



This is the exterior view of the Rise RA-535 trigger, which was a true drop-in component. All that was required was the removal of the safety to drop it into place. The trigger and hammer were finished with bright plating, as shown. But it caused malfunctions.

HIPERFIRE HIPERTOUCH EDT AR-15/AR-10 HPTEDT ENHANCED DUTY TRIGGER, $89

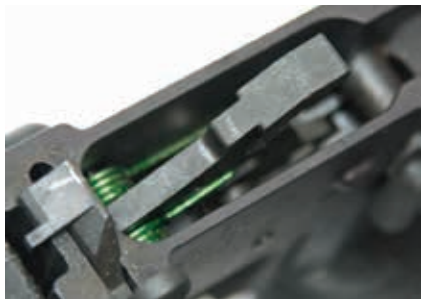
GUN TESTS GRADE: A-

This HiperTouch trigger featured a consistent reset that was clean and well defined.



Style	Assembly Required, Single Stage; Safety Selector Removal Not Required
Adjustable	Yes; Spring Changes
Adjustment Range	4.5 to 5.5 lbs.
Measured Break Range	4.75 to 6.0 lbs.
Platforms	AR-15, M4
Frame Material	Matte Black Carbon Steel
Trigger	Matte Black Carbon Steel
Hammer	Matte Black Carbon Steel
Disconnector	Matte Black Carbon Steel
Springs	Steel
Spindle/Toggle Shaft	Matte Black Carbon Steel
Hammer/Trigger Pins Size	0.154 in.
Hammer Fall Weight	Mil-Spec
Trigger Shape	Curved
Telephone	(612) 729-3829
Warranty	None Written
Website	HiperFire.com
Made In/By	US/HiperFire
Retail Source	Brownells, 100-016-843WB





The HiperTouch Enhanced Duty Trigger's loose parts are shown top, then in the sear and hammer assemblies, middle, along with a punch. Above left is the lower assembly installed, then above right, the hammer assembly on top of that.

Pull Gauge (174-025-250WB, $125).

Our first test was to make sure the safety remained fully functional. All four triggers passed this test. Then we tried an impact test with the selector in the fire position. With the gun empty, safety off, this consisted of crouching down so that our head was below the line of the muzzle and slamming the buttstock against a concrete floor three times. We wanted to see if we could get the trigger to release the hammer by means other than pulling the trigger. None of the units failed this test. In addition, none of the triggers exhibited common flaws such as creep, grittiness, or dead spots.

Live-fire tests were performed in two segments, each fired offhand (standing unsupported) from the 50-yard line at American Shooting Centers in Houston, Texas. The targets we chose were proprietary to the range, displaying a white 3.9-inch 10-point center containing a 2-inch-diameter X-ring. The 9-point ring consisted of an orange circle, producing an overall diameter of 8 inches. Segment one was a practice session consisting of 50 rounds performed with budget ammunition, American Eagle 5.56x45 55-grain FMJ XM193BLC100, sold in 100-round packaging. During this period, we experimented with different ways the shooter could work the trigger. We fired using the slowest, most controlled press, we could muster. We also moved the trigger fast. We shot strings of fire holding the trigger fully rearward after ignition and then practiced a slow release until the mechanism reset and fired again. We did this as rapidly as we could as well as with measured precision.

After a timed 3-minute rest period, segment two was fired for shots of record using premium ammunition. Limited to ten shots standing unsupported, we chose Black Hills 5.56mm 69-grain OTM (open tip match, featuring the Sierra Match King BTHP bullet). Did any of these triggers make our test gun easier to shoot accurately? Here's what we found out:

HiperFire HiperTouch EDT AR-15/AR-10 Enhanced Duty Trigger, $89

In terms of construction and operation, the EDT was very much like the trigger it replaced. The feel offered little or no take up and a hard break. The difference was a much lighter pull. But the EDT took time to settle in. The first pull measurements had the Brownells scale jumping from 4.75 pounds to more than 6.0 pounds. We then dry-fired the XM-15 50 times and the trigger began to settle down. Measurements were 5.5, 5.25, 5.5, 5.5, 5.5, 5.5, 5.5, 4.75, 6.0, and 5.25 pounds. After our tests were completed, including impact tests, the trigger registered a constant 5.5 pounds. Installation was straightforward and was slowed only by pushing the support pins far enough to seat the springs in their respective points of retention.

Our Team Said: This was an excellent replacement for the stock trigger in the Bushmaster XM-15. The EDT provided dependable, predictable ignition with less shooter fatigue than the stock trigger.

HIPERFIRE HIPERTOUCH 24E ELITE, $215

GUN TESTS GRADE: B

Opposite in feel to the Enhanced Duty Trigger, this trigger system presented a soft, continuous compression with each of the three spring variations.



Arriving with a choice of three different strengths, we thought this system didn't offer enough feedback to the shooter.

The 24E used dual coil springs to regulate weight and hammer-drop strength, right.





Style	Assembly Required, Single Stage; Safety Selector Removal Not Required
Adjustable	Yes; Springs (3) Changes
Adjustment Range	2.5 to 3.5 lbs.
Measured Break Range	2.5 to 4.25 lbs.
Platforms	AR-15, M4
Frame Material	Matte Black Carbon Steel
Trigger	Matte Black Carbon Steel
Hammer	Matte Black Carbon Steel
Disconnector	Matte Black Carbon Steel
Springs	Steel
Spindle/Toggle Shaft	Matte Black Carbon Steel
Hammer/Trigger Pins Size	0.154 in.
Hammer Fall Weight	Mil-Spec
Trigger Shape	Curved
Telephone	(612) 729-3829
Warranty	None Written
Website	HiperFire.com
Made In/By	US/HiperFire

HiperFire HiperTouch 24E Elite, $215

The defining feature of the HiperTouch 24E was its adjustability. The trigger was controlled by a pair of coil springs (referred to as "toggle" springs by the manufacturer) that ride on struts at the top of the unit. Three pairs of color-coded springs were supplied. The blue toggle springs were meant for medium trigger-pull weight, and the yellow springs were for medium-light pull weight, with both sets providing "low-end stock hammer energy." The plain-steel color springs were supposed to provide the lightest trigger pull along with a claimed 35% additional hammer energy than stock springs.

Once the support pins were in place, fitting the toggle springs was the only challenge. Once we learned to compress the springs by pushing on the crosspiece and control the pins during disassembly, changing spring weights was actually a very quick process.

We began with the lightest trigger pull and found that it took much less time to settle in to a consistent level of tension than did the EDT. The plain toggle springs resulted in initial variance ranging from 2.5 pounds to 3.0 pounds. By the end of our tests, the trigger-pull gauge registered 2.75 pounds 9 out of 10 times, with one measurement reading 2.85 pounds. The sensation fed back to the shooter was a smooth, even compression.

Changing to the yellow and blue toggle springs, the pull weights increased. The heaviest of the three was the blue, beginning with a 3.5-pound pull on our first try, increasing to 3.75 pounds on our third test pull and jumping to 4.25 pounds on the fourth pull. Three more pulls were measured at 3.75 pounds before the blue spring variant settled in at 3.5 pounds for the rest of our sessions. The yellow springs produced a pull weight of 3.25 pounds on average.

Our Team Said: At the range, we had a difficult time producing satisfactory groups with this trigger. The different spring rates produced different poundages and different sensations of length of pull, if not an actual difference in travel. And as the poundage increased, so did our inability to get a feel for break and reset. The lightest setting would be our first choice, but in our view, it was nevertheless too vague to offer an improvement over the stock trigger.

Ruger Elite 452 AR-Trigger 90461, $160

The Ruger Elite Replacement Trigger comes installed in a demonstration module that looks like it was ripped from an AR-15 lower, including grip and safety mechanism. The unit was reusable, so you can install and test additional trigger components. In addition, both the safety and the grip can be used in a rifle build, so we think this was quite a deal.

Our first measure of trigger-pull weight was about 3.6 pounds and varied no more than about a quarter pound between 3.5 pounds and 3.75 pounds over the course of our first ten tries. After our range sessions, it appeared that a tic more than 3.5 pounds was going to be the norm.

The style of the trigger was a short, free swing and a compression that was not hard but not mushy either. The Ruger Elite Replacement Trigger was very easy to learn, as indicated by the 50-round group on our practice target. Our first two triggers had us trying different approaches to working them, and this was reflected in the broken patterns

on our 50-round practice target. It was never our intention to measure our practice target, but when firing with the Ruger trigger in place, the results were quite presentable.

We found the only two ways to approach this trigger was to either use it full time as a short-stroke 2-stage design beginning with take up each time, or to hold the trigger to the rear and release it no further than the reset point. As indicated by our practice target, there was plenty of control and feedback available even if you alternated between the two methods. Law-enforcement personnel that we regularly team with prefer some measure of take up, so if a shot is not needed, it is easier to safely back off the trigger.

Our Team Said: This was a highly competent design that splits the difference between single-stage and two-stage triggers.

Rise RA-535 Advanced Performance Trigger, $259

The unit was a true drop-in component. The Rise RA-535 Trigger Group was a sealed module consisting of a red-anodized aluminum frame holding the hammer, trigger, and springs in line and ready to work. All that was required was the removal of the safety to drop it into place. The hammer and trigger rode seated on hollow tubes, so mounting required the use of non-rotating pins. Rise delivers the RA-535 with a very nice set of KNS non-rotating pins, including a brass guide. Non-rotating pins are traditionally used to prevent the pins from burrowing out the diameter of the holes in the relatively soft aluminum frame. But in this case, they were being used to connect the brackets running along the outside of the lower rifle frame.

No instructions were supplied, nor could we find any on the RiseArmament.com website. The trigger pin was threaded at each end of its inner diameter with Torx screws supplied to pull the brackets together. The hammer pin was machined to fit into the slots machined into the interior surface at the other end of the bracket. But in this case the pins merely lent support so their positions supporting the hammer or the trigger was interchangeable.

The trigger and hammer were finished with bright stainless plating, making the Rise unit far more attractive than more typical components. The contour of the trigger was nearly straight. We found the surface of the trigger to be noticeably rounded and a little slippery, too. Our first 10 measurements of the trigger began with a 5.0-pound pull. Variation ranged from 4.25 pounds to 5.25 pounds before settling down to a steady 4.75 pounds, despite being advertised as providing a. 3.5-pound trigger pull. Further description on the website reads, “With a crazy-

RUGER ELITE 452 AR-15/AR-10 REPLACEMENT TRIGGER 90461, $160

GUN TESTS GRADE: A

Safe and precise. We think many shooters will intuitively bond with this trigger.



Style	Assembly Required, Two Stage; Safety Selector Removal Not Required	Springs	Steel
Adjustable	NO	Spindle/Toggle Shaft	Matte Black Carbon Steel
Adjustment Range	N/A	Hammer/Trigger Pins Size	0.154 in.
Measured Break Range	3.5 to 3.75 lbs.	Hammer Fall Weight	Mil-Spec
Platforms	AR-15, M4	Trigger Shape	Curved
Frame Material	Matte Black Carbon Steel	Telephone	(888) 220-1173
Trigger	Matte Black Carbon Steel	Warranty	None Written
Hammer	Matte Black Carbon Steel	Website	Ruger.com
Disconnector	Matte Black Carbon Steel	Made In/By	USA/Ruger
		Retail Source	Ruger.com

Above: The $160 Ruger Elite 452 AR Trigger arrived in a test module that can be reused with any trigger made for AR-15 or AR-10. Even the safety mechanism and the grip can be used. This was our top-rated trigger, providing a short take up and clean break. It could be used as a short-stroke 2-stage design or holding the trigger to the rear and releasing it no further than the reset point.



fast reset, nearly nonexistent overtravel, and a smoother, crisper, lighter trigger pull, the RA-535 Advanced Performance Trigger (APT) helps you fire more quickly and accurately. The single-stage trigger group is easy to install." Despite measuring heavier than the claimed 3.5-pound trigger-pull weight, we thought the press was quite clean and its reset was very quick indeed.

At the range, our 50-round practice target showed very good accuracy. Then in our final record 10-shot string, we began to experience unintentional discharges. On the third press of the string, the gun fired twice but stopped, failing to feed the next round.

We cleared the jammed round and refilled the chamber. Shooting carefully with a solid grip, we pressed the trigger. But instead of a single shot, the result was a three-round burst. Judged as unsafe, this concluded our firing session. Off the range, the empty gun was retested for impact and manually tested for its ability to return to reset. The RA-535 passed both of these tests on an empty chamber.

Working the bolt manually, the trigger safely reset each time. But the reset did seem to be quite minimal in retention. We remeasured the trigger press and saw the results matched our initial findings, 4.5 to 4.75 pounds on average. But the distance to reset was by far the shortest among our test triggers and probably the shortest of any trigger on a semi-automatic carbine we've seen to date. When we removed it for further inspection, we found that the plating on the face of the hammer was peeling off.

Our Team Said: Ease of installation was probably this unit's strongest point. Trigger compression was clean and short, if not as light as advertised. Plating on the hammer face peeled after a relatively short firing session. As a result of that and the unintentional discharges we experienced, we would not buy the Rise RA-535.

Written by Roger Eckstine, using evaluations from Gun Tests *team testers.* **GT**

RISE RA-535 ADVANCED PERFORMANCE TRIGGER, $259

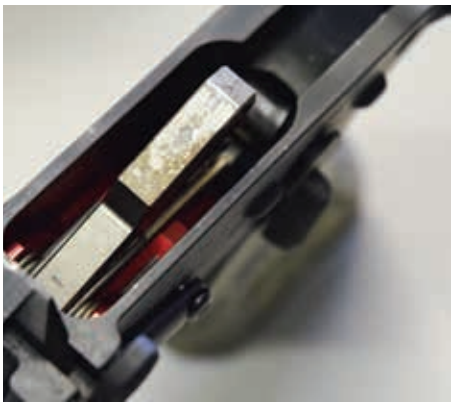
GUN TESTS GRADE: D

We hesitate to recommend the Rise due to repeated unintentional discharges we encountered.



Being a sealed module, a set of KNS pins were supplied and ease of installation was this unit's strongest point. Designed and advertised to offer an extremely quick reset and "nearly nonexistent over travel," we think it is these characteristics that contributed to repeated accidental discharges during our tests. The Rise Armament RA-535 was so visually appealing we couldn't wait to install it. But the plating on the hammer face, right, was peeling after just 57 rounds. The debris could contribute to a malfunction, we believe.

Style	Drop In, Single Stage; Safety Selector Removal Required
Adjustable	No
Adjustment Range	N/A
Measured Break Range	4.25 to 5.25 lbs.
Platforms	AR-15, M4
Frame Material	Aluminum
Trigger	Plated Steel
Hammer	Plated Steel
Disconnector	Plated Steel Carbon Steel
Springs	Steel
Spindle/Toggle Shaft	Matte Black Carbon Steel
Hammer/Trigger Pins Size	0.154 in.
Hammer Fall Weight	Mil-Spec
Trigger Shape	Straight
Telephone	(918) 994-7058
Warranty	None Written
Website	RiseArmament.com
Made In/By	USA/Rise Armament





The Rise RA-535 trigger is flashy, both in its rakish shape and in its coatings. Note the bracket spanning diagonally over the frame (arrow). This is evidence of the non-rotating pins required for installation of the self-contained RA-535 trigger module. With the flashy Rise trigger installed, we dressed up the lower with two items from Hogue, a $30 G10 GMascus contour hinged trigger guard (15198) and a $120 G10 GMascus Piranha grip (15138).

1911 Target-Gun Shootout: MAC Bullseye Versus Colt Gold Cup

What happens when we take a long-slide target gun to the range and shoot it alongside one of the best-known paper-punchers of our time? We get a good challenge from the up-and-comer.

Although many 1911 shooters are concerned with personal defense, a market clearly exists for target-sighted 1911 handguns. Makers who offer a 1911 of any type often provide an upgraded target model for those wishing to use the pistol in competition. Many of these are a far cry from the old warhorse that fought in two World Wars and many skirmishes elsewhere. In this shoot-out, we have included a classic target-grade 1911, the Colt Gold Cup Trophy against a Metro Arms long-slide 1911 offered as a factory product in the extended version that many shooters appreciate. During the course of the test we learned something about accuracy and came away with respect for each handgun. But one handgun was clearly better and more practical for most shooters.



Our two 45 ACP test guns were the Colt's Mfg. Co. Gold Cup Trophy O5070X, $1249, top; and the Metro Arms Company Bullseye M19BE45C, $1279. The MAC Bullseye is a long-slide model shown in scale to the standard 5-inch-barrel Colt. The Trophy shown is the way that model number is delivered from Colt, and how we modified it with factory rubber grips. The Colt we started with was a speciality SKU with thick white grips, below, that weren't suited to the gun.



Colt's Mfg. Co. Gold Cup Trophy O5070X 45 ACP, $1249

BudsGunShop.com had this pistol listed for $1032, which we think is a great price on a very good gun. The Gold Cup is Colt's current rendition of a target-grade 1911. The Trophy features a beavertail safety and skeletonized hammer, compared to the more traditional National Match. This handgun was worth a hard look because it differs considerably from Colt Gold Cup pistols we have previously tested. The Gold Cup series has seen a lot of changes, and we believe that they are good ones for reliability and longevity.

At one time the Gold Cup was manufactured with a lightened slide that reduced the nominal weight of the pistol from 39 to 37 ounces. This 1960s-era expedient was intended to help it function with light target loads, but match shooters felt that the balance of the handgun was adversely affected. The balance was restored with the Series 70 pistols. The pistol was also produced with a flat-top slide, but the current Colt tested here featured a round-top slide. The rear sight was once held with only a roll pin. This led to the rear sight sometimes taking flight. While the sight pin could be replaced with a sturdy solid pin rather than the roll pin, the present dovetailed-in sight was rated superior. In the opinion of our testers, the sights offer an excellent all-round sight picture.

The pistol exhibited good fit, and the barrel bushing was tight enough to require that the Perry bushing tool

be used to disassemble this Colt. The Colt featured a Series 80 firing-pin block, which may complicate getting a topnotch trigger action. As it was, our Colt's trigger broke at a clean and crisp 5.25 pounds.

As noted, this Gold Cup featured a round-top slide, in common with the Government Model. The ejection port was properly scalloped, and we noticed the pistol used the modern XSE frame with a slight cut out just under the trigger guard. This lowers the already low bore axis and seems to aid in off-hand fire. The beavertail safety was adequate for the task, but we like the MAC better.

The Colt was a specialty model from a major distributor, who seemed to have ordered a number of synthetic white grips with a golden Colt pony. These grips were monstrous! The lines were not pleasing, and the grips were too thick for any of our raters to use well. The standard Colt is supplied with a set of synthetic checkered grips, and these are by far the superior option. Because changing grips is something any bullseye shooter might do, we fitted the test with a set of Pachmayr grips and stowed the gaudy white grips.

Then we lubricated the pistol and took it to the range for a firing test. There were no failures to feed, chamber, fire, or eject with the HPR 230-grain FMJs. The pistol felt good in the hand, and the sights offered a good look at the target.

Later, the Colt proved controllable and combat accurate in rapid fire. With the standard 16-pound recoil spring, the pistol cycled the 185-grain ASYM target load the other pistol would not. We believe that this was due to the typical lighter hammer spring. If you change recoil springs, be cautious and study the equation to get the right balance for reliable ignition.

Off the bench, the Colt gave excellent results. This was the type of pistol that will make a shooter test various loads just looking for the sweet spot, and it might prompt such a shooter to also conduct a handloading program. The ASYM

COLT'S MFG. CO. GOLD CUP TROPHY O5070X
45 ACP, $1249
GUN TESTS GRADE: A-

The Colt offered excellent trigger action, good accuracy, and sights that offer good adjustment. It handles more quickly than the long-slide Metro. Also, the Colt came out of the box running without a break-in period. The grips supplied with the handgun were ridiculous, we felt, and made no sense on a target gun. We experimented with several grips, settling on a Pachmayr set. Thus, the half-grade markdown.





The Colt Gold Cup Trophy came out of the box running and ran with every load tested.



The Colt Gold Cup Trophy gave excellent all-round performance. Its best features were the smooth trigger and good sights, coupled with perfect reliability.



The adjustable target sight can interfere with hammer manipulation.

Action	Semi-Auto Series 80; Locked Breech Single-Action
Overall Length	8.5 in.
Overall Height	5.4 in.
Maximum Width	1.5 in.
Weight Unloaded	39 oz.
Weight Loaded	43.5 oz.
Barrel	5.0 in. Stainless Steel, 1:16 Twist
Magazine	8-Rd. Detachable Box
Slide	Brushed Stainless Steel; Lower & Flared Ejection Port; Rear Serrations
Frame	Brushed Stainless Steel
Frame Front Strap Height	2.6 in.
Frame Back Strap Height	3.2 in.
Grips	Black Rubber Wraparound
Grip Thickness	1.3 in.
Grip Circumference	5.4 in.
Front Sight	Dovetailed Front Blade
Rear Sight	Adjustable Champion Model
Trigger	Wide 3-Hole Aluminum
Trigger Pull Weight Single Action	5.0 lbs.
Trigger Span Single Action	2.5 in.
Safety	Slide Lock Safety, Beavertail Grip Safety
Warranty	Limited Lifetime
Website	ColtsMFG.com
Telephone	(800) 962-COLT
Made In/By	USA, Colt's Mfg. Co.



As purchased, the Colt was wearing thick white grips. The standard stocks on a factory Colt O5070X are a rubber wraparound model.

185-grain Match load was the most accurate in the Gold Cup, giving a 1.3-inch best effort. Results were very consistent with this pistol. There was little deviation between the best and least accurate groups.

Our Team Said: The Colt came out of the box shooting, with no break-in period needed like with the MAC. It offered good practical accuracy offhand and excellent all-round target accuracy. Its standard size makes it a better all-round gun as well, in case it needs to serve multiple roles.

Metro Arms Company Bullseye M19BE45C 45 ACP, $1279

The Metro Arms Company (MAC) Bullseye gun is a target-grade long-slide 1911 handgun. Long-slide 1911 handguns began as expensive custom propositions, and most factory long-slide renditions are likewise costly. The dust cover wasn't elongated — all of the extra length was in the slide. We thought the MAC pistol was affordable at a MSRP of $1279, and we have seen advertised prices considerably lower. The slide was marked "MAC Bullseye" and "1911," with a stylized pistol in the M, on the left flat. The MAC logo was stamped on either side of the slide at the rear.

With 1.3 extra inches out front and an additional 9 ounces of weight, the MAC pistol was easily the most comfortable handgun to fire of the two tested. Initial examination of the pistol revealed excellent fit, finish, and attention to detail. There were no tool marks, polishing marks, or blemishes of any type on the hard-chrome finish. The slide featured a combination of rear and forward cocking serrations, the latter being handy for verifying a loaded chamber prior to shooting a timed course of fire. There were four cocking serrations forward and five to the rear on each side of the slide.

The rear sight was a fully adjustable Kensight, a reputable choice. The front sight was a dovetailed post that held a fiber-optic tube. The ejection port was a modern type with plenty of clearance. The extractor was tool steel finished in blue. The top of the slide was finished in the flat-top style

RANGE DATA

Federal American Eagle AE45A 230-gr. Full Metal Jacket	Colt Gold Cup Trophy	MAC Bullseye
Average Velocity	844 fps	890 fps
Muzzle Energy	363 ft.-lbs.	404 ft.-lbs.
Smallest Group	1.8 in.	2.0 in.
Largest Group	2.3 in.	2.5 in.
Average Group	2.0 in.	2.3 in.

ASYM Precision Match Target 185-gr. SWC	Colt Gold Cup Trophy	MAC Bullseye
Average Velocity	750 fps	781 fps
Muzzle Energy	231 ft.-lbs.	250 ft.-lbs.
Smallest Group	1.3 in.	1.0 in.
Largest Group	1.7 in.	1.7 in.
Average Group	1.5 in.	1.4 in.

HPR HyperClean 230-gr. Jacketed Hollow Points	Colt Gold Cup Trophy	MAC Bullseye
Average Velocity	819 fps	854 fps
Muzzle Energy	342 ft.-lbs.	372 ft.-lbs.
Smallest Group	1.5 in.	1.4 in.
Largest Group	2.0 in.	2.0 in.
Average Group	1.8 in.	1.7 in.

Notes: Velocity readings were recorded by firing five-shot strings over a Competition Electronics Pro Chrono. The muzzle was 10 feet from the first skyscreen. Ambient temperature: 45 degrees. Elevation: 815 feet above sea level. The accuracy figures are the average of three five-shot groups. For accuracy, we fired the test gun from a benchrest at a 25-yard target.

We used three loads in the test: Federal American Eagle 230-grain FMJ, the HPR 230-grain JHP, and the ASYM 185-grain Target Match.



The MAC required a long break in and did not function properly with target loads until the recoil spring was changed to a lighter weight. There were no failures to feed with the MAC, but we did encounter several short-cycle malfunctions.





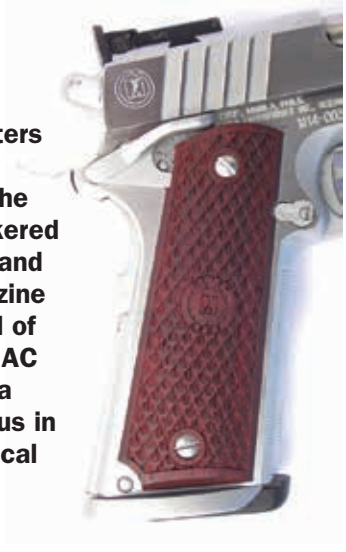
Left, with full-power 230-grain loads, the Metro Arms Bullseye gun gave good results. The hard-chromed MAC pistol was a joy to fire because of its long slide. The MAC had excellent balance when we fired it off hand as well.

METRO ARMS COMPANY BULLSEYE M19BE45C
45 ACP, $1294
GUN TESTS GRADE: B

The MAC 1911 had a ramped barrel and ambidextrous safety. The beavertail safety, forward cocking serrations, and checkered front strap were all nice additions. The pistol had good sights and one of the best factory triggers in the 1911 world. Fit and finish were flawless. The break-in period was monotonous.



The beavertail grip safety, ambidextrous safety, and skeletonized hammer of the MAC were good features. Both sets of serrations were wide.



All raters felt that the checkered grips and magazine funnel of the MAC were a big plus in practical use.

Action	Semi-Auto Series 70, Locked Breech Single-Action
Overall Length	9.9 in.
Overall Height	5.6 in.
Maximum Width	1.25 in.
Weight Unloaded	47 oz.
Weight Loaded	51.5 oz.
Barrel	6.0 in. Stainless-Steel Match Grade, Ramped, 1:16 Twist
Magazine	8-Rd. Detachable Box
Slide	Hard-Chromed 4140 Steel; Wide Front & Rear Serrations; Flared & Lowered Ejection Port
Frame	Hard-Chromed 4140 Steel; Wide Magwell
Frame Front Strap Height	2.6 in.
Frame Back Strap Height	3.2 in.
Grips	Checkered Hardwood
Grip Thickness (max)	1.3 in.
Grip Circumference (max)	5.4 in.
Front Sight	Fiber Optic
Rear Sight	Bomar-Type; W&E Adjustable
Trigger	3-Hole Aluminum, w/Stop
Trigger Pull Weight Single Action	4.0 lbs.
Trigger Span Single Action	2.5 in.
Safety	Ambi Slide Lock Safety, Beavertail Grip Safety
Warranty	Lifetime for Original Owner
Website	MetroArms.com
Telephone	(732) 493-0302
Made In	Philippines
Imported By	Eagle Imports, Inc.



Right: While the MAC long-slide gun isn't designed for tactical use, we could not resist doing a few drills with it. This is a hard-hitting and accurate handgun that would make an excellent truck gun, testers said.

once used on the Colt Gold Cup, and begun, we believe, by the Randall Company. The pistol looks right with the flat-top slide.

The barrel was a bushingless lock-up type and was very tight. One of the raters noted that from his frame of reference, the MAC locks up as tightly as his personal Springfield TRP, a high standard of fit. It took some effort to unlock the slide. Its ramped barrel supplies cartridge case support. The hammer was skeletonized and nicely serrated. While adjustable sights often interfere with manually cocking a hammer, this is the best answer to the situation. The slide-lock safety was ambidextrous good fit and a tight indent. The slide lock was a standard size, which all of our raters prefer. The upswept beavertail safety was well designed with a pronounced memory groove. The grip safety releases its hold on the trigger about halfway into compression of the grip safety. The fit of the grip safety and the design are ideal for all-round use, we thought. The grips were a semi webbed pattern we found attractive. They offered good adhesion when firing. The mainspring housing was nicely checkered. The front strap offered custom-grade checkering clearly defined near the top by a nicely cut border.

There are two things that many shooters will like about the trigger action. The MAC Bullseye gun's trigger broke at 4 pounds even. There was little take-up and no creep. This was as good a factory trigger action as we can remember. The trigger offered excellent serrations on the face for control. The trigger face, front strap, and mainspring housing were all nicely finished to give good adhesion, but none were abrasive. There was no firing-pin lock or drop safety, like found on the Series 80. The pistol featured a magazine funnel, another plus for competition use.

The raters who had not fired a long-slide 1911 were surprised by the natural point and balance, but they noted the pistol was much slower when drawn from a Blackhawk belt

slide. But this is simply the nature of the beast. Once the pistol was up and in two hands, it tracked well between multiple targets. In long firing strings, the front sight simply hung on the target, making follow-up shots easier. While personal defense or perhaps even action shooting isn't the name of the game with this handgun, the pistol nonetheless posted excellent groups when it was fired as rapidly as we could reacquire the sight picture.

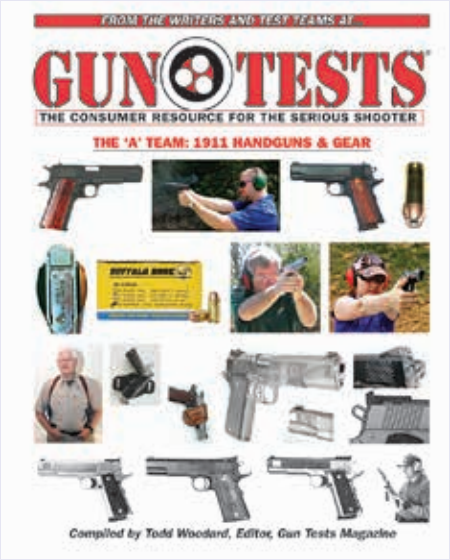
During the initial break-in period with full-power 230-grain ball, our team experienced several failures of the pistol to go into battery, and even a few in which the slide did not fully close on loading the first round. We cleaned what appeared to be preservative grease from the slide and rails and lubricated the pistol with standard gun oil. The pistol eventually functioned reliably, but only after we fired 100 rounds for the break in. This included 50 rounds of Federal American Eagle 230-grain FMJs and a like number of HPR 230-grain JHPs. There were no feed problems with the JHP loads, but the pistol was slow to cycle, with numerous failures to lock into battery during the break-in period.

We fired the pistol with three loads that have previously demonstrated good accuracy. During the firing test off a solid bench, we experienced a short cycle with the 185-grain target load. The pistol didn't seem to be finicky about feeding different bullet styles, but it certainly needed a considerable break in. Also, some experimentation with recoil-spring weights was in order. We changed the recoil spring to an 11-pound Wilson Combat spring, which allowed the gun to function with the 185-grain target load. Considering that this handgun was made for target shooting and not personal defense, a potential buyer should have no qualms about working bugs out of the pistol, in our opinion.

On paper, the MAC demonstrated excellent accuracy and consistency, with little deviation between groups

— continued on page 32

— continued from page 2



Pistols & Gear, Parts I & II," and "Bolt Action Rifles, Parts I & II." If you're interested in a particular topic for a future e-book, please email me and let me know.

I should also mention here the availability of a digital subscription to the magazine, which is transmitted ahead of the arrival of the print issue in the mail. Digital subs are $24, and a hidden feature of those subscriptions is the lack of renewal notices subscribers get in the mail.

Elsewhere, our staff posts material once or twice daily on the Gun Tests Facebook page. I know many of you hate Facebook, and I'm not all that fond of it myself, so I'm not trying to recruit you to open Facebook accounts. I do have to say, however, that as a means of distributing timely material that I don't have the space for in the print magazine, Facebook is a great tool for keeping up with gun-related news. I scour close to 100 RSS feeds a day to keep up on gun-industry news, and we put up posts pointed primarily toward new-product introductions, but we do find some culturally relevant material about court cases and gun-grabber outrages that we treat only on the Facebook page. The Facebook page is also where we notify readers about pending auctions our associated FFLs are running to sell guns used in evaluations.

Also, we've begun production and distribution of videos on the Gun Tests YouTube page. There are about 20 gun-evaluation videos up currently, not including our SHOT Show coverage, and I produce five to 10 new videos each month, depending on the availability of firearms. Video gives us expanded capability to show functionality and talk about aspects of firearms performance that we can't convey on a piece of paper. Some videos are currently linked into existing files on the website as well.

GUN TESTS VIDEO

Likewise, if you're on Instagram, Gun Tests has an account, and we post new visuals from upcoming and past issues every day, including images that we don't have space for in the print magazine, because the virtual container is effectively limitless.

Like you, we are always in the market for a good gun, holster, bipod, ammo, magazine, trigger, or whatnot. So we're invested in bringing you our hard-nosed, unencumbered tests in head-to-head match ups — by whatever media possible. And, as always, we are very responsive to suggestions for tests you want to read about. So if you have line-ups of two or three firearms you might want to buy, but you want to see what we think first, send them to me at GunTestsEditor@icloud.com and we'll see what we can do. **GT**

— *continued from page 31*



Right: The MAC features a fiber-optic front sight and a nicely done, smooth slide top. The well-designed beavertail grip safety and checkered back strap offered a positive hold on the firearm. The MAC proved to be an excellent performer in tactical shooting as well as bullseye shooting, we thought.

or even between different types of quality ammunition. The best group came in at about an inch at 25 yards with the ASYM 185-grain load. The best average was recorded with the ASYM load at 1.4 inches. After the 100-round break in, the pistol never failed to feed, function, chamber, fire, or eject with full-power 230-grain loads. We should note that many factory 1911 handguns would not have functioned with the 185-grain target load either. The pistol produced the highest energy of the three handguns tested, turning in an impressive 400 foot-pounds at the muzzle with the 230-grain American Eagle load. While the increase in velocity over the 5-inch-barrel guns was modest, it was appreciated.

Our Team Said: We cannot think of anything we would add to the handgun, save for, perhaps, tuning the recoil springs. Toward that end, we bought a $29.95 Wilson Combat Spring Caddy that includes a carrier, springs, bushing wrench, and shock buffs to achieve reliable function with whatever load we preferred. By tailoring the spring weight to the load, we achieved good results with the 185-grain 750-fps load and also a handload using the Oregon Trail 200-grain SWC at 790 fps. The Bullseye isn't the most practical handgun, but there isn't anything else quite like it in the price range.

Written and photographed by R.K. Campbell, using evaluations from Gun Tests *team testers.* **GT**

COMING UP IN GUN TESTS

- AR-15s Pitted: BRC's BR4 versus the CMMG MK4.
- Professional-Grade Carry Guns from Colt: We selected two modern handguns that don't have extraneous features — the Colt 1991A1 and the Colt Series 70. Which one is really better?
- Are low-end 20 gauges worth the money? To find out, we selected a Yildiz SPZ ME, $430, handled exclusively by Academy Sports, and a Mossberg International Silver Reserve Bantam, $760.

GUN TESTS
THE CONSUMER RESOURCE FOR THE SERIOUS SHOOTER

Customer Service Contacts

If you have a problem with your magazine subscription, damaged or missing issues, need to change your mailing or email address, or renew your subscription, visit Online Customer Service at:
Gun-Tests.com
Click "Contact Us"

CALL TOLL FREE: 800-829-9084

SUBSCRIPTION DEPARTMENT
Gun Tests (US)
P.O. Box 8535
Big Sandy, TX 75755-8535

Gun Tests (Canada)
Box 7820 STN Main
London ON
Canada N5Y 5W1

QUANTITY REPRINTS
Reprints of **Gun Tests** articles are available.
Minimum Order: 1,000.
Contact:
GunTestsEditor@icloud.com

EDITORIAL OFFICES
Gun Tests *welcomes letters or email concerning our articles. Please include your name, telephone number, and hometown.*

We will respect your request not to publish personal information. Email comments to GunTestsEditor@icloud.com.
Or "Like" the **Gun Tests Magazine** Facebook page.
Twitter: @GunTestsMag

Because of daytime testing requirements, the writers and editorial staff can't answer phone inquiries. But the staff responds to email. If you have a question or comment about Gun Tests evaluations, please email individual writers at: GunTestsEditor@icloud.com. Thanks for your understanding.