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Next Generation Soldier Weapon (NGSW) Program

The Next Generation Soldier Weapon (NGSW) program sought to replace the formerly standard issue HK416 A5 rifle and G28A1 DMR in the German Bundeswehr squads with a single Rifle firing a 6.8mm projectile. With conflict ever-changing and threats to Germany and its NATO allies evolving every day, the Bundeswehr sought a next generation weapon to face next generation threats.

The programs requirements were as follows: Each contestant must submit a rifle firing a 6.8mm Projectile, capable of reaching velocities of at least 900 meters per second, the cartridge must have loads suitable for armor penetration utilising a Tungsten penetration, armor penetration utilising easier to access materials such as depleted uranium and/or utilise energetic materials or processees to penetrate armor, a match or “soft target” projectile for counter terrorism duties and a standard steel core ball round for standard issue.

No requirements for the rifle were presented other than the requirement for the projectile it must fire. Additionally, other than the capabilities and construction of the projectile itself, requirements for the rest of the assembly surrounding the projectile were not provided either.

Five companies presented prototypes to the Bundeswehr. Beretta/General Dynamics, SIG Sauer, Textron Systems, Heckler und Koch/Kriss International and Rheinmetall entered the program, each submitting a rifle design.

Germany also invited NATO and its allies to sit in on the trials, numerous nations including the United Kingdom, Australia, France, Denmark, Norway and Spain accepted the offer and were present throughout the trials. Observing with the intention of possibly adopting weapons presented at the trials.

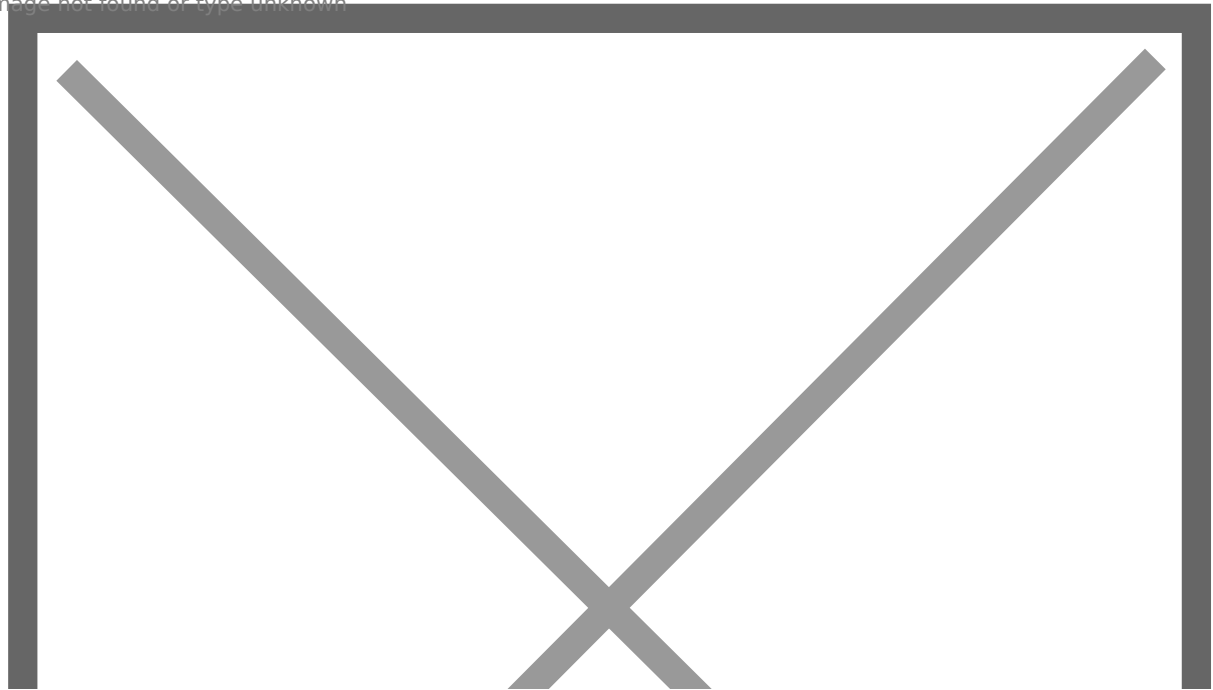
Beretta/General Dynamics & True Velocity - RM-277

Beretta/General Dynamics entered the RM-277-R in conjunction with 6.8/.277 TVCM ammunition produced by True Velocity systems. Additionally the RM-277-AR was submitted for testing as an offering to replace the HK G28 alongside the RM-277-R.

The RM-277 proved to be a highly effective rifle in testing, offering high velocity, relatively low recoil and highly reliable - as such it progressed through to troop trials. However, due to the bullpup nature of the rifle it was rejected as troops had trouble with familiarisation going from the more traditional 416A5.

Beretta did however manage to secure a deal with the British Armed Forces to replace the L85A3 with the RM-277. Obviously being a perfect fit to replace a bullpup. As of 2020, the BAF has replaced the L85 in all branches of service excluding various reserve units, with the RM-277. The new rifle being designated as the L160A1 6.8mm Individual Weapon.

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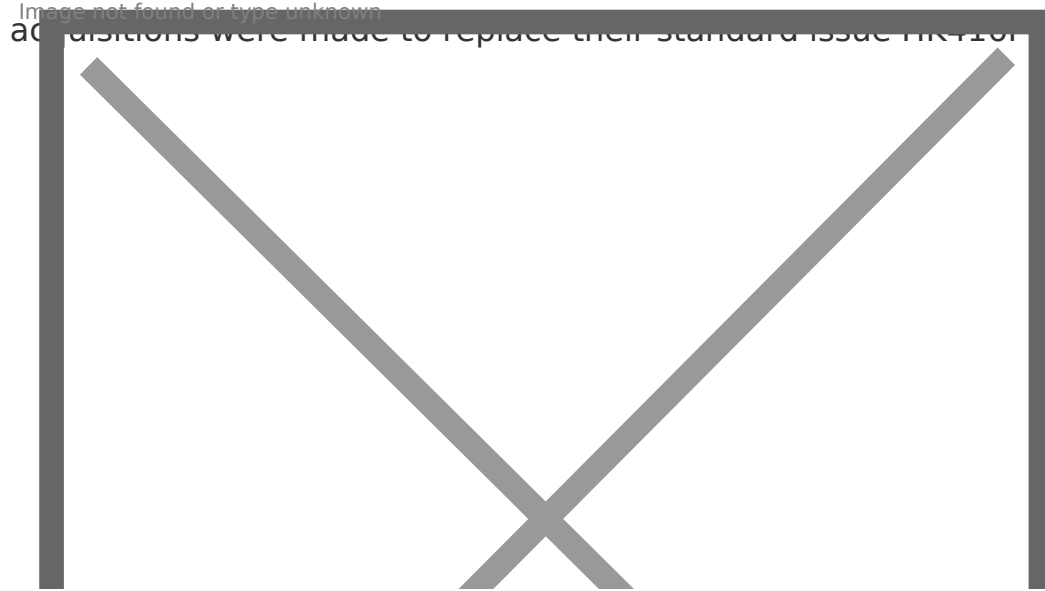
SIG Sauer - MCX Spear & 6.8x51 SIG Fury

SIG Sauer submitted their MCX Spear, an upscaled MCX, into the program - chambered in 6.8/.277 SIG Fury. The cartridge submitted alongside the rifle utilizes a hybrid three-piece cartridge case that has a steel case head, brass body and a locking washer that mechanically connects the two to support a chamber pressure of 80,000 psi (551.6 MPa). The Spear breezed through all testing, firing 12,000 rounds in a single day without a single significant malfunction and several adverse condition tests without a hitch. The MCX Spear also progressed into troop trials.

The Spear was liked by everyone who used it, due to the familiar ergonomics and similar handling. However due to the short barrel and extreme chamber pressures produced by the .277 Fury cartridge, the MCX Spear recoils significantly more than all the other NGSW entrants. This was the major

complaint presented by members of the Bundeswehr, however the rifle was liked so much that the Bundeswehr queried SIG about the possibility of producing a longer barrel variant and reducing the chamber pressures of .277 Fury - SIG refused this request and as such the MCX Spear was not adopted.

However, France adopted the MCX Spear as a replacement for the MCX Virtus already in service with their 27th Mountain Infantry Brigade. No further acquisitions were made to replace their standard issue M16A1 however.



Textron Systems - CTR-6.8 & 6.8x51 Cased Telescoped

The third and most interesting entry into the NGSW program was the Textron Systems CTR-6.8 (Cased Telescoped Rifle-6.8). The rifle was submitted, firing its unique, inhouse developed, 6.8 CT (Cased Telescoped) cartridge, the cartridge itself being a telescoped round - primarily utilising polymers. The CTR performed relatively poorly throughout the initial battery of tests, it suffered significantly more malfunctions than all other entries. Additionally its ammunition was found to be fragile and prone to deformation under extreme heat during prolonged periods of full automatic fire.

Additionally, it was noted that while the rifle and its ammunition are extremely light and the firegroup controls are similar to the weapon it is intending to replace, it has several significant ergonomic issues such as the placement of its ejection port in a location where it feels most natural to hold the rifle. As such, the rifle did not progress through to troop trials.

Australia briefly showed interest in the rifle due to its impressively light weight considering the firepower it possesses. However, beyond mild interest, the CTR was not adopted by any nations military following the program. It did however, find its way into the service of a few counter terrorism units throughout Europe as a snipers weapon. Its lightweight and good barrier penetration made it a good rifle for rapid response, low round count, accuracy dependent tasking.

Heckler und Koch/Kriss International & Caracal Munitions Inc. - MR68 & 6.8x51 Caracal

H&K partnered with Kriss International submitted the MR68 rifle, an upsized Kriss Vector submachine gun. Utilising Kriss's unique Super V recoil system, reinforced and slightly redesigned to withstand the much greater forces of the 6.8 cartridge - resulting in the lowest recoil impulse of any other entry into the NGSW program.

Alongside the rifle, the 6.8 Caracal cartridge was submitted. The 6.8 Caracal utilises a similar design to that of the .277 Fury, however instead of a brass case body a nickel casing was used instead, offering slightly improved corrosion resistance and improved feed reliability. The 6.8 Caracal produces chamber pressures upwards of 100,000 PSI in some loads, primarily to overcome similar barrel length issues to the MCX Spear. However, the 6.8 Caracal achieves significantly faster muzzle velocities over the .277 Fury, achieving velocities

upwards of 1500m/s on some loadings.

In addition to the impressive cartridge, the rifle itself proved to be extremely robust and reliable - experiencing zero malfunctions of any kind throughout the entire battery of tests; something no other entry achieved. The only complaint during testing was the significantly high rate of fire in full automatic, roughly 1500 rounds per minute. H&K stated that they were willing to integrate a rate of fire limiter should the weapon be adopted.

The MR/68 was then put into troop trials where it was well received. Accuracy and reliability did not prove to be an issue and the rifle's relatively lightweight and good ballistic performance was appreciated by troops. The Bundeswehr only reported two issues, relating to the extreme rate of fire and the relatively abnormal controls compared to that of the HK416.

The Bundeswehr expressed great interest in the MR68 rifle following trials and ultimately ended up adopting it, designating it as the Gewehr 56 A1. The initial rifle adopted did not feature the rate of fire reduction as promised, but did however come with an alternative lower receiver which replaced the full auto setting with a 2 round burst fire, with the designation of G56-A1-B

This was corrected however with the A2 variant of the G56. Lowering the rate of fire from ~1500 RPM to a significantly slower 650 RPM and offering a factory Flat Dark Earth color scheme. Various units within the German military decided to continue service of the G56-A1 and G56-A1-B, with certain units preferring the higher rate of fire or burst fire for certain tasks.

Rheinmetall Weapons & Ammunition Unit - FG-42M Type A/FG-42M Type B & 8x57 Rheinmetall/6.8x57 Rheinmetall

Rheinmetall submitted their FG-42M rifle, a modernised variant of the classic FG-42 rifle. It was offered with two different cartridges however it was quickly shut down due to the outdated weapon design and immense recoil due to the overpressure cartridge. However it was not entirely a failure, with some small batch purchases made by wealthy arab nations for their security forces.

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