



# The Great Wilhelm Brenneke

*Remembered in this country primarily for his shotgun slugs, he was to Europeans what Newton and Weatherby have been to American riflemen!*

*By Jack Lott*



*Despite the popular New World misconception, the European continent has been fertile ground for big-game hunting, thus giving impetus for the development of ultra high velocity ammunition by such men as Brenneke.*

■ Five Western nations were responsible for the development of ultra-high velocity rifle ammunition: Great Britain, Germany, Switzerland, France and the United States. When we think of the U.S. contribution, we naturally recall Charles Newton, the designer of the .30 Newton, the .250-3000 Savage and other pioneer advanced rounds. For Great Britain, the remarkable .280 Ross comes to mind. Switzerland contributed the genius of Colonel Rubin, inventor of the compound jacketed lead core bullet and father of the bottlenecked, smallbore, high velocity military cartridge. France's Vielle invented the first successful smokeless rifle powder. These names and their contributions remain as part of our historical heritage, but of them all, only the name of Wilhelm Brenneke of Germany remains commercially alive—on the headstamps and box labels of his rifle and shotgun ammo and his projectiles, Brenneke TIG and TUG bullets and Brenneke shotgun slugs.

Once produced exclusively by the Industrie Werke, Karlsruhe, under the famous D.W.M. (Deutsche Waffen und Munitionsfabriken) brand, in recent years the production has been in the capable hands of another West German firm, Dynamit-Nobel.

Brenneke cartridges and TIG and TUG bullets are produced by Dynamit Nobel under the R.W.S. label and Brenneke rifled shotgun slugs under the Rotweil label. D.W.M. ammunition, once found throughout the world, is no longer made since the folding of their operations in the early Seventies.

This continuity of the production of Brenneke ammunition and components is a tribute to the advanced inventive genius of Wilhelm Brenneke, and is the more remarkable for having survived the devastation of both World Wars.

Wilhelm Brenneke was born in Hannover, then in the Kingdom of Prussia, in 1865, one of eight children. His father was a civil servant. He soon displayed artistic ability, but it was his grandfather, an avid hunter, who first ignited Wilhelm's love of hunting and firearms. His earliest efforts at constructing hunting arms were confined to bows and arrows and powerful catapults capable of driving lead balls 300 meters. By the age of 12 he was making good crossbows, and at 13 he spent his savings on his first rifle, a rimfire "tesching" which he used to reduce a population explosion of mice in a city park. At 13 he also designed and made his first firearm with the sim-

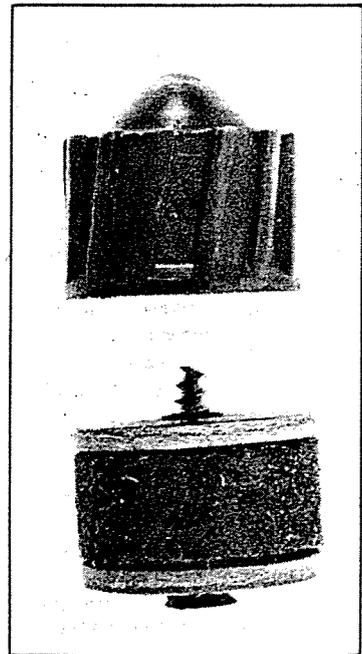
plest of hand tools, a 6mm "magnum" with a brass barrel and a charge of black powder which nearly filled the barrel. Young Wilhelm loaded this first of his gun designs with characteristic disdain for convention, but took care to test it via the remote control of a string tied to the trigger. It failed "proof" by blowing up, but while educating young Wilhelm on the limits of pressure overloads, it certainly did not discourage him.

When he was 14, he handmade a double barrel breech-loading shotgun, an extremely advanced project for an aspiring gunmaker today with the best machine tools. Wilhelm made the gun by hand, and a master gunmaker tested it and pronounced it functional and safe. Apprenticing as a machinist and toolmaker, Wilhelm also joined the Imperial German Navy as a diver. Optics, marine design and automobiles fascinated Wilhelm, but his life's work began in earnest when in 1895 he established his Brenneke Gewehr und Geschossfabrik (gun & bullet factory) in Leipzig. Like most gunmakers, Brenneke had to produce conventional guns to feed his family and pay the rent, but his spare hours were filled with new designs of actions and cartridges as well as bullets.



Author Lott put Dynamit Nobel 12-ga. Brennekes through their paces in a Browning Auto-5 shotgun. He found Brenneke slugs in all gauges (20, 16, 12) to be accurate.

Rifled ribs on Brenneke slug might give a slight spin to the projectile. The attached tail-end felt wads provide for an improved gas seal and also allow for added stability. Wads are screwed to alloy slug.



One of the earliest gunmakers to realize the significance of high velocity to the hunter, Brenneke concluded that high striking velocities required new concepts in bullet design. An avid stag and boar hunter, Brenneke performed many autopsies on game carcasses to trace the performance of expanding bullets. He understood that to transform such small caliber bullets into effective stopping projectiles, they would need higher velocities than the 2,000 to 2,200 feet per second (fps) of the typical military-type "high velocity" cartridge of the day. He also understood that high striking velocity with shallow penetration was undesirable, and that rapid expansion of the nose section must be combined with the near-intact retention of the aft section of such a bullet for adequate penetration. These mutually contradictory aspects, he realized, only become complementary when they were controlled by compound bullet design.

During his early *buchsenmacher* (gunmaker) years, Brenneke devoted a major part of his efforts to designing a better locking system for the popular side-by-side, over and under and three-barrel combination guns (drillings). External hammer actions for these and double barrel shotguns were still popular at the turn of the century, and Brenneke designed an improved hammer action which was cocked when the barrels were opened via the top lever, and with the hammers so low the action appeared hammerless from a short distance. Brenneke's idea combined both aesthetics and safety, and this design was combined with an unusual grip safety which kept everything locked until the "quadruple" safety was depressed, much like that of our Colt Model 1911. It was called "quadruple" because it locked both hammers and both underbolts.

Brenneke's next invention was his famous "*Brenneke Verschluss*" (Brenneke Lock) for drillings, double rifles and shotguns with extra rifle barrels. These were



This selection of Brenneke products typifies the designer's range. All are available from Dynamit-Nobel.

made on an improved Anson & Deeley (boxlock) system, the drillings with a single crossbolt (Greener) plus Purdey underbolts, the double rifles with Kersten (double Greener) and Purdey underbolts. The Brenneke lock consisted of steel wedges extending from either side of the barrels, which fitted precisely into matching recesses in the action bar. These wedges were virtually invisible when in place, but internal types were also made in which the wedges disappeared into closed recesses. When combined with Kersten top and Purdey under-bolting, the Brenneke *Verschluss* made a break-top action suited to the hot rimmed versions of Brenneke's advanced cartridges. Brenneke's drillings were also "*selbstspanners*" (self-openers) which automatically opened when the top lever was rotated.

It has been stated that in 1898 Brenneke introduced the straight-tapered 8x72R for doubles, drillings and single shots. Later, it is alleged, he introduced the 7x72R. In Brenneke catalogs no mention is made of these as proprietary rounds but simply as "normal" (standard) rounds for which his bullets were also loaded. Brenneke's first successful rifle bullet was the TIG (*Torpedo Ideal Geschoss*) for "Torpedo Ideal Bul-

let." It was made in a variety of nose forms, but all had dual cores—the front of soft lead and the rear of hard lead with a cavity into which the front core drove on impact to enhance expansion. The typical TIG had a cone-shaped base for a boattail effect, as well as a "*scharfrand*" (cutting edge) for punching a caliber-size hole through the skin for better bleeding. The TIG was and is designed for such lighter-boned game as deer and antelope of small to medium size. It made its advent around 1912, the year Brenneke introduced the first of his famous 64-millimeter-length series of rimless magnum-type cartridges wearing the standard Mauser rimless head of .30-06 or 8mm size.

With a special Rottweil powder developed for the case, the original 8x64mm Brenneke gave its 223-grain bullet of "S" (.323-inch) diameter a muzzle velocity of 2,808 fps. That was magnum velocity for such a bullet, in the true meaning of "magnum" as a round that gives well over standard velocity for its caliber, not simply a case with a belt. The nose of the TIG had a brass pin in it to protect the nose from magazine battering, but the pin is now discontinued. The cone-shaped base combined with the semi-spitzer nose to create great ballistic efficiency for retaining maximum velocity. It was probably the first commercial boattail expanding bullet, and Brenneke must have regarded it as important for countering the tendency of the typical spitzer bullet to tip on striking bone or twigs, by moving the center of gravity further forward.

Being German, Wilhelm Brenneke knew that perhaps most hunters of the landed class who hunted the great game preserves of Europe used double barreled or combination break-top rifles and drillings. When he designed his 8x64 rimless, he also created a rimmed counterpart for such handmade guns, the 8x65R of slightly less velocity per bullet and less pressure as is correct for the drop-barrel rifles. At first,

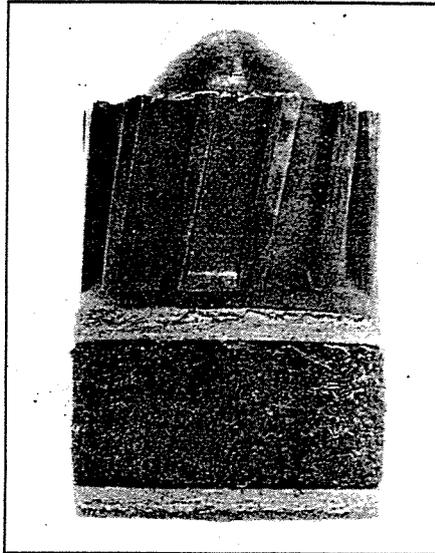
## BRENNEKE

these were made with "S" diameter (.323-inch) grooves, as had been regulation for the military 8x57 Mauser since 1905. After World War I and the Versailles Treaty with its prohibition of German production of "S" (.323-inch) diameter barrels or ammunition, all German 8mm rifles were produced in the old .318 caliber. However, there was a clever evasion of the Treaty in that many manufacturers produced 8mm barrels with .3215-inch to .322-inch groove diameters and reamed chamber necks oversized to accept .323 bullets without creating pressure rises when "S" bullet rounds were fired in nominally .318-proved rifles. Do not, however, regard this as an invitation to fire "S" (.323-inch) diameter ammunition or handloaded bullets in barrels bored for the smaller (.318) diameter bullets. No metric caliber arm should be fired before slugging the barrel to determine precisely what the groove diameter is, and then only fire correct sized bullets. Early in Hitler's regime, the Versailles Treaty was simply tossed aside in all its provisions, and production resumed of the "S" bullets and ammunition.

During the worst days of World War I, in 1917, Brenneke introduced his brilliant 7x64 and its rimmed counterpart, the 7x65R. These two advanced .284 caliber rounds, especially the 7x64 rimless, remain Brenneke's most popular chamberings, and are standard with most European production and custom manufacturers such as Steyr, Mauser, Brno, Heym, Voere and the Ferlach makers. The various custom makers of break-top double rifles, combination guns, drillings and single-shots all produce perhaps more such arms for the 7x65R than for any other rimmed case. A friend in England even had the London firm of John Rigby build him an over-and-under sidelock for it, mainly because Kynoch ammo is no longer made, and the 7x65R is a top round for Scottish red deer.

The United States has an over 60-year

record of producing of an almost identical round to the 7x64, but as a wildcat, the 7mm-06, also known as .285 O.K.H. A commercial form is, of course, our familiar and excellent .280 Remington/7mm Express. The cases aren't identical, but the capacities are so close that the Speer and other loading manuals give the same loads for all. Pressures for the 7x64 are held to 51,000 p.s.i. and those of the 7x65R to within 47,000, showing the remarkable efficiency of these medium-sized beltless



**Brenneke first introduced his slugs in 1898, and since then they have earned a reputation for accuracy.**

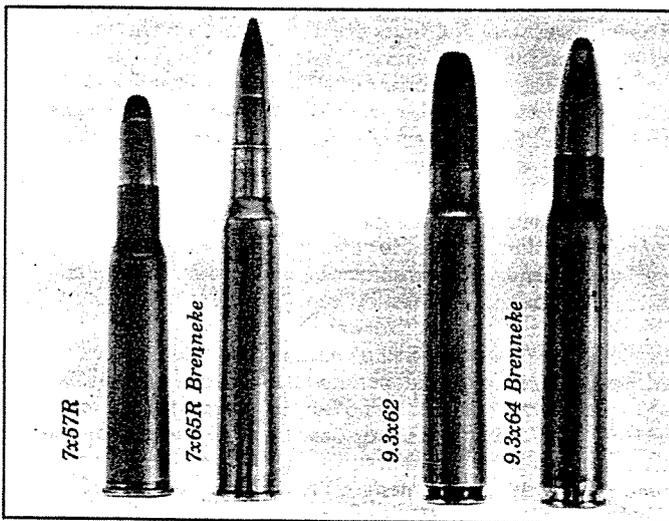
magnums, which, unlike so many bulkier belted magnum cartridges in the smaller calibers, are well within bore capacity.

The excellence of the 7x64 is well attested by the amount of wildcats created on the .30-06 case in .284 (7mm) caliber and the continued commercial production of the .280 Remington/7mm Express. The latter is justly esteemed by our best custom makers and many of their clients who want the best ballistic coefficient bullets and flattest trajectories in standard Mauser-type actions.

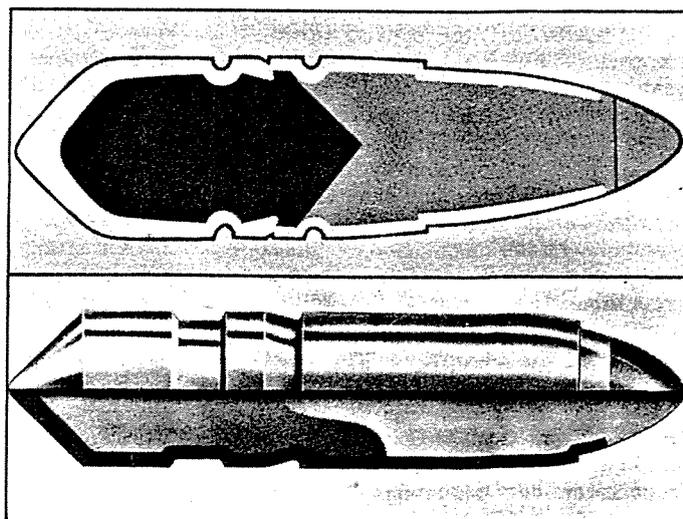
Although undoubtedly versatile and powerful cartridges, the 8x64 and the 8x65R are now obsolete, most European gunmakers long having preferred the 7x64 and 7x65R. However, rifles for the 8x64 and the 8x65R need not run out of ammo. Our .30-06 brass can be used for 8x64 cases and the R.W.S. Boxer-primed 9.3x74R cases for the 8x65R. The 8x65R cases from the 9.3x74R must be neck-reamed after trimming to length.

After producing his 8mm and 7mm calibers, Brenneke wasn't satisfied that he had adequately covered the power and caliber range demanded by the heaviest thin-skinned game of Africa and Asia, the great cats, eland, or the great bears of North America and Eurasia. Thus was born the famous 9.3x64 and the 9.3x65R in .366 caliber, topping the energy of both the belted rimless .375 H&H Magnum and the .375 H&H Flanged Magnum. Brenneke's 9.3x64 did so in a rimless case that was shorter than the .375's case but fatter than the .30-06-sized brass he used for his 7x64 and the 8x64. The 9.3x64 case is about the size of the .35 Newton case, and brass for the 9.3x64 can be made from .375 H&H Magnum brass with the belts turned off re-formed and cut off. For the 9.3x65R the .375 H&H Flanged Magnum brass can be produced by B.E.L.L. can be modified. Since some of the original case wall will end up as part of the shorter Brenneke case neck, it will be necessary to obtain neck reaming dies from R.C.B.S., along with a trim die and full length sizing and seating dies. The neck reaming prevents the bullet from being wedged too tightly between neck and chamber, causing a rise in pressure as it fights free from the unduly heavy grip of the too-thick neck.

Brenneke's TUG (*Torpedo Universal Geschoss*) bullet is for tougher and more dangerous game than is the more frangible TIG. Though outwardly similar—both having the cone-shaped boat-tail base and "scharfrand"—the key to its deeper penetration is the cone-nosed hard alloy rear core. This same bullet is also loaded in



**The 7x65R is Brenneke's most popular chambering. The 9.3x64 topped .375 H&H Mag. energy. Both are shown compared with nearest metric standard rounds.**



**Brenneke TUG (top) was designed for use against tougher muscled, heavier-boned game. The TIG (above), with rear core cavity, is ideal for lighter-boned quarry.**

the slightly slower 9.3x74R and the rimless 9.3x62 case.

With its 293-grain TUG bullet, the 9.3x64 as loaded by Dynamit Nobel under the R.W.S. label attains 2,570 fps and a muzzle energy of 4,205 foot pounds. The standard weight 285-grain steel-jacketed solid obtains 2,690 fps and 4,575 foot pounds of energy from the standard 25.6-inch barrel. This compares with the R.W.S. 300-grain .375 H&H Magnum load at 2,590 fps and 4,465 foot pounds of energy from the same length barrel. In Europe, the 9.3x64 continues to increase in popularity, and it does not surprise one that it rivals the incredibly popular .375 H&H Magnum, and rightly so.

It is common to see Brenneke caliber rifles in Africa, Alaska, Canada, and even behind the Iron Curtain in the hands of wealthy West German sportsmen who spend tons of deutsche marks each year in search of trophy game. I have encountered them myself somewhat less than a million miles from Windhoek, the capital of South West Africa, and know one Afrikaner in Outjo whose greatest joy is his Wilhelm Brenneke .375 Magnum Mauser. I can also understand why the remarkable 9.3x74R has taken over the role formerly shared with the Brenneke 9.3x65R—it will do all that such a powerful medium bore will do, and do it with less pressure and reduced bullet frangibility. But for the European or any lover of light caliber double rifles, the Brenneke 7x65R remains the ultimate stag cartridge (rimmed) for break-top guns, and it would be my choice for such a rifle if I were having one made today.

After saying so much about Brenneke's rifle calibers, it is time to discuss his most famous invention, the widely distributed Brenneke shotgun slug, known everywhere simply as "Brennekes." Brenneke introduced the first of his long line of shotgun slugs in 1898 in competition with the von Witzleben and other slugs then used. Several variations have been produced since then, all having the basic Brenneke features in common—the rifled ribs of the lead

alloy front section, and the tail-end felt was screwed to the nose. No overpowder wads are used with Brenneke slugs since the gas-sealing, slug-attached wad serves that function as well as adding some stabilizing effect and aerodynamic quality. The slugs were designed to be fired from a full choke barrel, with the rifled ribs easily flattening on entering the choke and effecting a fit with the bore at that point without causing bulging of the tube. Whether or not such ribs create a stabilizing spin is still ques-



*The Brenneke TUG bullet configuration is ideal for heavy-boned beasties like the European elk.*

tioned, but they probably do cause a slight bit of spin when they fit the choke enough to enable friction to work in the direction of the rib angle. Whatever the value of such a spin or the effect of its lack is in the realm of theory, Brenneke slugs have a deserved reputation for accuracy, with proof house test groups of five shots (12 gauge) on record as producing 1½-inch by 1¼-inch groups at 60 meters (66 yards). The factory claims accuracy to average 3 inches at 50 yards and 6 inches at 100 yards. A lot depends on the individual barrel, and natu-

rally, adjustable rifle sights must be used for best results.

A Model 1931 was produced for Paradox-type guns with smooth bores to within 2 or 3 inches of the muzzle where heavy rifling takes over to impart a spin. The Model 1930/32 established an international reputation for 12-gauge Brenneke slugs as suitable for large game, including the great bears, wild pigs, lions, tigers, leopards, and even the formidable West African forest buffalo. The Model 1935 was an improvement, and a steel point nose version was available for tougher species. I know of one hunter who used nothing but 12-gauge Brenneke slugs for the small red forest buffalo in the Cameroons, but he always took lung or heart shots from the side at very close range. I do not suggest that these fine 12-gauge slugs are in any way suited to the regular hunting of any thick-skinned dangerous game, nor for any larger than lions or tigers, and then only when very close—within 25 yards. Brenneke slugs and loads are produced in 12, 16 and 20 gauges.

To check the accuracy and functioning of all three gauges of today's Rottweil Brenneke slug ammunition, I obtained a supply of each through the courtesy of Mr. Richard Lindt of Dynamit Nobel, America, Inc. For the 12 gauge I used my Browning Auto 5; for the 16 gauge, a fine old Parker double, gorgeously customized by Pachmayr; and a Remington 1100 in 20 gauge for that bore. I wanted to see how the slugs grouped without adjustable sights, since probably most slug users would use them in their ordinary game guns with typical single front beads, with or without ribs. I went to the Angeles Ranges north of Los Angeles and set the target frame at 25 yards, which is about the average range in forest hunting with shotguns. If I had been using adjustable sights, I would have fired at 50 yards. The Browning 12 gauge auto was fired using the top line of the rib and the front bead held concentric with the bull. After a couple of trial shots, I fired three 12-gauge slugs which made a 1¼ by ¾-inch group

## BALLISTICS OF BRENNKE SLUGS

Gauge	Bullet Weight (grains)	Barrel Length (inches)	VELOCITY, FEET PER SECOND					ENERGY, FOOT POUNDS				
			Muzzle	25 yds.	50 yds.	75 yds.	100 yds.	Muzzle	25 yds.	50 yds.	75 yds.	100 yds.
12	491	30	1,593	1,384	1,213	1,083	997	2,756	2,090	1,606	1,280	1,049
16	427	28	1,510	1,303	1,129	997	903	2,163	1,606	1,208	947	774
20	364	28	1,513	1,300	1,123	988	890	1,852	1,367	1,020	788	637

Height of trajectory in inches when zeroed at ranges shown.

Gauge	IRON SIGHTS: LINE OF SIGHT 0.79 INCHES ABOVE CENTER LINE OF BARREL				TELESCOPE SIGHTS: LINE OF SIGHT 2.0 INCHES ABOVE CENTER LINE OF BARREL			
	25 yds.	50 yds.	75 yds.	100 yds.	25 yds.	50 yds.	75 yds.	100 yds.
12	+0.24 +0.75 +1.46	0 +1.06 +2.48	-1.62 0 +1.69	-4.86 -2.79 0	-0.35 -0.08 +0.51	0 +0.71 +1.93	-1.02 0 +1.89	3.85 -2.52 0
16	+0.35 +0.98	0 +1.26	-1.89 0	-5.49 -3.43	-0.08 +0.24	0 +0.86	-1.26 0	-4.80 -3.03
20	+2.25	+3.78	+3.74	0	+1.38	+3.07	+3.27	0

\*Weight of slug, including felt and cardboard wads.

## BRENNEKE

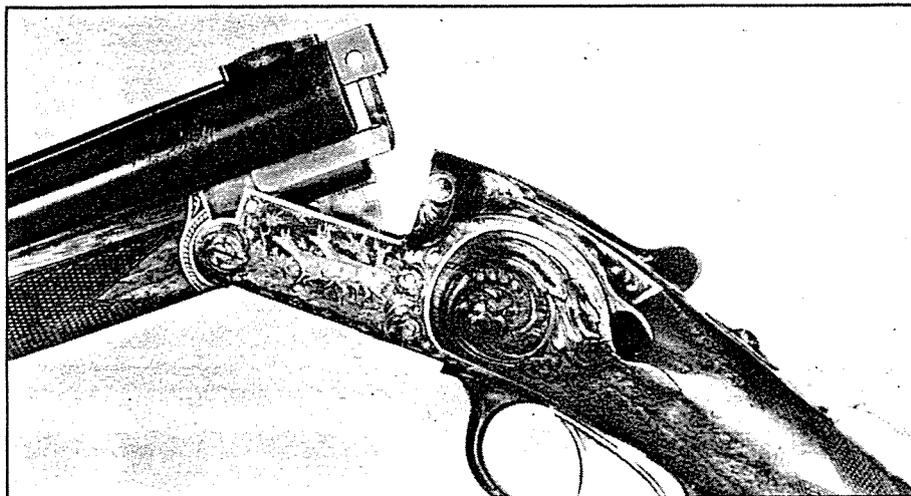
just into the 8-ring at 8 o'clock. The holes showed that the slugs traveled point first, even punching out the pattern of the rifled ribs.

With practice, I'm sure I could have done about as well at 50 yards. The 16-gauge slugs were fired through the right barrel of the Parker, with the rib held parallel to the line of sight and the bead held central to the bull. With it I got the same sized group—1¼ by ¾ inches—as with the Browning, but the point of impact was at 7 o'clock with two touching the black and one in the white 5-ring. For the 20-gauge slugs, I fired the Remington 1100 at a coffee can offhand, hitting it four out of five times with the full choked gun. The Poly-Choke of the Browning was set at Improved Modified and the Parker choke was Modified. I could not draw any conclusions as to which choke is best, which is good since the Brennekes are designed for any or no choke. I suspect that with an adjustable sighted repeating or over-and-under gun, I would obtain best grouping with a modified choke or a not-too-tight full choke. In my experience, most side-by-side doubles crossfire at under 25 yards with slugs, but I didn't check this out with the 16-gauge Parker.

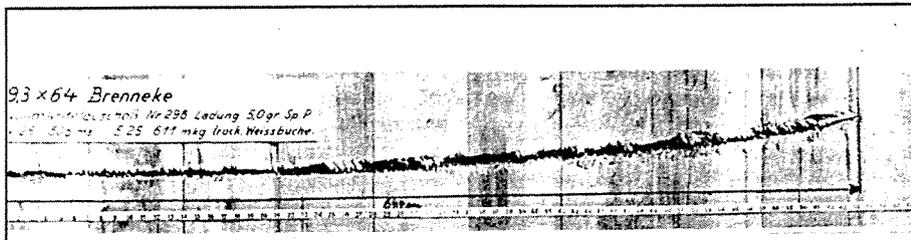
Wilhelm Brenneke's success in producing fine guns, custom Mausers and his remarkable rifle and shotgun ammunition will keep his name a household word among the world's hunters as long as centerfire ammunition is used. In 1945, at age 80, Wilhelm Brenneke surveyed the bombed ruins of his Leipzig works and felt the crushing weight of a devastating and personal tragedy—his sons and grandson had perished in the war. At his feet lay the ruins of his life's work, and he was long past the age when ordinary men think of starting anew. But Wilhelm Brenneke was not an ordinary man, even at 80. West Berlin loomed as an island of freedom and

hope, rising Phoenix-like from the dark pall of the Soviet-occupied zone. Wilhelm somehow managed to reach West Berlin. He started again at 23 Dominicusstrasse in the district of Schoeneberg, where before his death in November 1951, aged 86, fortune smiled on him—again. His products and capabilities were in great demand to the end. Adjectives such as indomitable or tenacious are inadequate to describe so heroic a will and drive in this incredible octogenarian. Today his business carries on in the capable hands of his daughter, and the demand for his products increases.

If, as Oscar Wilde said, "Imitation is the sincerest form of flattery" (I think it was Wilde), then Remington sincerely did shooters a favor by making available a domestic cartridge (the .280 Rem./7mm Express) which, practically speaking, duplicates Brenneke's great 7x64. Americans who want to experience the unique capabilities of Brenneke rifle and shotgun ammunition or obtain Brenneke TIG and TUG bullets for handloading can contact Dynamit Nobel of America, 105 Stonehurst Court, Dept. GA, Northvale, NJ 07647.



In Brenneke's unusual external-hammer, 3-barreled drilling, the safety plunger (above the grip) locks the bolting and the hammers until it is depressed as the gun is grasped. Styling is typically Germanic.



The 25¼-inch path of a solid 285-grain Brenneke 9.3x64 bullet through hardwood is about equal to the performance of the .375 H&H Magnum. Both of these substantial rounds are used for similar-type game.

### BALLISTICS OF BRENNEKE SPORTING AMMUNITION

CARTRIDGE	BULLET		VELOCITY, FEET PER SECOND				ENERGY, FOOT POUNDS				MID-RANGE TRAJECTORY* (INCHES)		
	Type	Weight (grains)	Muzzle	100 yds.	200 yds.	300 yds.	Muzzle	100 yds.	200 yds.	300 yds.	100 yds.	200 yds.	300 yds.
7x64	VS, TS	103	3,572	3,110	2,685	2,283	2,930	2,230	1,670	1,190	0.118	1.38	4.37
	VR, TR	139	3,000	2,570	2,260	1,980	2,780	2,040	1,570	1,200	0.236	2.16	6.41
	TIG	162	2,960	2,603	2,375	2,200	3,150	2,440	2,030	1,740	0.236	2.05	6.02
	VR, TR	173	2,555	2,225	2,000	1,810	2,500	1,895	1,530	1,250	0.394	2.99	8.50
	TIG	177	2,880	2,665	2,490	2,325	3,270	2,820	2,440	2,130	0.197	2.05	5.63
7x65R	VS, TS	103	3,480	3,010	2,590	2,200	2,770	2,100	1,540	1,120	0.079	1.46	4.68
	VR, TR	139	3,000	2,570	2,260	1,980	2,780	2,040	1,570	1,200	0.236	2.16	6.41
	TIG	162	2,887	2,540	2,320	2,140	3,000	2,320	1,930	1,650	0.236	2.16	6.30
	VR, TR	173	2,655	2,225	2,000	1,810	2,500	1,895	1,530	1,250	0.394	2.99	8.50
	TIG	177	2,820	2,600	2,420	2,255	3,120	2,660	2,300	2,000	0.236	2.12	5.94
8x64, 8x64S, 8x65R 8x65RS	VR, TR	196	2,680	2,240	1,940	1,730	3,120	2,180	1,640	1,295	0.315	2.91	8.74
	TIG	198	2,830	2,480	2,230	2,030	3,520	2,700	2,180	1,790	0.276	2.40	6.76
	TIG	224	2,650	2,450	2,270	2,110	3,480	2,980	2,570	2,205	0.276	2.44	6.68
9.3x64	VR, TR	285	2,750	2,240	1,930	1,730	4,790	3,180	2,365	1,895	0.315	2.95	8.81
	TUG	293	2,640	2,450	2,290	2,145	4,550	3,900	3,410	3,000	0.276	2.40	6.65

\*Mid-range trajectory figures computed from line of iron sights, 0.8-inch above bore line. VS—solid point, pointed/TS—soft point, pointed/VR—solid point, round nose/TIG—Brenneke Torpedo Ideal Bullet (soft point)/TUG—Brenneke Torpedo Universal bullet (soft point)/TR—soft point, round nose