

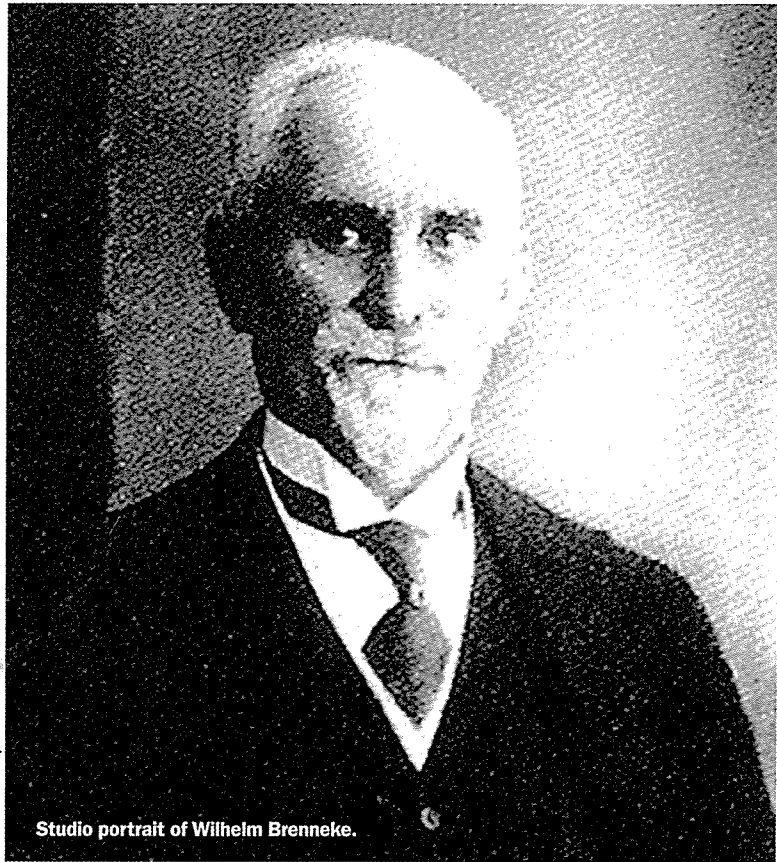
Wilhelm Brenneke, a German Classic

The more closely any development in firearms history is examined, the more difficult it becomes to ascribe any innovation to a single individual. At best, it can be said that a given inventor improved on a concept, sometimes to a radical extent, sometime to a point where their name becomes a by-word for a class of weapon. For many years any automatic pistol was a 'Browning', and any bolt-action rifle a 'Mauser' in the popular imagination. These designs are classics in the true sense: things of such excellence that they achieve lasting status.

And what of Wilhelm Brenneke? This German firearms and ammunition designer gave the world's shooters ideas that still deserve to be considered classics. Again, these are not necessarily unique, but stand well out from a crowd of competitors.

Wilhelm Brenneke was born in Hannover, Prussia, in 1865, the son of a civic employee. He showed an early aptitude for drawing, but more significantly an early interest in firearms and hunting. His further education saw him well versed in machining, tool-making, and constructing optical gear. Leaving Leipzig, he became a naval diver. As if this were not enough, he went on to become a driving instructor, and patented several new devices for cars.

It was his profits from book-selling, however, that allowed him to open the 'Brenneke Gewehr und Geschossfabrik' (Brenneke gun and projectile factory) in 1895. This was opened in Leipzig, although many of his guns were made in the large arms manufacturing town of Suhl. This was an important time in firearms development. Smokeless powder and jacketed bullets were appearing in sporting circles, causing debates about caliber and velocity that have never died down. Being a practical hunter he soon



Studio portrait of Wilhelm Brenneke.

isolated the key functions of a hunting bullet. There was a need for explosive wounding power. Many of the new cartridges offered that – designers brought out bullets with hollow tips, slit jackets and enormous soft points that detonated on impact. But this robbed them of the ability to penetrate deep into the vitals of the animal – shallow wounds caused lingering and horrible deaths for many animals. Brenneke saw the need to combine the two functions. He also became aware of accidents caused by the inadequate safety features of contemporary firearms, and his first design was produced with safety in mind.

Early hammerless guns were distrusted by many hunters – it was difficult to reliably determine whether or not the action was cocked, and some early designs probably deserved to be treated warily. On the other hand, the familiar exposed hammer weapons had faults of their own. A hammer could be snagged by a twig, or slip from frozen fingers with the same, catastrophic, end result: an unwanted discharge. Brenneke's new design took the best of both weapons. The Brenneke Halbahnlose (Semi-hammerless) break-open guns cocked like a modern shotgun when the action was opened. This

convenience was united with visible hammers, the ends of which curved back below the line of the stock. These were safe from being snagged, but allowed the safe uncocking of the action. If they slipped during this procedure, they still came safely to rest, and could be easily recocked. To complete the arrangement, a plunger projected from the upper grip of the gun. This immobilized the hammers, firing pins, triggers and locking bolts until the natural act of grasping the grip depressed it into the stock. This was a very reliable and logical safety, possessing what might now be termed good ergonomics.

Not content with this, another development addressed a problem inherent in any gun with side-by-side barrels, a problem exacerbated by the new powerful cartridges. When a break-open gun is fired, the barrel tries to force itself away from the standing breech, pivoting against the locking points. If the hinge pin, which acts as a point of resistance, lies between the two barrels, then the line of thrust lies off to one side. This means that the barrel will also twist away to one side as well as forward and upward. Brenneke's solution was to fit the barrels at the breech with tapered steel wedges, which projected downward, and which fitted over the sides of the action when closed. These stopped the barrels moving sideways, and were concealed against the action by careful fitting into raised reinforcing areas at the angle of the action. Their outer sides were only visible under close examination. For further concealment, these reinforcements could be constructed as pockets, into which the wedges disappeared entirely. The rigidity this imparted helped rifled barrels (whether in a double rifle or a Drilling, a three barreled gun) shoot with maximum accuracy. A double rifle in the powerful 8x75mm cartridge was sent to the Neumannswalde test facility and shot with only the wedges holding it shut. It came through with flying colours. Ironically, the only example the

author has seen of this modern design was a hammer-gun!

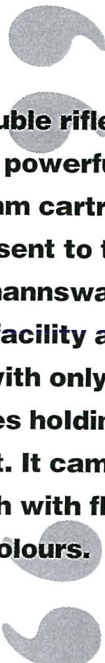
Brenneke was also aware of the marketing value of this improvement. Single barrel and under-and-over rifles that don't develop this sideways twisting motion (the thrust of their barrels is in line with the central locking) were also so fitted. Like a number of his designs, this sophistication came at a price. A drilling so equipped cost 380RM (Reichs Marks) at a time when a more conventional one cost 280. The number of such weapons produced was fairly low.

Like many makers, Brenneke offered an off-set scope mount. This set the glass off to one side, allowing instant use of the open sights if the scope should fog up, and a clearer view when gunning for birds. The feet of the scope rings fitted neatly into the rib of the barrels, less obtrusive than the larger Suhl hook-in mounts. The off-set mount is unwieldy, but it was the standard of the day. Brenneke was a great designer, but he still had to sell the customers what they wanted. Innovation within these parameters was the secret of success.

Perhaps a more lasting contribution lay in his improvements to the familiar Mauser action. The M98 was the most commonly used repeating rifle of its time, but it was primarily a military weapon. It had features that were unsuited for sporting use. The thumb slot for loading chargers of ammunition made the action less rigid, decreasing accuracy. It was also noisy when the bolt rode over it. Brenneke simply welded it up. The bolt had a loose and sloppy travel at the rear, which might be useful when the rifle had been dragged through a shell-hole and filled with mud, but which could also bind the bolt. Likewise, the prominent bolt-handle could be easily bumped open. Both of these problems were dealt with. A small box sat on the right side of the receiver bridge, which contained two spring-loaded plungers. One bore against the root of the bolt handle, holding it in place until deliberately opened. The other pressed

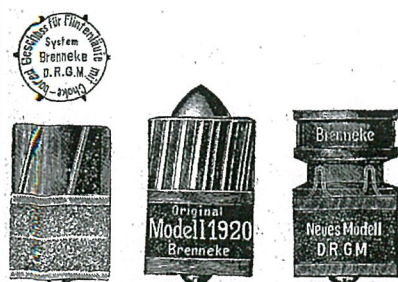
inward against a lengthened extractor spring. The extra length of the spring and the sideways pressure against it stopped the bolt from wobbling. The old problem of cold hands was again on the inventors mind when he designed a better opening lever for the magazine. This consisted of a lever lying at the rear of the floor-plate, which ran out to the left and back above the trigger, following the curve of the stock. This terminated in a chequered, flattened end. Some of these ideas were worthy enough to be taken up as standard by the Mauser factory itself, albeit in modified form.

Features now taken for granted, were added extras before the War. Some rifles were fitted with set triggers, or an adjustable one designed by the Suhl firm of Oskar Merkel. Brenneke was unusual in European circles for offering Lyman type adjustable aperture sights. A Greener side-safety was a more convenient one than the standard Mauser fitting for telescopic sight use. Brenneke mounted scopes on Suhl-type hook-in mounts, fitting the front base on a saddle soldered to the receiver ring. This was preferable to the more common practice of dove-tailing the receiver, and sliding the base in, as it was less damaging to the receivers' strength. Special barrel steels were available, including early forms of stainless. Some of these barrels were outlandishly long by modern standards, running up to 680mm in length. This wasn't just a matter of increasing velocity. The author has carried a full-length military Mauser with a 740mm barrel over steep hills, and found the slightly muzzle heaviness a good way of keeping the rifle steady after a long climb. Off hand shooting over long grass was a common



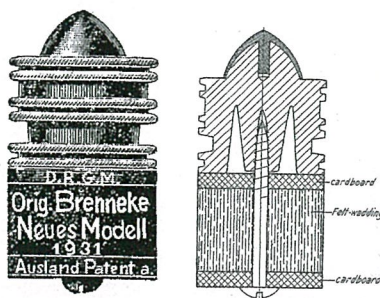
**A double rifle in
the powerful
8x75mm cartridge
was sent to the
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test facility and
shot with only the
wedges holding it
shut. It came
through with flying
colours.**

Three early slugs: the original on the left, an intermediate model on the right, and the essentially finalised form in the centre.



BELOW LEFT: The 1931 slug had circumferential ribs to allow it to swage into a paradox choke.

BELOW RIGHT: Cutaway of 1931 slug with steel cap on tip

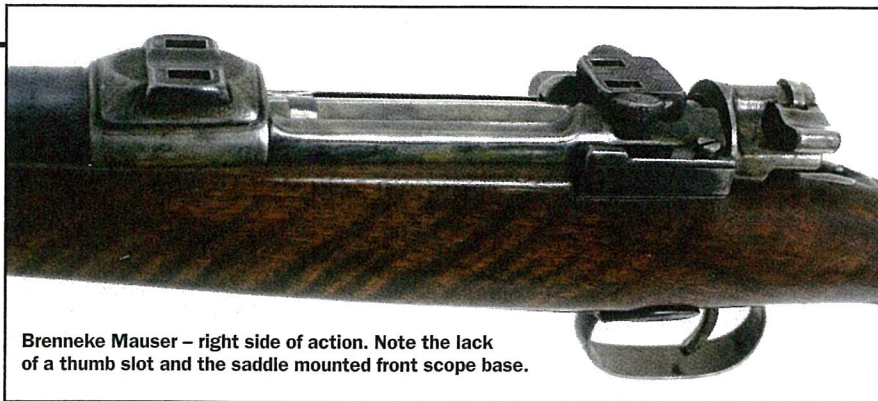


occurrence in Germany's old African colonies, and a soldier on hunting leave might have found the resemblance to his service rifle useful. More significant than the guns themselves were the cartridges developed for them. These are the basis for Brenneke's claim to lasting-classic-status.

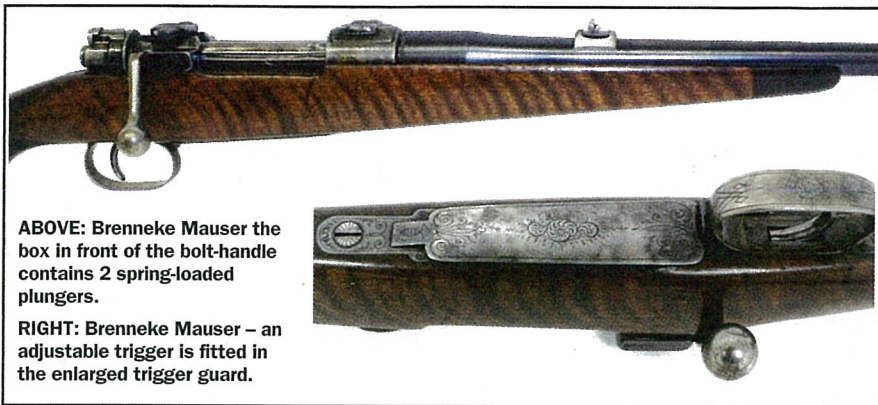
As seen earlier, Brenneke soon realised what the new smokeless powder cartridges needed: reliable bullets to utilize their potential. This could also benefit older designs with lead bullets. Indeed, the first design was paper-patched or greased, suitable for older barrels with their deeper rifling. The bullet consisted of two parts: a front section of soft lead fitting into a socket-like rear end of harder lead. The front disintegrated easily, causing bigger wounds, while the rear held together in a mushroomed form, driving deeper into the game animal and leaving an exit wound. It also featured a sharp cutting edge in the form of a step below the tip. This cut hair and a neat entry wound in game, leaving a trail of blood and fur for the hunter to follow. These are the essential features of the Brenneke rifle bullet, which continues to evolve even today.

These bullets required vehicles for them. The first cartridge developed was the 8x72mmR (the R standing for rimmed), appearing in 1898. By 1910, this was loaded with an iron-jacketed projectile, the metal coat being the first evolutionary step. A variant with a small pointed tip was known as the 'Pickelhaube' bullet, after its resemblance to the spiked army helmet of the day.

The next step, in 1912, was more significant. The inventor sought to improve on the velocities then offered by the likes of the 8x57mm, which already seemed astonishingly high. The objectives were flatter trajectory, less guess – work in estimating lead on a moving target, and



Brenneke Mauser – right side of action. Note the lack of a thumb slot and the saddle mounted front scope base.



ABOVE: Brenneke Mauser the box in front of the bolt-handle contains 2 spring-loaded plungers.

RIGHT: Brenneke Mauser – an adjustable trigger is fitted in the enlarged trigger guard.

more striking power. Loaded for Brenneke by the firm of DWM, the 8x64mm was loaded with a 223 grain bullet at 2808 fps. Suitable for Mausers, a rimmed equivalent, the 8x65mmR was produced for break-open weapons. The Torpedo Ideal Geschoss (TIG), or Torpedo Ideal Bullet was developed for it, and is with us still. This had a streamlined form in addition to the above-mentioned features, and a series of crimping grooves around the body. One at the base of the front core encouraged violent disintegration of the forward portion, while those at the back held the rear core in place. The tip also had a small brass pin set in it to

prevent deformation in the magazine or pocket. The results were sensational, and the maker was not slow to publish glowing testimonials.

The 8x64mm, was soon eclipsed by another development, the 7x64mm, which appeared about 1917. Again, a ballistic twin the 7x65mmR was made for guns needing a rimmed case. The 7mm could do most of what the 8mm could, with less recoil, and a slightly flatter trajectory, pushing a 177 grain bullet at 2994 fps. The variety of loads suited everything from Polar Bear to small game. (The idea of tackling Cape Buffalo with such a load might seem a little unwise now). Loads for the 8mm and 7mm cartridges with an oval lead ball allowed used cases to be recycled as small game and practice loads. Both of the major ammunition producers in Germany, RWS and DWM started made 7mm loads for general sale, a sign that it had truly arrived. Ordinary surplus Mauser actions could accommodate the rounds, although a longer magazine was needed for the heaviest loads. The 7x64mm became a regular offering in the Mannlicher-Schoenauer 'High Velocity' model, and was a late addition to the Mauser line-up, although it was never catalogued as such. During the Second World War, it was even contemplated as a sniping cartridge because of its precision and excellent ballistics.

F. Voss, Leganga P.O. USA Tanganyika Territory. 12.11.32

"As I write to you at this time, the 9.3x64 is the best rifle which I have used during my 26 years in the African Bush. This gun is superior



Catalogue cover, circa 1935.

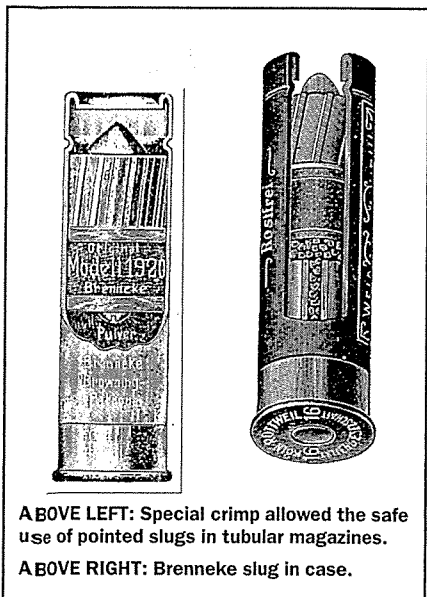
to all others in precision and effect.

Much heavy game, rhino, buffalo, etc. fell to the shot. In the last year I took two leopards in a morning amongst others. The UFA Film Company made a film of how I took an attacking Rhino with your 9.3x64. The men of the UFA admired the violent effect of your 9.3. The skull was a pulp, the bullet split in many parts. Two large fragments were driven through the hard and solid bone-mass, and had then gone on to affect the ribs not inconsiderably. In short: my 9.3-Brenneke is preferred to all, and so long as I have it in my hand, I am the master of the African bush. With this rifle I would attack the devil."

Brennekes' next major achievement was the 9.3x64mm of 1926, providing a load suitable for the largest game. Loaded with a 302grain bullet at 2788fps, the 9.3mm rivalled the .375 Holland and Holland. Its trajectory was flat, its penetration superior. But timing was everything, and the 9.3 arrived at an unfortunate moment. By 1926, Germany had lost its African colonies, and civil servants were no longer heading there. Safaris were mostly for rich dilettantes, writers and film-makers. The economic realities of the time meant that most farmer-hunters would have looked wistfully at the 9.3x64, and gone back to their 10.75x68 or 9.3x62mm.

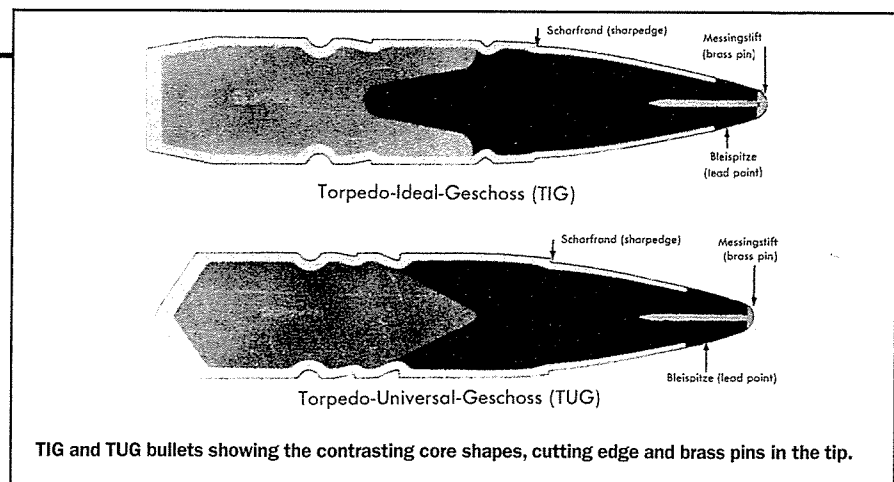
The ammunition was not cheap: when the powerful 11.2x72mm Schuler sold for 55RM per hundred, the 9.3x64 went for 64-71RM. A vicious circle ensued: because it was expensive and of limited utility, few bought it. Because few bought it, the unit price never dropped enough to make it popular.

This was a great pity. The cartridge was short enough to fit a standard action, although the most powerful loads really



ABOVE LEFT: Special crimp allowed the safe use of pointed slugs in tubular magazines.

ABOVE RIGHT: Brenneke slug in case.



TIG and TUG bullets showing the contrasting core shapes, cutting edge and brass pins in the tip.

needed a magnum length one. Few other makers adopted it. Its rimmed twin, the 9.3x65mmR suffered even more, and is now an extremely rare collectors' item.

The inventor did not stop here. The 7x72mmR, another long, narrow shell like the 8x72 came out around 1931. This was again extremely popular. Another advanced, but expensive, creation was the Patentgeschoss (patent-bullet), which replaced the established formula. This replaced the rear bullet core with a pointed bronze plug screwed into the thick jacket base. Had this been introduced today, it would not be out of place as the latest wonder bullet. Another release from 1935 was the Torpedo Universal Geschoss (TUG). This was the same as the TIG, but the rear core was pointed instead of socketed. Instead of expanding, the rear end held its shape and penetrated deeply. This was a natural match for the 9.3mm, and smaller loads as well. Highly successful, it is with us still.

Not content with these, Brenneke was experimenting with even more powerful rounds based on the .404 Jeffery case when DWM ceased all civilian work in 1942. Some of these also seem very modern – after all, the Remington Ultra-Mags use the same basic case.

Brennekes' biggest achievement is arguably concerned with far slower projectiles. In 1898, he introduced his first shotgun slug. Many others preceded it, and many others followed, but the Brenneke was the most successful basic design. Again, the essence has remained unchanged. The lack of rifling to spin the projectile means that stability has to be gained in other ways. In this case, it comes from a shuttle-cock like combination of front-heaviness, and a stabilizing tail. The first model was a stumpy, flat-nosed cylinder of lead with a wad of felt screwed on behind. Cardboard washers at each end of the felt provided a good fit and gas-seal. Six oblique ribs around the head allowed the slug to swage into any degree of choke, with the displaced lead falling into the gaps.

The number of ribs grew in subsequent models, and a pointed tip was added to enhance penetration. This was considerable – it would pierce 7 inches of pine, or 12 if a

steel-tipped variant was selected. The initial velocity of 1485fps was high, and allowed for less lead on running game. Most important was the accuracy: 3 inch groups at 50 yards made it truly practical. When German hunting laws of 1934 forbade the use of shot on larger game, the loads popularity grew even more. A special 1931 model was intended for Paradox barrels, with rifling in the choke area. While it is unlikely that a knowledgeable hunter would have taken these up for a carefully regulated double-gun, the Browning Auto-five was marketed with an interchangeable Paradox barrel. This may have been the main use for it, especially after a specially crimped cartridge was produced with tubular magazines in mind.

World War Two ended with Brenneke's factory in ruins, and no male heir to succeed him. After a precarious time surviving on the goodwill of a Soviet General who admired his work, Brenneke moved West. Before his death in 1951, his irrepressible energy established a new factory in Berlin. The works has remained in the family, too: his daughter Elsa, and now his Great-Grandson Peter Mank run the firm.

The innovation has not ceased either. Again, the Rifle bullets succeed in following popular trends while offering worthwhile innovations. The Torpedo Optimal Geschoss (TOG) uses fashionable bonded core technology while retaining the old principles of construction. The new Torpedo Alternativ Geschoss (TAG) is a solid copper hollow point – like a Barnes Bullet, but retaining the Brenneke shape.

The Rubin-Sabot shotgun slug is quite radical by comparison. A telescopic design, it consists of a brass cup, with a central spike topped by an aluminium ballistic cap. The central portion is pushed forward in firing, and the slug expands to over an inch in diameter on impact.

Wilhelm Brenneke's basic ideas have proven to be timeless. His rifle cartridges are becoming more popular as the years progress, and despite constant modification, the underlying principles of his bullets remain unaltered. The many imitations of these show that his ideas were fundamentally correct – classics in the truest sense.