TEST REPORT

BRENNEKE 9.3X64MM

This block-busting calibre is a German classic. Certainly providing insurance for big game hunters.

By Our Technical Editor

The 1920s and 30s were the golden years of big game hunting when Germanic sportsmen competed with rich Englishmen journeying abroad in search of dangerous game.

While British hunters used medium and big-bore rifles, firing proprietary cartridges from their own famous makers such as Holland & Holland and Rigby, Teutonic hunters showed a decided preference for their own metric calibres.

Several different 9.3mm cartridges firing bullets of .365 and .366 inch diameter saw widespread use in Europe, Africa and Asia. These included rimmed loadings such as the 9.3×72R and 9.3×74R which were used in single-shots, double rifles and drillings.

However, even more popular were rimless cartridges such as the 9.3×57, 9.3×62 and, most powerful of all, the 9.3×64mm Brenneke. The latter chambered in Mauser bolt-action rifles posed a serious rival for the great .375 Holland & Holland Magnum.

The 9.3×64mm was the largest and most powerful of the Brenneke cartridges. Wilhelm Brenneke was a famous gunsmith and easily the best known German cartridge designer of all time. He was not only responsible for developing the Brenneke rifled slug for shotguns, but also the highly effective Brenneke Torpedo bullets: the famous TIG and T.U.G.

Brenneke began his career during the late 1890s and most of his popular cartridge designs were perfected before the start of World War I. His two most successful cartridges, the 7×64 and 9.3×64, are still seeing widespread use after almost 80 years. Both calibres are being loaded by RWS and Mauser system rifles while the fine Mauser 66 rifles are readily available for them.

The 9.3×64 has been used most effectively on African game from elephant to smaller game and it is credited with one-shot kills on the heaviest American game such as elk, moose and brown bear. The 9.3×64 is a far more pleasant rifle to shoot than the .375 H&H Magnum (I have found it so) and those who have had experience with it claim the calibre will give deeper penetration and generally outperform the .375 in every way.

Although the 9.3×64 case is only two millimetres longer than the popular 9.3×62, it is a much fatter cartridge which has a larger boiler room for increased performance. The head diameter is 12.80mm (.504 in) against 12mm (.473 in).

TOP: The hardened rear core of RWS' Brenneke TIG has a funnel-shaped recess. Basically, this type of construction favours the mushroom-like deformation of the bullet and produces a high energy level in the game.

ABOVE: The hard rear core of RWS' Brenneke T.U.G. projects into a corresponding recess in the front lead core. As a result of his design, there's a reduced tendency to mushroom and consequently higher penetration power is achieved.

In many ways Brenneke was ahead of his time, for the 9.3×64 came out ahead of the .375 H&H and roughly 35 years before the .375 Weatherby. Standard RWS loadings drive the superb 293gn Brenneke T.U.G. with an SD of .312 and C of .546 at 2570 fps from a 648mm barrel. Muzzle energy is 4295 FP, dropping off to 2130 fps and 2950 FP at 275 metres. This is a splendid load which combines deep penetration with good expansion for soft-skinned dangerous game such as lion and bear.

RWS also offers two other 9.3×64 loads: a 285gn round-nose with a C of .233 at 2690 fps churning up 4575 fps muzzle energy, dropping off to 1900 fps and 2285 FP at 275 metres; and a 285gn full jacket which develops similar ballistics.

The 9.3 cartridges never achieved any degree of popularity in this country obviously because, with the exception of Asian water buffalo, Australia has no thick-skinned game large enough to make owning such a big calibre rifle worthwhile.

However, the 9.3×64 has quite a few desirable features for the world traveller and safari hunter. Its performance, particularly with the 293gn Brenneke T.U.G. leaves little to be desired. Sectional density, ballistics coefficient and, therefore, retained velocity and energy both shade the .375 H&H by a fair margin.

Anyone wanting a rifle chambered for the 9.3×64 in this country is confined to ordering a Mauser 66, Heym or Steyr-Mannlicher. The only American manufacturer to list the 9.3×64 among its line-up is A-Square! Both the A-Square Caesar and Hannibal bolt-action rifles based on modified M-17 Enfield actions are chambered for it.

Even custom 9.3×64 rifles are not easily obtained in this country. While almost any standard length action of reasonable strength such as the Mark X Mauser, Winchester Model 70 and Remington 700 will contain the big 9.3 cartridge, barrels have to be imported on special order. Another way of getting a 9.3×64 is by rechambering a 9.3×62 barrel on a Mauser 90 action.

I found the recent introduction of the .35 Whelen by Remington with all the usual hype, rather amusing, for the 9.3×62 is a superior

with the two 285gn bullets and as driving the 293gn T.U.G. at 2526 fps, but a cartridge with 285gn solid bullet I pulled down contained 64gns of an unknown powder?

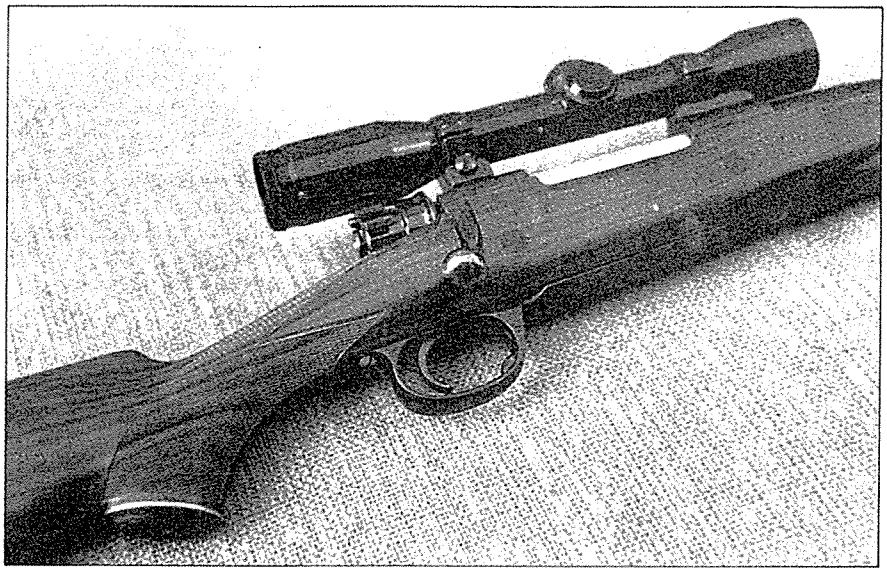
Feeding all the necessary data into my *Load From a Disk* program revealed the recommended American propellant powders for reloading the 9.3 × 64 were medium burning IMR 4320 and W-760 Ball powder. The loading with the 293gn T.U.G. was listed as being 64.9gns for an estimated muzzle velocity of 2340 fps with a peak pressure of 45,900 PSI. However, owing to unknown factors, the recommended starting load was 58.4gns. Alternate loading data listed as maximum, a charge of 68gns for 2452 fps at 50,400 PSI.

Running the data through again, this time listing the Norma 231gn PPC bullet, 65.8gns of either powder was listed as developing an estimated muzzle velocity of 2620 fps at 46,300 PSI and the suggested starting load of 59.2gns. Alternate load data listed as maximum 68.9gns of powder for 2743 fps at 50,800 PSI.

As things turned out, 69gns of IMR 4320 drove the 231gn Norma PPC bullet at 2768 fps which is close enough.

Compared to the 9.3 × 62 loads I developed, indications were the larger 9.3 × 64 case should show an advantage of 150 fps with the 231gn Norma bullet and almost 200 fps with the RWS 285gn SP and 293gn T.U.G. This would be accompanied by a corresponding increase in striking energy.

The best powders in the 9.3 × 62 are AR 2206 and AR 2208, there only being one grain difference in the charge weights required to produce identical muzzle speeds. Evidently, there is only a very slight difference in the burning rates of AR 2206 and AR 2208. But the larger capacity 9.3 × 64 is better suited by slower burning powders such as W-760 and AR 2209.



The French walnut stock is reinforced in critical areas where recoil exerts most force against wood. Rifle has low wing safety and EAW mounts.

We often see a whole page listing dozens of different loads for a certain cartridge and sometimes everyone of these is listed as maximum. I personally question the need for so many maximum loads.

The hunter has little need for more than three or four good loads and if those loads show mild pressure, give good accuracy and shoot to more or less the same point of impact, then he or she should be entirely satisfied with them. However, the handload experimenter does appreciate all the information available on different powders.

In this country, owners of 9.3s want to reload their fired cases because factory ammo is quite expensive to buy. Cases have never been a problem since DEK Imports has taken over the distribution of RWS ammunition and components.

The limited number of bullet weights and types available is no real handicap either. There's something to suit every purpose and the RWS designs are really excellent from the standpoint of accuracy coupled with performance on game.

Several 9.3 bullets are being made in the USA, including the 270gn Speer semi-spitzer. Barnes lists 250 and 300gn bullets and several other custom makers offer bullets of varying weights and construction.

In addition to the 285gn solid and soft-point and the 293gn T.U.G., RWS also makes a 258gn H-Mantel. Sako has only one 9.3 bullet, I know of, a 255gn soft-point. Norma offers two different weights: a 231gn PPC and a 286gn RNSP.

The T.U.G. bullet expands enough to make one hell of a big exit hole. I remember once taking a crack at a large bull moose trotting along the bank of a Canadian river. When I busted him through the lungs, just back of the shoulder, he behaved in typical moose fashion. The big cervus never showed any sign of knowing he'd been killed and kept on going for about another 50 metres before he suddenly ran out of steam and dropped in his tracks.

Not one of the eight moose I've shot dropped on the spot; they all ran from 25 to 50 metres before keeling over. Undoubtedly, the 9.3 × 64 should be even more of a good thing than the 9.3 × 62.

Despite its popularity in other countries, there is hardly any loading data available for the 9.3 × 64mm Brenneke. Loaded cartridges

BALLISTICS TABLE

Cartridge Name: 9.3 × 64mm Brenneke
Ballistics Coefficient: 0.2700
Alt: 0 Ft

0 Range Selected: 222 Yards.
Bullet Weight: 231 Grains.
Temperature: 59 Degrees F.

Flight Time	Range (Yards)	Remaining Velocity	Remaining Energy	Total Drop	Bullet Path	Angle +/- 0	Deflection in 10 Mph Wind
0.00	0	2800	4021	0.00	-1.50	-1.50	0.00
0.11	100	2469	3126	2.41	2.76	2.76	1.24
0.24	200	2161	2395	10.58	1.26	1.26	5.27
0.39	300	1875	1804	26.14	-7.62	-7.62	12.51
0.57	400	1618	1343	51.98	-26.79	-26.79	24.18

BALLISTICS TABLE

Cartridge Name: 9.3 × 64mm Brenneke
Ballistics Coefficient: 0.5460
Alt: 0 Ft

0 Range Selected: 224 Yards.
Bullet Weight: 293 Grains.
Temperature: 59 Degrees F.

Flight Time	Range (Yards)	Remaining Velocity	Remaining Energy	Total Drop	Bullet Path	Angle +/- 0	Deflection in 10 Mph Wind
0.00	0	2620	4466	0.00	-1.50	-1.50	0.00
0.12	100	2460	3935	2.63	2.77	2.77	0.59
0.24	200	2305	3455	10.99	1.31	1.31	2.59
0.38	300	2156	3023	26.00	-6.80	-6.80	6.23
0.52	400	2012	2633	48.34	-22.24	-22.24	11.35

performer due to the better designed bullets which are available in .366. The metric round also outperforms the .35 Whelen by a considerable margin while the 9.3×64 leaves them both for dead.

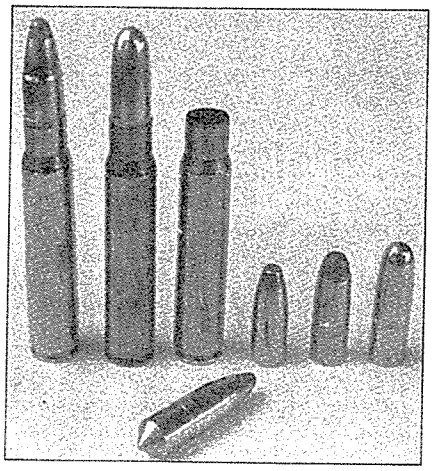
During 1986, a friend of mine had the urge to own a 9.3×64. He had on his rack a Voere Kleingunther rifle on a much reworked ex-military Mauser 98 action in .30/06 with worn out barrel. He sent the barrelled action to Jack Millar in Victoria to get a Lothar-Walther 9.3×64 barrel fitted to it as well as a Beuhler Lo-Swing safety and Timney trigger.

Almost two years had elapsed before the outfit came back, but it was no reflection on Jack Millar, because importing special order barrels from Germany can take time and lots of it!

In the meantime, my mate obtained a blank of highly figured New Zealand walnut from John Jongmans which he sent to Gabe Gatti; an up and coming young stockmaker in Cairns, Queensland.

Eventually, everything came together and my friend ended up with the completed rifle. After he'd mounted a pre-war Hensoldt Diatal-D 4×32 scope in a set of EAW rings swivelled into Redfield bases, he sent me the outfit to work up some loads for it.

A few years ago, I built up a Mauser 98 with fibreglass stock made by Graham Spraggon in 9.3×62 and worked up a good many loads using Mulwex powder. Ever since then, it had been my ambition to get hold of a 9.3×64 and do the same thing. Now I had my chance.



The 9.3×64mm Brenneke is loaded with 293gn TUG and 285gn FMJ projectiles made by RWS.

The rifle was a mixture of good and bad features. As requested, Gatti's stock was nicely shaped in the classic mould dating back to the 1920s with a little pancake cheekpiece, reminiscent of Holland & Holland. The comb was high and straight and a red Pachmayr Old English pad, some 20mm thick, was fitted to minimise the considerable recoil generated by the powerful 9.3×64mm.

The forearm spanned only 245mm ahead of the magazine floor plate and the front sling swivel was attached to a barrel band in true continental style.

The forearm was nicely rounded and very comfortable to grasp. The long, slim pistol-grip suited my small hand very nicely, measuring 12cm in circumference and 11cm from trigger to point of grip. Both grip and forearm carried perfectly executed checkering in a point pattern set off by a border.

The sides of the stock, around the magazine, were reinforced with two through-bolts to withstand the considerable recoil and prevent any compression of the wood: this could result in cracking the stock.

Gatti's workmanship was excellent with many nice little touches evident in the contouring around the front of the grip along the edges of the floor plate and the sculptured cheekpiece.

Jarring notes in an otherwise finely crafted rifle were the alloy magazine assembly and the bolt-handle which should have been straightened and otherwise modified to suit the image of a truly classic firearm. The checkered pistol-grip cap, obviously an investment casting, had never been properly polished and blued. However, these are jobs which can be done at a later date.

The overall appearance of the classic Mauser, however, was favourable enough and the contrasting streaks of black through the tobacco-coloured stockwood afforded plenty of eyecatching contrast.

When we removed the stock, we found Gatti had bedded the action fully in epoxy, making a very neat job of it. Too bad his bedding system did not work effectively as groups were inclined to string horizontally across the target.

This was due to uneven tension on the barrel which bears hard against the right side of the forearm, instead of being free-floating. The forearm appears to have warped to one side and the rifle definitely needs further attention to the bedding.

The Lothar-Walther barrel is 65cm long, nicely contoured and with a length of pull of 35.5cm. The rifle has excellent balance and hangs steady from the offhand position. All-up with the heavy German scope, it tips the scales at a neat four kilograms.

The RWS 9.3×64 case is now as heavily constructed as those for the high pressure 6.5×68 and 8×68S, but the base diameter is a bit smaller 13mm against 13.45mm. Water capacity of the 9.3×64 with the 293gn T.U.G. seated to the correct depth in the neck is 75.5gns and one grain more with the lighter 231gn Norma PPC.

In its loading data, the RWS factory lists 68gns of R907 powder as a maximum charge

HANDLOADS FOR THE 9.3×64MM BRENNEKE

Rifle: Custom-built Voere Mauser 98 with 65cm Lothar-Walther barrel.

Bullet	Powder	Charge (grains)	MV (fps)	ME (FP)	Comments
Norma 231 PPC	IMR4320	69	2768	3930	Accurate
Norma 231 PPC	IMR4320	70	2845	4152	Near Maximum
Norma 231 PPC	W-760	70	2417	2997	Mild
Norma 231 PPC	W-760	73	2595	3454	Good load
Norma 231 PPC	AR2209	71	2623	3529	Mild
Norma 231 PPC	AR2209	73	2670	3657	Usable pressure
258 H-Mantel	IMR4320	68	2822	4563	.375 H&H power
258 H-Mantel	W-760	70	2478	3518	Mild
258 H-Mantel	W-760	71	2560	3755	General use
258 H-Mantel	AR2209	71	2600	3873	Near Maximum
285 RWS FMJ	AR2209	69	2553	4125	Dangerous game
286 Norma SP	IMR4320	65	2483	3916	Good load
286 Norma SP	IMR4320	67	2618	4353	Powerful load
286 Norma SP	W-760	70	2388	3622	Mild
286 Norma SP	W-760	71	2472	3881	Accurate
293 T.U.G.	IMR4320	66	2535	4181	Good load
293 T.U.G.	IMR4320	67	2620	4467	Most powerful load
293 T.U.G.	AR2209	69	2466	3957	Accurate
293 T.U.G.	W-760	68	2305	3457	Mild
293 T.U.G.	W-760	70	2366	3642	Mild

RWS 247gn KS factory load listed 2790 fps, actual velocity 2754 fps. RWS 285gn FMJ factory load listed 2690 fps, actual velocity 2574 fps. RWS 293gn T.U.G. factory load listed 2570 fps, actual velocity 2527 fps. All loads developed in RWS brass using RWS 5333 primers. Velocities measured on PACT chronograph. All loads proved safe in the test rifle, but should be reduced by at least five-percent and increased one grain at a time in other rifles.

and unprimed brass are available from Eurocut, but is quite expensive compared to American belted magnum brass.

When deciding on a choice of powders, I decided to include Mulwex AR 2209; a domestic propellant with du Pont's IMR 4320 and Olin's W-760. All three powders burned clean, developed decent velocities and grouped their bullets reliably under two minutes-of-angle, often less.

When beginning to work up loads, I cautiously increased charge weights until pressure signs started to show up and then backed off at least two grains. It was mid-summer and temperatures were high even in the early morning when I did my range testing and chronographing. I figured if my loads proved safe up to 37 C, there would be none of the problems which might have resulted if I had carried out my load development work during the cold winter months.

I eventually settled for 70gns of IMR 4320 behind the 231gn Norma PPC, 68gns of the same propellant behind the 258gn H-Mantel: both gave muzzle velocities in excess of 2800 fps, providing two powerful flat-shooting loads for medium big game.

A charge of 69gns of AR 2209 behind the 285 gn RWS soft-point almost equalled the performance of two grains less of IMR 4320, but the latter appears to provide the top performance and the highest velocity with all bullet weights, including the 293gn T.U.G.

However, I think it would be worthwhile to carry out further load development work with the 293gn T.U.G. using not only AR 2209 and W-760, but also slower burning AR 2213.

All of these loads are below the level where case head expansion began to show up. None of the loads listed in the table were maximum in the test rifle and some could be boosted with a few grains more of powder without serious consequences.

However, as I grow older, I become more cautious and take care to see loads are trouble free under all conditions. An extra 100 fps might look more impressive on paper but, in actual fact, only represents about 25mm less drop at 275 metres.

There is also a price to be paid for that slight flattening of the trajectory in decreased case and barrel life. Then there's always the risk of a blown primer or case head separation which could put your rifle out of commission during the course of an expensive overseas safari. It's just not worth the risk.

If you can't get the job done with a 293gn T.U.G. at more than 2600 fps, then it's doubtful a few extra feet-per-second would make any difference. On the other hand, those 2600 fps loads are not likely to give rise to any functioning problems with your rifle. Somehow knowing this gives me a feeling of having the utmost confidence in my rifle.

Most available 9.3 bullets are too heavy and thickly jacketed for Australian game with the sole exception of buffalo. Norma's 231gn PPC driven at 2800 fps would easily handle our largest deer such as red and sambar out to 275 metres.

A 258gn RWS H-Mantel at 2800 fps; 270gn Speer or 285gn RWS soft-point launched at 2650 fps should be ideal for elk and moose, while the 293gn T.U.G. at 2600 fps should be sufficient to lower the boom on dangerous game such as bear and lion. The 285gn RWS solid is a real stopping bullet which penetrates and smashes large bones on big, thick-skinned bovines.

Judging by the results I've gained, the 9.3×64 delivers from 150 to 200 fps more muzzle velocity with a corresponding increase in striking energy over the smaller 9.3×62. Both are excellent rounds (no doubt about that), but the extra capacity does make a considerable difference.

The 9.3×64 is a strong, modern bolt-action fitted with either 4×32 or 1.5-4.5× variable would make a fine all-round outfit for African hunting, taking in everything from large antelope to buffalo.

Provided the shooter is capable of doing his part, the 9.3×64 can be depended upon to deliver the quietus to the most belligerent animal intent on devouring him.