

Bolt-Action .22 WMR

ithin the shooting community, Marlin is perhaps best known for sturdy center-fire lever-action rifles, such as the Models 336 and 1895. Marlin has offered an extensive line of rimfire models. however, including semiautomatics, lever- and boltactions. The 83TS we

recently received for testing is the latest in Marlin's line. It is a bolt-action rifle that is fed by a tubular magazine and chambered for .22 WMR, which offers more energy and range than .22 LR, and consequently greater utility for smallgame hunting.

The heart of the 83TS's action is the cylindrical bolt body, consisting

of a two-piece assembly with a non-rotating head. A stamped-steel extractor collar with horizon-

tally opposed claws at the three and nine o'clock positions retains the firing pin at the one o'clock position on the bolt face. The root of the bolt handle acts as a locking lug on the rear half of the bolt body. The tip of the bolt handle features a teardropshaped knob and its top is relieved to limit interference with an attached scope. When cocked, a red halfmoon indicator is exposed on the striker knob at the rear of the bolt body.

A 12-round tubular magazine fixed beneath the barrel feeds the 83TS's action. Loading begins with a

A stamped-steel extractor collar with horizontally opposed claws at the three and nine o'clock positions retains the firing pin at the one o'clock position on the bolt face.

MARLIN 83TS

MANUFACTURER: Marlin Firearms Co (Dept. AR), 100 Kenna Drive, North Haven, CT 06473, (203) 239-5621;

www.marlinfirearms.com CALIBER: .22 WMR

ACTION TYPE: bolt-action, repeating rimfire rifle **RECEIVER:** blued steel BARREL: .22"

RIFLING: Micro-Groove rifling (20 grooves), 1:16" RH-twist MAGAZINE: fixed tube with 12-round capacity

SIGHTS: V-notch rear adjustable for windage and elevation, fixed blade front, receiver grooved for tip-off rings

TRIGGER: single-stage, nonadjustable, 4½ lbs. pull STOCK: synthetic: length of pull, 13¾"; drop at heel, 2";

drop at comb, 11/4" OVERALL LENGTH: 41" **WEIGHT:** 5 lbs., 11 ozs. SUGGESTED RETAIL **PRICE:** \$244

The American Rifleman has used the phrase "Dope Baa" at least since 1921, when Col. Townsend Whelen first titled his column with it. Even then, it had been in use for years, referring to a sack used by target shooters to hold ammunition and accessories on the firing line. "Sight dope" also was a traditional marksman's term for sight adjustment information, while judging wind speed and direction was called "doping the wind."

WARNING: Technical data and information contained herein are intended to provide information based on the limited experience of individuals under specific conditions and circumstances. They do not detail the comprehensive training procedures, techniques and safety precautions absolutely necessary to properly carry on similar activity. Read the notice and disclaimer on the contents page. Always consult comprehensive reference manuals and bulletins for details of proper training requirements, procedures, techniques and safety precautions before attempting any similar activity.

SHOOTING RESULTS

.22 WMR Cartridge	Vel. @ 15' (f.p.s.)	Energy (fflbs.)	Recoil (fflbs.)	Grou Smallest	p Size in i Largest	nches Average
Federal Premium P765 30-gr. JHP	2009 Avg. 20 Sd	269	0.3	1.29	1.60	1.44
Win. Super X X22WMR 40-gr. JHP	1827 Avg. 49 Sd	297	0.4	0.75	1.20	0.94
CCI Maxi-Mag 0045 40-gr. FMJ	1741 Avg. 45 Sd	269	0.4	0.82	1.54	1.16
Average Extreme Spread:						1.18

Measured average velocity for 10 rounds from a 22" barrel. Range temperature: 75° F. Humidity: 21%. Accuracy for five consecutive, 10-shot groups at 50 yds. from a sandbag. Abbreviations: JHP (jacketed hollow-point) FMJ (full metal-jacket) Sd (standard deviation).

counter-clockwise twist on the knurled knob just below the muzzle, which releases the brass inner magazine tube. Once the inner tube is withdrawn, the magazine can be filled through a cartridgeshaped slot in the outer tube.

Pulling the bolt to the rear depresses the lifter, allowing the follower to push a fresh round into the feed throat. Energy from a coil spring on the receiver rebounds the lifter so it can hold the cartridge against the top of the feed throat until it is picked up by the forward movement of the bolt and fed into the chamber.

To maximize the potential of its .22 WMR chambering, a 22"-long, round-contour untapered barrel featuring Marlin's signature Micro-Groove rifling is pinned to the 83TS's tubular receiver.

stock aid the attachment of a sling for carry afield.

A thumb safety lever is positioned on the righthand side of the receiver behind the bolt handle recess. When engaged, an extension on the safety lever bears against a bump on the trigger to keep it from moving. Drawing the safety lever rearward engages the safety, and pushing forward releases it. Index notches marked "S" and "F" provide visual and tactile reference as to the safety's condition.

Supplied iron sights consist of a ramped front sight base with a fixed post attached to the barrel with a slotted screw, and a V-notch rear blade that is screwadjustable for windage and click-adjustable for elevation.

The synthetic unit is dovetailed to the barrel just ahead of where it meets the receiver to provide a sight radius of 181/6". A white triangle on the rear sight

blade draws the eye to the notch, speeding sight alignment, and white index marks on the side aid range adjustments afield. In addition to the supplied iron sights, the receiver of the 83TS is grooved for the attachment of standard 3/8" tip-off rings.

Most of the metal parts are finished to a medium-polish blue, the exceptions being the bolt-head and sear, which are left in the white, while the feed throat is chrome-plated.

The gently curved blade of the single-stage trigger is grooved and has no screws for adjustment. On our sample rifle, the trigger broke cleanly at 4½ lbs. pull with minimal take-up and overtravel.

For testing, we fitted the 83TS with a 4X Burris

scope and fired Federal, Winchester and CCI ammunition for accuracy and velocity. Results are shown in the accompanying table. During our test there were no failures to feed, extract or eject, nor were there any misfires. Rimfire rifles can be picky about ammunition, so this was a welcome surprise.

Afield, some staffers thought the 83TS was a little overlong; however, all agreed it was pleasingly trim and responsive when quick shouldering was required, and the MonteCarlo comb aided a repeatable cheek weld. Additionally, the stippled texture and checkering aided a positive grip even for gloved or sweaty hands.

Although the 83TS is an economy sporter, one gets the feeling that Marlin did not dispense with many of the little features that make a gun more pleasant to shoot. Those in search of the extra power that a .22 WMR chambering can offer a smallgame hunter may find the 83TS worth a look.

Given the 13³/₄" length of pull of the its stock, the 83TS is clearly made with the adult shooter in mind. The one-piece, fiberglassreinforced, synthetic unit features a pistol grip with recessed Monte Carlo profile comb. A shooter's purchase is improved by the stock's stippled texturing and molded-in checkering on the butt-plate, fore-end and pistol grip. The buttplate itself is gently curved and anchored into a recess in the stock by two Phillips-head screws. The trigger guard is molded as part of the stock. Quickdetachable studs at the fore-end and the toe of the

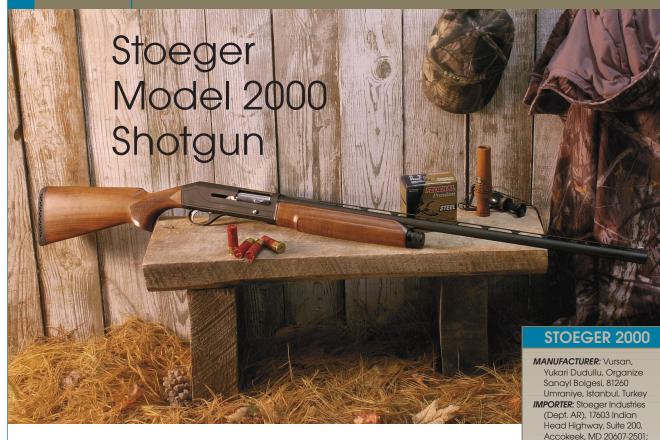


Iron sights consist of a ramped front sight base (below) and a V-notch rear blade (bottom r.) that is screw-adjustable for windage and click-adjustable for elevation. When cocked, a red indicator shows on the striker knob at the rear of the bolt body (r.).









nce known as a leading distributor of high-quality imported and domestic handguns and long guns, Stoeger Industries today markets only shotguns: the Overland and Coach Gun side-by-sides, the Condor over-unders, and the semiautomatic Model 2000, new for 2001.

The Model 2000 shotgun is available only in a 12-ga., 3"-chamber version and features an inertia-recoil action; black matte-finished aluminum receiver; walnut stock with machine-cut, 20lines-per-inch checkering and I" rubber buttpad. The barrel is chrome-lined in a choice of 26", 28" or 30" lengths-each with a 5/16"wide crosshatched ventilated rib having a 0.135" white bead at the muzzle. Every Model 2000 is supplied with interchangeable choke tubes in cylinder, improved cylinder, modified, improved modified and full constrictions; the

is indicated by a pattern of notches on the tube's front edge. Steel shot can be used with any constriction except full or improved modified. A Deluxe grade Model 2000 offers additional esthetic touches, such as a select American walnut stock, gold-colored trigger and a decorative etched floral panel on the receiver.

The Model 2000's inertiarecoil action features a heavy bolt body, rotating bolt head that protrudes from the front of the bolt body and a stiff spring positioned between the two parts. An angled cam cut in the bolt body is engaged by a thick pin on the bolt head; the cam cut causes the bolt head to turn in or out of engagement with the locking recesses in the barrel extension.

When the Model 2000 is fired, the gun, including the bolt head, recoils rearward; the inertia of the massive bolt body causes it to remain stationary momentarily. As a result, the bolt head moves rearward relative to the bolt body and compresses the stiff inertia spring. A fraction of a second later, the compressed spring violently throws the bolt body to the rear. The cam on the bolt body rotates and unlocks the bolt head from the barrel extension. As the bolt and bolt head move rearward. the recoil

RECFIVER: black-finished machined aluminum BARREL: 26", 28" or 30" (tested), ventilated rib CHOKES: interchangeable. screw-in choke tubes: full, improved modified, modified, improved cylinder,

(301) 283-6300:

shotaun

GAUGE: 12, 3" chamber

ACTION TYPE: inertia recoil-

www.stoegerindustries.com

operated, semi-automatic

MAGAZINE: four-round, tubular TRIGGER: two-stage,

3½ lbs. pull STOCK: American walnut: length of pull, 141/4"; drop at heel, 2½"; drop at comb. 11/4"

OVERALL LENGTH: 511/4" (30" barrel)

WEIGHT: 71/4 lbs. (30" barrel) ACCESSORIES: choke tube wrench, magazine limiter plug

SUGGESTED RETAIL PRICE: \$490, \$620 (Deluxe)

The Model 2000's bolt body has a cam track that is engaged by a pin on the rotating bolt head, turning the bolt head into and out of lock-up with the barrel extension. Note the lugs on the bolt head, as well as the massive inertia spring between the bolt body and bolt head.

degree of constriction

SHOOTING RESULTS



Improved Cylinder Tube

=Point of Hold

Remington GL126 Game Load

12-ga., 2½", 1-oz., No. 6 Lead

Average Pellet count: 218

Measured Velocity @3-ft.:

1288 f.p.s.

Remaining Energy Per
Pellet @40 yds.: 3 ft.-lb.

Recoil: 24.5 ft.-lbs.

Total Hits 103 (47%) 21" Inner Circle 55 (25%) 30" Outer Ring 48 (22%)

spring around the magazine tube is compressed, the hammer is cocked, a shell is released from the magazine tube onto the carrier and a claw extractor on the bolt head extracts the spent shell, whose rim then hits a springcushioned plunger in the left receiver wall to spin out of the ejection port. As the bolt goes forward, it pushes the shell on the carrier into the chamber, and the cam cut on the bolt body causes the bolt head to turn in to lockup with the barrel extension.

Compared to gas-operated actions, an inertiarecoil action runs cleaner as there are no gas ports to permit propellant gases to enter the action, is mechanically simpler and therefore potentially more reliable, and is capable of handling a wider variety of shells from light target loads to heavy hunting loads without any adjustment to the action.

As with the Benelli and many other European shot-guns, the Model 2000 also sports a cartridge drop lever that permits the shooter to cycle the bolt and remove the shell from the chamber without releasing or disturbing the shells in the magazine tube.

The Model 2000 has a conventional trigger group, featuring a trigger-blocking, crossbolt safety to the rear of the trigger quard.

We received a standard-grade Stoeger Model 2000 with a 30" barrel for testing. The gun impressed us very favorably. In appearance it possessed a refinement sometimes lacking in reasonably priced, imported shotguns: All machining was very clean and precise and the wood-to-metal fit was the equal of that of shotguns costing considerably more. When we worked the

action, the gun seemed gratifyingly tight; and upon dry-firing the gun we were pleasantly surprised at the 3½-lb. trigger pull.

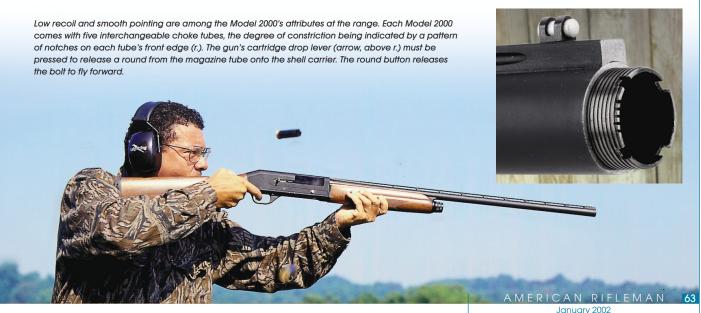
We function-fired our test Stoeger 2000 with the improved cylinder choke using three different loads. No malfunctions occurred when using game loads. However, occasional failures to extract the fired shell or cock the hammer were observed when firing light 1-oz. target loads. We also patterned the 2000 with the improved cylinder choke.

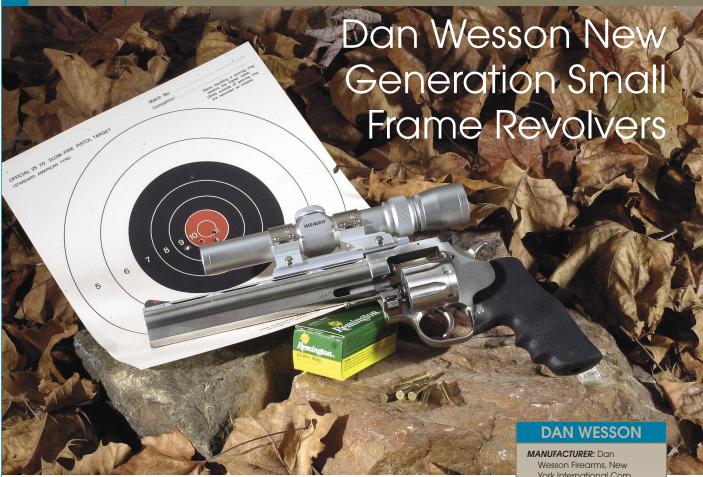
Fired at thrown targets, the Model 2000 swung smoothly and powdered the targets convincingly. The gun balanced nicely between the hands, and the stock naturally aligned the shooter's eye with the rib and front bead. Recoil was moderate and controllable with all loads except heavy turkey loads.

About the only complaint our test shooters had regarding the Model 2000 was related to the cartridge drop lever, which made both loading and unloading less intuitive and more complicated—at least for shooters used to American self-loading scatterguns. As shooter familiarity with the gun increased, however, complaints about the cartridge drop function abated.

Åt a list price of \$490 (standard grade), the Model 2000 represents an excellent value in a well-made, reliable and attractive semi-automatic shotgun. It is tailor-made for those seeking the benefits of an inertia-recoil action at an economical price.







or 2001, the new Dan Wesson Firearms Co. reintroduced doubleaction, small-frame revolvers in .22 Long Rifle and .22 WMR calibers. The NRA Technical Staff received a Model 722 VH6 in .22 Long Rifle and a Model 722M VH8 in .22 WMR for testing. Both were stainless steel models with 6" and 8" length vented barrels, respectively, an black rubber grips.

Dan Wesson New Generation Small Frame revolvers are built on steel .357 Mag.-size frames. While "over engineered" for rimfire calibers, the guns offer the heft and balance of larger-caliber models with excellent reliability and durability.

A popular feature of Dan Wesson revolvers is the interchangeable barrel system that allows shooters to easily switch barrels in the field. This is made possible

by a full-length barrel shroud and a barrel retaining nut that keeps the barrel under tension. Loosening the retaining nut with the provided wrench allows the barrel and shroud to be removed from the frame. Dan Wesson offers extra barrels individually, or the revolver may be purchased as a "Pistol Pack" with four different barrel lengths in a fitted carry case.

To assure a solid lockup, the cylinder is locked at both the front and the rear. The rear locks by means of a springloaded ball bearing in the frame that snaps into a recess machined into the rear face of the cylinder. The front is locked by a spring-loaded, semi-circular tab on the crane that mates to a recess cut into the frame.

All Dan Wesson revolvers are equipped with a transfer bar safety system that is designed to prevent them from discharging unless the trigger is pulled.

A fixed front blade with plastic insert and fullyadiustable rear siaht are standard equipment on Dan Wesson Small Frame revolvers.

York International Corp. (Dept. AR), 119 Kemper Lane, Norwich, NY 13815; (607) 336-1174; www.dan wessonfirearms.com

CALIBER: .22 Long Rifle or 22 Winchester Magnum

ACTION TYPE: double-action. six-shot revolver

FRAME: brushed satin stainless steel or blued carbon steel

BARREL: interchangeable, 2½", 4", 6", 8" (tested) or 10" with vented rib

RIFLING: six-groove, 1:18%" RH

SIGHTS: serrated blade on ramp front with red plastic insert, notch on blade rear click adjustable for windage and elevation

TRIGGER: double-action with overtravel adjustment, 4% lbs. single-action, 12 lbs. double-action pull

OVERALL LENGTH: 111% " (with 6" barrel)

WIDTH: 2½" HEIGHT: 5"

WEIGHT: 56 ozs. with 8" barrel ACCESSORIES: wrenches

barrel-cylinder gap gauge

SUGGESTED RETAIL PRICE: .22 Long Rifle \$549-\$747, Pistol Pack \$1,281; .22 WMR \$580-\$779, Pistol Pack \$1,358



Our New Generation Dan Wesson Small Frame test guns exhibited excellent workmanship, fit and finish from the box. Stainless models sport a brushed, natural finish while carbon steel models have a mediumpolish blue finish. Customers may choose between the two types or specify a two-tone revolver with mixed parts and finishes.

Operation of Dan
Wesson revolvers follows
established revolver principles with a hand that
extends from the recoil face
to index the cylinder by
pushing on slots cut into its
rear face. Once in position,
the cylinder is locked by
means of a square pin that
extends upward from the

bottom of the frame to engage slots cut into the cylinder's outer surface.

For testing, we mounted a 1.5-4X Leupold scope on the 722M. Mounting proved easy, but we did note the revolver became something of a handful with an all-up weight of nearly 70 ozs.

Nonetheless, as the results in the accompanying table

All Dan Wesson

revolvers come with a feeler gauge allow-

ina the barrel-cvlin-

der gap to be set

precisely for best

accuracy.

indicate, the 722M proved quite accurate. The weight eliminated recoil, and the light, crisp trigger pull made accurate shooting easy. We also fired the .22 Long Riflecal. Model 722 and found the balance and handling of that model delightful.

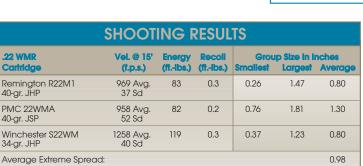
During the first 100 .22 WMR rounds fired, we experienced 8 percent misfires. We then removed the grip, loosened the mainspring adjustment plug and increased the tension on the mainspring. The misfires disappeared, showing the flexibility of the Dan Wesson design.

As the .22 WMR offers only a minor ballistic advantage over the .22 Long Rifle when fired from handguns, for most shooters we would recommend

the Model 722 over its more powerful brother as the ammunition is less expensive and the ballistic performance similar. For smallgame hunting, the .22 WMR Model 722M would be an acceptable choice. Shooters who prefer the reliability and safety of a highquality revolver will want to seriously consider the Dan Wesson New Generation smallframe guns.



Dual cylinder latching is one popular feature of Dan Wesson Small Frame revolvers. Cylinders are latched at the front by means of a semi-circular tab in the crane body that locks to a cutout in the frame and at the rear by a spring-loaded ball bearing that snaps into a recess cut into the rear face of the cylinder.



Measured average velocity for 10 rounds from an 8" barrel. Range temperature: 84° F. Humidity: 78%. Accuracy for five consecutive, five-shot groups at 25 yds. from a sandbag. Abbreviations: Sd (standard deviation), JHP (jacketed hollow-point), JSP (jacketed soft-point).





OOW 1928 COLT

MANUFACTURER: Ohio Ordnance Works, Inc. (Dept. AR), 310 Park Drive, Chardon, OH 44024; (440) 285-3481; www.ohio ordnanceworks.com

MECHANISM TYPE: recoiloperated, semi-automatic

CALIBER: .30-'06 Sprg. (tested), .308 Win., 7x57 mm, 8x57 mm, 7.65 mm Argentine

RECEIVER: blued steel **OVERALL LENGTH:** 48¼" BARREL LENGTH: 24" WEIGHT: 86 lbs., 12 ozs. (with tripod and filled water

iacket **MAGAZINE CAPACITY: 250**round-capacity belt RIFLING: four-groove; 1:10"

RH twist TRIGGER: single-stage, 8½ lbs. pull

SIGHTS: hooded blade front, ladder rear adjustable for windage and elevation

STOCK: wood hand grip ACCESSORIES: tripod, mount, water can, condenser hose, two 250-round ammunition belts, belt loader, ammunition box, manual. Others available.

SUGGESTED RETAIL **PRICE:** \$5,995

ith America on the verge of war in February 1917, John Moses Browning went to Washington with two new arms designs to be tested by the U.S. War Department. One was "The Browning Heavy Water Cooled Machine Gun." It was adopted as the "Browning Machine Gun, Caliber .30. Model of 1917." The M1917 served with distinction during the latter months of World War I and with modifications as the M1917Al in World War II and Korea.

After World War I. commercial manufacturing rights to Browning's automatic arms reverted to the Colt Patent Fire Arms Mfg. Co., which marketed the "Colt Automatic Machine Gun— Rifle Caliber." In 1928, the Argentine army contracted with Colt for 1,000 guns in 7.65 mm Argentine, although some were later chambered in .30-'06 Sprg.

Ohio Ordnance Works. Inc., makers of the semiautomatic-only M1918A3 Browning Automatic Rifle (August 1997, p. 49), has introduced a semi-automaticonly version of Browning's water-cooled Model of 1917 based on the Colt commercial guns made for the Argentine contract. As with the firm's BAR, the new gun is a mixture of original, new and modified original parts that ensure fully automatic fire control parts cannot be used. The gun comes as a package complete with a tripod, mount, water can, condenser hose, two 250round ammunition belts, a belt loader and an ammunition box. Other accessories are also available.

OOW starts with the original Colt commercial parts kit and completely refurbishes every piece used, and it makes some





new parts in-house on its own CNC-machines. The polish work on the barrel jacket alone requires about 60 man hours before blueing, and the result is likely better than what left the Hartford plant 77 years ago. Throughout, the workmanship of the 1928 was excellent with no corners cut, and the bluing in particular is some of the best we have seen in recent years.

Operation is identical to that of the original save for the fire-control parts, and the 1928 fires from a closed bolt. After loading the belt with cartridges (use the belt loader, as doing it by hand is extremely tedious) place them in the open ammunition box on the gun's left side. With the top cover closed, insert the belt's brass tab through the feed block and pull it briskly to the right. Pull the bolt handle rearward, compressing the barrel plunger spring and driving rod spring. Releasing the bolt half-loads the gun. Retracting the knurled operating handle again then releasing it readies the gun for firing by simply pulling the trigger. The gun will fire once every time the trigger is pulled until the belt is empty.

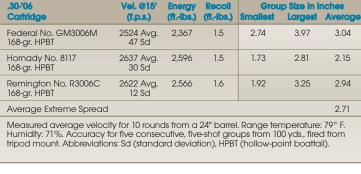
After firing, the barrel, barrel extension and bolt

recoil 5/8", then the breech lock pin strikes the slanting surfaces of the lock frame projection, freeing the bolt from engagement with the barrel extension. The barrel extension recoils farther back on

the accelerator, and the claws on the accelerator separate the bolt from the barrel and extension. As the bolt travels reward it compresses the driving spring, and the extractor—mounted on the top of the bolt—pulls the cartridge case out of the chamber, then the ejector kicks the spent case out of the bottom of the receiver. There is quite a lot more going on in terms of operation, and it is detailed in the 116-page facsimile of FM23-5 "Browning Machine Guns Caliber .30.'

The right sideplate is thicker than that of a standard 1928, and all the internal parts, such as the bolt, are thinner than the originals on the right side to prevent fully-automatic parts from being used. As many guns in the Browning M1917 family uses similar parts, OOW employs some parts of newer or better designs where appropriate. For example, the 1928 originally

had a captured recoil spring driving rod, but OOW uses M1917A1-style recoil springs and driving rods instead. Also, new M1919A4 or M1917A1 bolts are used. The trigger mechanism has been extensively modified to include a disconnector



SHOOTING RESULTS



The four-groove, 24" new G.I. barrel is surrounded by a water-jacket for cooling during sustained fire, and a blued tapered flash hider is screwed to its front. The jacket holds up to 7½ pints of water.

mechanism on the top of the original trigger piece, and a return spring is mounted on the spacer at the rear of the trigger group.

The tripod and mount are Colt commercial units. which differ somewhat from both the U.S. M1917 and M1917A1, and have been fully refurbished by bead blasting on the brass parts and stripping and repainting the steel parts. Our sample looked as if it were shipped from Hartford yesterday. Needless to say, a full range of adjustments are possible and space

precludes us from going into detail on those many, many possibilities.

2.81

3.25

2.15

2.94

2.71

Members of our staff were so eager to shoot the 1928 that we almost had to institute a lottery system to see who would go to the range. There were a few failures to feed, attributable to one problematic belt, out of the more than 1,000 rounds fired, and accuracy results are for 100-yds. It was a chore to set up, but an absolute joy to shoot, and we did so until there was no more spare .30-'06 Sprg. ammunition left. The accuracy was good, but would likely improve after we gain more familiarity with the tripod and mount settings.

Admittedly the suggested retail price is steep at \$5,995, but, as Colt Commercial guns are virtually unobtainable—if you can find one, it will be very pricey—the 1928 is an "affordable" alternative for those who are collectors of such guns or simply John Browning enthusiasts. OOW also offers a Parkerized version that will cost \$3,850. OOW's 1928s are fun, fitting modern tributes to the genius of John Browning.



Unlike the M1917, which had no manual safety, the 1928 uses a backplate mounted safety unit (above I.) as offered with Colt commercial auns. It is on the backplate, and the knurled lever is pushed forward to the "on" position, which puts a bar in the trigger's path preventing it from traveling rearward enough to release the sear. The OOW is fed by 250-round belts. After loading the belt with cartridges, place them in the open ammunition box on the gun's left side. With the top cover closed, insert the belt's brass tab through the feed block and pull it briskly to the right.