

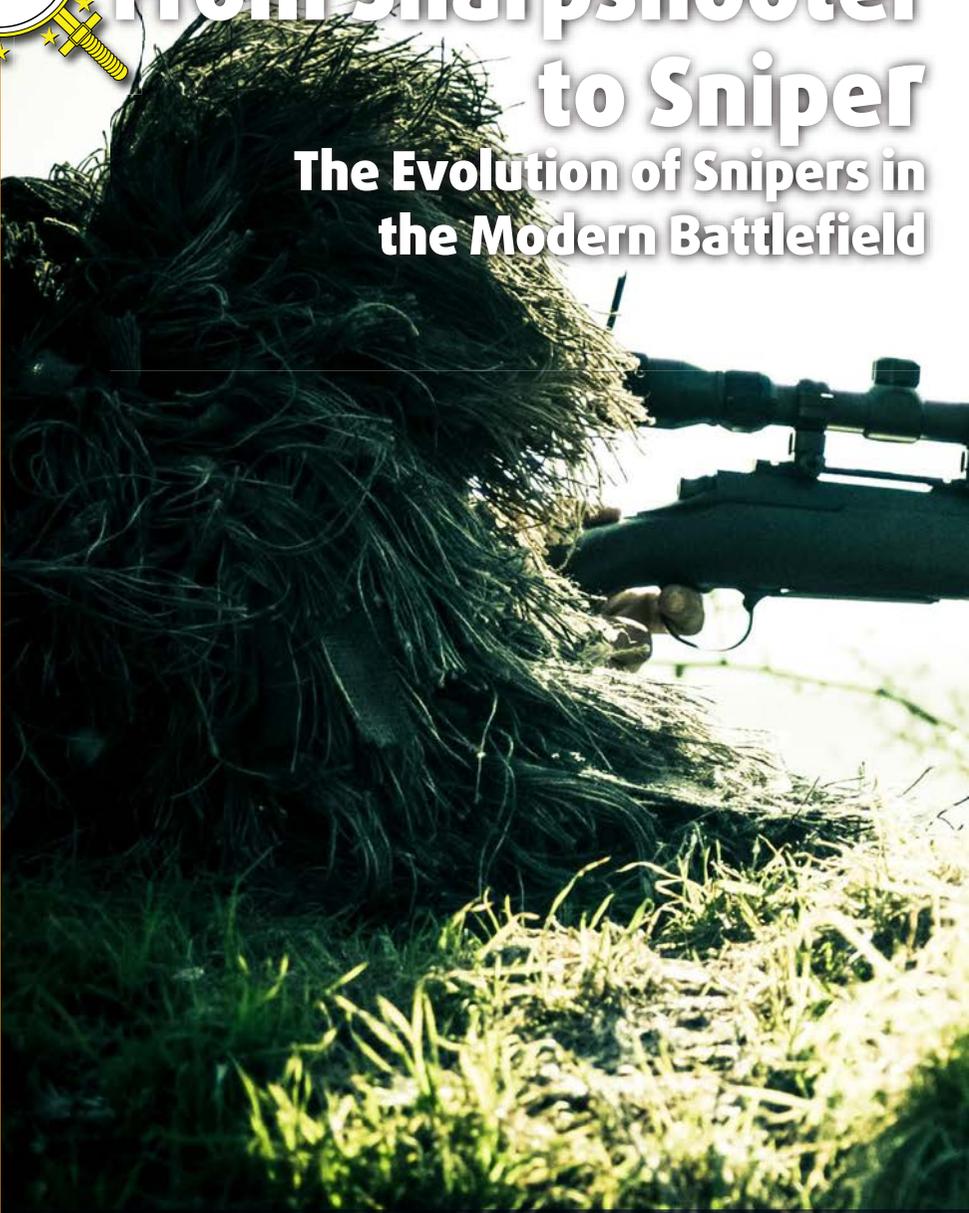
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From Sharpshooter to Sniper

The Evolution of Snipers in the Modern Battlefield

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This Food for Thought paper is a document that gives an initial reflection on the theme. The content is not reflecting the positions of the member states but consists of elements that can initiate and feed the discussions and analyses in the domain of the theme. All our studies are available on www.finabel.org

DIRECTOR'S EDITORIAL

For centuries, the common soldier was not considered an individual but a beast of burden, expected to fire his musket when told, and armed with the bare minimum that the State could provide. After all, a British soldier was taught how to estimate range and fire without command only after the First World War.

The needs of modern warfare gradually moulded the musket rifle into the precision weapon we know today. Even more so, it produced new elite units requiring the highest levels of training and needing the competence to make life-or-death, split-second decisions autonomously. Nowadays, battles are often fought in three-dimensional urban settings where low-power units can exert significant casualties on high-power units. Considering the nature of these asymmetric settings, sharpshooting methods, weapons, equipment, and training are essential.

This paper examines snipers as a tool that confers the ultimate strategic advantage to the parties who can effectively harness its power. The work below explores the contributions made by these expert marksmen in warfare of the past, present, and future. Given that their role is of the utmost consequence in various combat scenarios, this paper makes a salient contribution to the wealth of knowledge on the intricacies of armed forces operations.

We are confident that through this work, our readers can acquire an appreciation for the challenges faced by snipers, for their extensive skill set, and their indispensable place on the battlefield. We also hope that one can gain insight into the advancements occurring in sniper technology.



Mario Blokken

Director PSec

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INTRODUCTION

Over the centuries, the use of snipers in combat has evolved from a peripheral practice to a widespread feature of modern warfare. Rifle and optical technology have undergone huge advancements that have helped marksmen emerge as integral parts of offensive and defensive strategies. Today, snipers continue to impact combat in ways that far eclipse the sum of casualties caused. A powerful tool in stifling enemy morale, snipers are best described as specialists in precision shooting and as resilient, highly skilled masters of stealth.

In this paper, we shed light on the sharpshooter's historical development and enduring importance. First, we retrace the evolution of the sniper, from its early origins in the fifteenth century to its uses in modern battlefields.

Specifically, we focus on the role of snipers in pre-industrial combat, the American Civil War, WWI, WWII, and Cold War conflicts. Next, attention is given to the specific traits, skills, and know-how demanded of effective snipers. The art of counter-sniping is also explored, along with new issues such as asymmetrical warfare. Considering the recent events and developments, the authors decided to focus on the role of snipers in the wars in Iraq and Afghanistan, particularly on their use for counterinsurgency and counterterrorism activities. We then look at present and future technological advancements in the realm of snipers. Embedded throughout the work is an examination of the sniper's many tactical contributions, highlighting its indisputable value in various contexts.

THE HISTORICAL DEVELOPMENT OF THE SNIPER'S ROLE

The Emergence of Sniper Units from the 15th Century to 1914

The emergence of snipers parallels critical technological developments in weapon systems, optics, and the evolution of warfare.

From Hunter to Rifleman: 15th to mid-18th century

The origins of the sniper marksman lie in the ancient art of hunting. The term 'sniper'

comes from a very fast and hard-to-hunt bird named 'Snipe', hunted only by highly skilled shooters who could shelter themselves.¹ However, from the emergence of handheld firearms in the Middle Ages, rifles were employed in close to mid-range combat. With an effective range of around 70 to 90 metres,² these weapons were not designed for accurate shooting but rather for speed of loading and group firing. Nonetheless, those particularly gifted in

1. Barisik, Erdem, and Gokhan Baltacioglu. "The Employment of Sniper in Modern Battlefield." *Journal of Management and Information Science* 2, no. 1, 2014.
2. Pegler, Martin. *Sniper: A History of the us Marksman*. Bloomsbury Publishing, 2011.



Ghillie sniper, 2021

Sniper in camouflage, Anastase Maragos

the art of accurate fire came to be described as ‘sharpshooters’ or ‘marksmen’.³ From the late 15th century onwards, shooting sports started thriving across Europe, from Switzerland to England.

In the 17th century, developments in barrel rifling brought about weapons capable of shooting targets up to 270 metres away, roughly three times that of a smoothbore musket.⁴ The lead bullets gripped against the sides of the barrel, instigating spin, and creating gyroscopic stability, which improved accuracy greatly. As such, small units of marksmen started popping up in the early European battlefields. Nonetheless, considered too costly and required too much training, their num-

ber and tactical use remained trivial until the 18th century.

The first significant use of sharpshooters occurred during the Seven Year War (1756-63) between German states. The German tradition of *Jäger* or hunters provided Frederick the Great with a reserve of skilled marksmen employed as skirmishers or riflemen. By the 1760s, the green-coated *Jäger* had formed into a battalion of over 800 men. Nevertheless, their slow loading speed (approximately 15 minutes), caused by the barrel needing to be cleaned after every shot, rendered these battalions extremely vulnerable, particularly in open settings. As such, the primary use of infantry musketeers remained ‘volley fire’,

3. Sparkes, Lieutenant A. “The Evolution of snipers and their implications on the modern day battlefield.” *Duty First* (2005): 25-27.

4. Pegler, Martin. *Out of Nowhere: A history of the military sniper, from the Sharpshooter to Afghanistan*. (Bloomsbury Publishing, 2011), 32.

namely shooting in the general direction of the advancing enemy as opposed to accurately firing the weapon.

It was a formative period in Europe where technological advancements brought about a broader understanding of how riflemen could be employed. However, with linear warfare as the primary method of combat, few could see the strategic advantage of snipers. It was during the American War of Independence that these tactical opportunities came to light.

The Frontiersman at War

The American Revolution (1775-83) is widely considered the first example of the modern use of tactical marksmanship in combat. Citizen soldiers, many of whom needed precise hunting skills to survive on the frontier and were familiar with Indian guerrilla war tactics, took their rifles to the battlefield and used them against British soldiers.⁵ The large areas of woodland in the United States at the time provided a strategic advantage to those acquainted with the arts of hunting. British forces, primarily trained in linear combat techniques and equipped with the famous 'Brown Bess' smoothbore musket (with an accuracy of around 80 metres), came face to face with early long barrel rifles, particularly the Kentucky rifle (with over 250 metres range). Originally brought to America by Swiss and German immigrants, these guns had evolved over the 18th century to accommodate long-distance travel with a smaller stock, breechloading enabling reloading with-

out having to stand up, and most notably, a reduction from .76 calibre bullets to .50 allowing greater range for the same amount of gunpowder.⁶

Although sniper units had a small impact on the overall conflict, their usage set the stage for modern sniper units. In particular, the well documented General Morgan assembled 400 hundred riflemen into 12 companies, whose primary use was to observe, harass and confuse the enemy from hidden positions.⁷ The American marksman used blue and brown outfits to target the highly visible red and white British soldiers, inflicting large casualties and demoralising the troops. Furthermore, Morgan targeted British officers and Generals, a practice considered unsportsmanlike at the time, but which today is one of the prime targets of snipers.⁸ Famously, he ordered one of his soldiers to take down General Simon Frasier at a distance of over 350 metres during the Battle of Saratoga.⁹

Although the British saw the American way of fighting as unfair, their use was certainly effective. At the Battle of New Orleans, 2,000 American riflemen were able to defeat 8,000 British troops, most of which were killed before they could advance within musket range.¹⁰ This would pave the way for a re-evaluation of military capabilities in a new threat faced by the British: Napoleon.

1c. The Napoleonic Wars

In the face of Napoleon's grand vision of Europe, some forward thinking British officers

5. Sam Bocetta, (2017), "Evolution of the Sniper Rifle," Small Wars Journal. [online] Available at: <https://smallwarsjournal.com/jml/art/evolution-of-the-sniper-rifle>.

6. Pegler, Martin. *Sniper: A History of the us Marksman* (Bloomsbury Publishing, 2011).

7. Mast, Gregory, and Hans Halberstadt. *To be a Military Sniper* (Zenith Press, 2007).

8. Peter Suciu, "Epic History: The Origins of Military Snipers," *The National Interest*, 15 April, 2020, [online]. Available at: <https://nationalinterest.org/blog/buzz/epic-history-origins-military-snipers-144702>.

9. Dougan, Andy. *Through the Crosshairs: A History of Snipers*. (Da Capo Press, 2006), 47.

10. Pegler, Martin. *Out of Nowhere*, 41.

re-evaluated the state of the army muskets, which had barely changed since the English Civil War. In 1799, based on the Prussian *Jäger* rifle, the Board of Ordnance contracted the development of .62 calibre bore 'carbines', later known as the Baker Rifles. These carbines were to equip two newly created regiments of specialised riflemen, namely the 60th and the famous 95th (which evolved into the Royal Green Jackets).¹¹

The 60th and 95th regiments became famous during the Peninsular War in the opening years of the 19th century and, later, during the Waterloo Campaign. Unlike traditional infantrymen, most members had received higher education and were trained in evaluating terrain, mapping, observation, and skirmishing.¹² Equipped with dark green coats and moving swiftly in groups of four, the French gave them the nickname 'the grasshoppers'. They became specialised in targeting enemy scouting missions and targeting Generals and NCOs. In 1813, General Soult wrote to the French Minister of War stating that the British had "a Battalion of the 60th is never concentrated, but has a Company attached to each Infantry Division. It is armed with a short rifle; the men are selected for their marksmanship. In action, they are expressly ordered to pick off officers, especially Field or General officers [...] One of the Marshall's staff declared that 'Les Riflemen' killed all our officers between 25th July and 30th August 1813, viz approximately 500 officers and 8 Generals".¹³

The success of these sniper rifles coincided

with the invention of the more reliable percussion cap shows. By the end of the Napoleonic Wars, over 40,000 rifles had been manufactured and shipped across the British Empire.

American Civil War and European Wars: 1854 to 1914

Whilst the origins of sniping lie in the ancient art of hunting, it is the collision of mass warfare and the industrial revolution which shaped the modern sniper.¹⁴ Some have described the American Civil War as one of the first modern wars. The Industrial Revolution of the early nineteenth century had transformed the landscape into one which could be used as a military asset. By the 1850s, American gunmakers, such as Eli Whitey and Samuel Colt, began the mass production of weaponry with interchangeable parts, improving greatly the speed of production and price of firearms.¹⁵ The North had access to most of these major manufacturing plants, particularly the Springfield Armory and the Springfield Rifled Musket. As such, accurate weaponry became a lot more available for Union troops.

The Union army was also the first to allow regiments of sharpshooters that could freely roam the battlefield. These regiments, led by a certain Hiram Berdan, were modelled on the 60th and 95th British regiments. As such, they were drilled in the normal open-order form of fighting, skirmishing, bayonet fighting, and defending against cavalry attack, as well as accurate shooting, judging of distanc-

11. Pegler, Martin. *Sniper Rifles: From the 19th to the 21st Century*. (Bloomsbury Publishing, 2011).

12. Pegler, Martin. *Out of Nowhere*.

13. Malone, E. M. "The hunter of man." *Scientia Militaria: South African Journal of Military Studies* 13, no. 1 (1983): 24-27.

14. Mast, Gregory, and Hans Halberstadt. *To be a Military Sniper*. (Zenith Press, 2007).

15. Howard, Robert A. "Interchangeable parts reexamined: The private sector of the American arms industry on the eve of the civil war." *Technology and Culture* (1978): 633-649.

es, signalling, and observation.¹⁶ Whilst the other regiments were dressed in blue, these elite troops wore green jackets and trousers, non-reflective black buttons, and a black plumed grey slouch hat.¹⁷ Equipped with the newly invented telescopic sights, soldiers of the North now had greatly improved range and scouting capabilities with scopes that had up to 20x magnification.¹⁸ As a result, they were able to inflict heavy casualties by shooting targets over 500 metres away. At least one Southern general was hit at over 650 metres range, and those shots were by no means uncommon by that stage.¹⁹ In Europe, the invention of centrefire needle

rifles by the Germans and French allowed fast reload times and accurate fire. However, in the 1870s, when the Prussian war plotted the German Dreyse against the French Chassepot, the greater range of fire of the French *tirailleurs* gave them a significant advantage.

Industrialisation and Professionalisation: Snipers in the Two Great Wars

The Role of Snipers in WWI

Among the deadliest wars in history, the First World War (WWI) saw its belligerents employ the technological, industrial, and scien-



Common Snipe, 2021

Julian

16. Pegler, Martin. *Out of Nowhere*, 64.

17. *Ibid.*

18. *Ibid.*, 62.

19. Malone, E. M. "The hunter of man." *Scientia Militaria: South African Journal of Military Studies* 13, no. 1 (1983): 24-27.

tific advancements of previous decades to inflict maximum damage on the opposing side. WWI battlefronts of the popular imagination tend to evoke images of submarine warfare, trench systems, and the use of chemical weapons, grenades, artillery, rifles, and machine guns. However, despite its under-recognition, the sniper also held a crucial place in the Great War.

The Germans, who in 1914 were the only combatants with an arsenal of telescopically sighted rifles and well-trained snipers, had the advantage of monopolising the sniping game early on.²⁰ Their rifle of choice, the *Gewehr 98*, was equipped with high-grade



Snipers in trenches

Spotting the enemy sniper

Hesketh-Prichard, Hesketh. *Sniping in France: Winning the Sniping War in the Trenches*. Pen and Sword, 2014. p 29

optical sights, boasted an effective range of 800 metres and featured a five-round magazine.²¹ The use of snipers slowly proliferated as the Allies were forced to adapt to the new weapons landscape. Among the glaring flaws of these newly popular sniper models was the high mounted position of the telescopic sights and the susceptibility of the sights to dirt and mud accumulation in the wet terrain of the Western Front.

Apart from the technology, of utmost importance on all sides was finding the most suitable men for sniper and observer roles. In 1916, the British instituted formal sniping schools and training programmes in their quest to catch up with the Germans. Training for prospective British snipers and scouts emphasized patience, quick reflexes, and consistency, which were even more essential than extreme accuracy.²² Above all, snipers had to be prepared to push themselves to the limit in mind, body, and spirit.

Both killing and surviving in the era of snipers demanded some creativity and innovation. Firstly, camouflage and concealment were essential for the success of the shooter. While in No Man's Land, it was customary for the sniper to wear materials that rendered him nearly imperceptible from three metres away. They often hid inside concealed posts, such as hollow metal "trees", hollow logs, and underground lairs²³ to evade detection while shooting at any heads or bodies that emerged from the trenches. If enemy soldiers dared to peer over the upper limits of the trench wall, they were swiftly annihilated by sniper fire, moti-

20. Pegler, Martin & Ramiro Bujairo. (2001). *The Military Sniper Since 1914*. (Oxford, England: Osprey), 15.

21. Stronge, Charles. *Sniper in Action: History, Equipment, Techniques*. (London: Amber Books, 2010).

22. Pegler, Martin. *Out of Nowhere*.

23. *Ibid*.

vating the creation of elongated ‘trench periscopes’²⁴, which allowed soldiers to view the trench’s surroundings from well inside its protective walls. Another innovation was the use of dummy head decoys, sometimes equipped with a cigarette in the mouth, which deceived the enemy sniper into firing.²⁵ A subsequent analysis of the bullet angle could then help in determining the approximate location of the sniper.

By 1917, the Allies had overwhelmed their adversaries’, thanks in no small part to the use of snipers. Beyond their lethality, snipers had also emerged as key intelligence gatherers, as they were able to observe from up close the enemy in their routine and report any movements or mobilisations to commanders. Anything noteworthy or out of the ordinary, no matter how seemingly insignificant, could constitute key intelligence. It had thus become clear by the end of the war that snipers were “a primary function of warfare, and that dominance of No Man’s Land and the enemies’ trenches were a vital element in achieving moral and military success”.²⁶

The Role of Snipers in WWII

Despite falling out of use during the interwar period in most countries, snipers regained some interest shortly before the outbreak of the Second World War (WWII). The looming prospect of another total war not only renewed the sniper’s importance as a killing and intelligence-gathering powerhouse, but also incited some minor advancements in lens performance and nighttime visibility, among other innovations. One of the most successful sniper rifles of WWII was the German

Gewehr 43. It was relatively light, highly reliable, and equipped with a ten-round magazine. The British Enfield No. 4 Mk1 also earned a reputation for reliability, particularly at long range.

A source of continuity from WWI was the use of schools to train potential snipers, although many of the Allies were slow to implement sniper schooling. For the British, the curricula remained largely unchanged from two decades prior. However, more attention was often given to intelligence gathering, stalking, and the art of constructing hides during open warfare sniping.²⁷ The American armed forces lacked any formal sniper training until around the time of D-Day in 1944. No longer, however, were men the only ones trained in sniping. The Soviet Union was the first and only country to take the novel step of designating women as snipers. Being smaller in stature and perhaps more flexible and patient on average than many of their male counterparts, more than 2,000 women snipers were responsible for delivering over 12,000 confirmed kills. On all sides of the war, camouflage and concealment tactics continued to play a central part in ensuring sniper survival, as they had in the past. The Japanese, in particular, earned notoriety for their extreme discipline in being able to remain hidden and completely still for long periods.

Snipers carried out a range of tasks throughout the war, including shooting high-value targets and enemy soldiers, street fighting, counter-sniping, observing, and impeding or delaying enemy advancements. Beyond causing death and gleaning intelligence, the

24. Pegler, Martin. *Sniping in the Great War*. Pen & Sword Military, 2017.

25. Pegler, Martin. *Sniping in the Great War*.

26. Pegler, Martin. *Out of Nowhere*.

27. Pegler, Martin. *Out of Nowhere*.

holistic effect of snipers in WWI and WWII served to wreak havoc and confusion on the adversary, weakening their morale and helping to lead the Allies to victory.²⁸ By the end of the great wars, it had become apparent to military officials that sniping was a necessary feature of the modern battlefield rather than an optional supplement.²⁹

The Cold War: The Development of the Modern Sniper

After the end of WWII, most combatants were war-weary, and snipers found themselves unemployed as their specific skills were not required by the occupation armies, whose main task was to help the peoples and the economies of Europe and Asia recover from the disastrous war. While their rifles were being handed into stores or offered as surplus, some snipers returned to live their normal life, while others kept struggling with the physical and mental problems that the war had caused to them.³⁰ It is then of no surprise that, when the Korean War broke out, there were only a few, if any, snipers in the multinational force that had been created under the aegis of the UN.³¹ The Korean War is (it has never formally ended) one of the proxy wars the United States and the Soviet Union engaged in to avoid a direct confrontation which could have triggered a Third World War (if not the end of the world if nuclear weapons were to be used). These limited wars sparse around the globe represented an occasion for the two powers

to advance their respective ideologies by supporting one of the two (or more) conflicting parties. Due to space limits, this section only focuses on two of those conflicts, the Korean and the Vietnam wars, although the role of snipers has been evidenced in other conflicts, like the Falklands War or the Arab-Israeli conflict.

Korean War

When the communist forces of North Korea invaded South Korea in June 1950, the United States came to the aid of the South Korea's Republic of Korea Army (ROKA), guiding the multinational force against the North Korea's People's Army, which was supported by the Soviet Union and China. As the conflict soon turned into a war of attrition, the role of snipers became essential, especially in the mountainous areas along the line of resistance and in the open lands. While the Allied forces lacked almost any snipers, the Chinese, allegedly advised and supported by the Soviets, had plenty of skillful snipers.³² To meet the challenge posed by the Chinese communist forces' snipers, the commanders of the Allied forces had no alternative other than to organise small sniping squads from scratch, made of the best marksmen available, and train them as quickly and efficiently as possible.³³ The US Marines were charged with procuring the rifles: they managed to obtain and distribute Springfield 1903-A4s, Garand M1-C and M1-D rifles, and the Winchester M70 target rifle with telescopic sights.³⁴ Although these

28. Pegler, Martin & Ramiro Bujero. (2001). *The Military Sniper Since 1914*. (Oxford, England: Osprey), 15.

29. Stronge, Charles. *Sniper in Action: History, Equipment, Techniques*. (London: Amber Books, 2010).

30. Pegler, M. *Out of Nowhere*.

31. *Ibid.*

32. *Ibid.*

33. Pegler, M. *Out of Nowhere*; Stronge, C. *Sniper in Action*.

34. *Ibid.*

rifles were often improved, they did not reach long distances. To solve this problem, Ordnance Captain William Brophy used machine guns and “Soviet PTRD 14.5mm (0.57in) anti-tank rifle[s] fitted with a 12.7mm (0.5in) machine-gun barrel”.³⁵ Sniping in the Korean War remains underestimated, and as Stronge states “apart from a few honourable exceptions, sniping was a do-it-yourself job in response to an emergency. It was as if sniping were a lost art or that military forces were in denial about its importance, not only as a support in both defence and attack, but as a means of keeping enemy snipers at bay. [...] Those armies that did not train snipers did so at their peril.”³⁶

Vietnam War

The frustration of not having a special long-range rifle for snipers continued through the Vietnam war. Deployed to the thick jungle of North Vietnam, the US Marines complained

of having commercial scopes, whose lenses would easily fog up due to the high humidity. However, some improvements from the past were made: the “science of silencing had been considerably improved”³⁷ and the night sight more or less perfected. The Vietnam war again demonstrated how essential the role of snipers was in wars of attrition and how even a more powerful force like that of the United States could “be held at bay by vastly inferior but well-placed units”.³⁸ The Viet Cong’s snipers were well-trained and not to be underestimated. Although they possessed only vintage Soviet and Czech rifles, they often exasperated the US American forces to the point that the latter were forced “to resort to tactics of calling in mortar, artillery or even air strikes to try and destroy the sniper’s position”.³⁹ As the war ended, the US began reassessing the importance of organising specific training programs for snipers and providing them with rifles more suitable to their role and skills.

THE ROLE OF THE SNIPER IN THE ARMY

Qualifications

The ability to shoot targets with great precision is far from the only required attribute of an expert sniper. Unable to be taught in sniper preparation courses, a certain personality, mental, and physical traits better equip potential snipers to succeed on the battlefield.

Non-Physical Traits

Generally, the most commonly sought-after traits for snipers are courage, composure under pressure, discipline, high intelligence, quick thinking, maturity, patience, and psychological fitness. Bravery, and the related ability to maintain one’s *sangfroid* under duress, greatly serve sniper objectives. Fur-

35. Stronge, *Sniper in Action*, 151.

36. Stronge, *Sniper in Action*, 157.

37. Pegler, *Out of Nowhere*, 298.

38. Stronge, *Sniper in Action*, 167.

39. Pegler, *Out of Nowhere*, 307.

thermore, snipers constantly use their acute situational awareness to make judgment calls that can mean the difference between life and death, not only for the sniper himself but for his comrades. As such, snipers must possess superior mental aptitude and the ability to remain alert and focused both in moments of high intensity and during long, uneventful periods. Mental well-being and clarity of mind are therefore vital. Snipers must be able to detach themselves from the emotional reality of inflicting lethal injuries on another person. Patience is also mandatory, as snipers lie in wait, sometimes enduring harsh conditions, for long idle periods.⁴⁰ Lastly, potential snipers should also work closely with another individual or group of individuals, fully trusting their skills.

Physical Characteristics

A high level of physical fitness is also a key trait of a sniper. As masters of stealth, snipers must be agile enough to manoeuvre around undetected, both at quick and slow paces. Indeed, the role usually demands significant downtime. However, the amount of physical stress that the job poses to the body should not be understated. Physical stamina, both to remain motionless in uncomfortable positions and to perform long-distance running, is vital. Excellent eyesight is also a prime contributor to sniper success during observation and distance estimation.⁴¹ Finally, snipers shouldn't have a nicotine dependency, as smoking on the post could quickly reveal the sniper's location, and nicotine withdrawals could also impair the shooter's ability to focus

on the task at hand.⁴²

Technical Knowledge

As a tactical art, sniping requires mastery of several hard skills. The high-stakes nature of sniping, often conducted in extreme conditions, means that most armies' potential snipers must pass rigorous physical tests, psychological screenings, interviews, and training courses before beginning their role. Such courses tend to encompass a range of topics covering the technical knowledge base of sniping: camouflage, concealment, stalking, and various shooting skills, among others.

Camouflage and Concealment

Snipers are experts in the art of seeing without being seen. To go unnoticed by adversaries and their sensor systems, they rely on an arsenal of techniques in addition to both low and high-tech equipment. Intelligent use of concealment sites and clothing all lessen the risk of enemy detection. Therefore, potential recruits must know how to camouflage and conceal themselves in diverse settings, i.e. on various types of terrain, among different flora, and in urban and rural environments. Though often conflated, the concepts of 'concealment' and 'camouflage' require some differentiation. Concealment refers to using an object (i.e. wall, building, or tree) to completely block the sniper from the enemy's plane of sight and line of fire.

In contrast, camouflage entails the strategic use of objects to enable the sniper to go undetected while remaining technically in full

40. Barisik, Erdem, and Gokhan Baltacioglu. "The Employment of Sniper in Modern Battlefield." *Journal of Management and Information Science* 2, no. 1 (2014).

41. Spicer, Mark. *An Illustrated Manual of Sniper Skills*.

42. *Ibid.*



Snipers in Afghanistan

Stronge, C. Sniper in Action: History, Equipment, Techniques. (Amber Books Ltd. London. 2011). P 317

or partial view of the enemy.⁴³ During both camouflage and concealment, snipers must take care to either cover or disguise their equipment and their body. Additionally, both practices require careful attention to potential silhouettes and changing light conditions. A sniper must always be mindful of the angle and movement of the sun, particularly because of its power to cast shadows. Sunlight's reflection off the glass of a scope could expose the sniper's location as well.⁴⁴ Furthermore, one must therefore be prepared to adapt to sudden shifts in weather and light conditions. Finally, making any unnecessary movement or noise while in camouflage or concealment is strongly discouraged.

To be successful at camouflage, snipers must be good improvisers capable of taking advantage of the materials around them to assist in

their strategy.⁴⁵ Materials often used in rural environments to obscure the human form can include netting, foliage, vegetation, fake trees, and actual uniforms.⁴⁶ In such settings, ghillie suits and other attire are designed to imitate the Earth-toned and irregular forms of the landscape, while in urban areas, straight lines and bright colours may be suitable, perhaps to aid in blending in as a civilian.⁴⁷ In cities and towns, camouflage is generally easier and requires less meticulous forethought.⁴⁸ Light and dark camouflage paint may also be used on the face to obscure the distinctive outlines of human facial features.

Of central importance in concealment is the intelligent selection and/or construction of the concealment location. A well-planned shooting site should be located where the enemy would not think to look, providing the

43. Spicer, Mark. *An Illustrated Manual of Sniper Skills*. (Barnsley, South Yorkshire, England: Pen & Sword Military, 2016).

44. *Ibid.*

45. Barisk, Erdem, and Gokhan Baltacioglu. "The Employment of Sniper in Modern Battlefield." *Journal of Management and Information Science* 2, no. 1 (2014).

46. West, John. *Fry The Brain: The Art of Urban Sniping and Its Role in Modern Guerrilla Warfare*. Countryside, VA: SSI, 2008.

47. Spicer, Mark. *An Illustrated Manual of Sniper Skills*.

48. West, John. *Fry The Brain*.

tactical advantage of intimidating and confusing the enemy.⁴⁹ A sniper must also plan a secure entry and exit route to and from the hide, as well as an extra, alternative escape route. Urban settings tend to provide many concealment locations, such as alleyways, rooftops, attics, vehicles, or the far back corners of rooms within public or private buildings. Inside such buildings (i.e. houses, factories, etc.), a sniper may operate while concealed by tinted windows, curtains, false walls, or commonly by a building facade containing a hole through which to insert the rifle. A vehicle with a drilled hole for the weapon has the advantage of being both an inconspicuous and potentially mobile concealment site.⁵⁰ In rural environments, these sites may be inside real or artificial trees and natural caves. If stationed in a cold climate, or the event of a temperature drop, it is crucial to not allow the vapour from one's breath to be seen by the enemy. Any footsteps left in the snow must also be obscured.⁵¹ Lastly, a final instruction snipers must keep in mind is, 'if you miss, you move' so as not to compromise your location.⁵²

Stalking

Having selected a site from which to shoot, a sniper team then plans the approach. Successful 'stalking' is vital to ensure one's survival. It encompasses all the expertise involved in manoeuvring towards a covert firing position, then retreating into safety, completely unseen and unheard. Speed is not the key to suc-

cess in this endeavour. Remaining low to the ground and making slow, deliberate movements, the sniper must take frequent pauses to listen to and observe his surroundings.⁵³ As a craft, stalking can be mastered only after extensive practice over different types of terrain. Snipers must study maps and memorise aerial photos of the terrain or city, evaluating potential routes and planning their course.⁵⁴ Tools such as compasses and GPS can be used to aid while in the stalking process, as it is easy to lose one's sense of direction, particularly at night. Memorising the location of distinctive features such as streams, hills, and bridges also helps the sniper to stay on his pre-planned path.⁵⁵

During the stalk, the sniper is hyper-aware that he risks becoming an easy target if he does not thoroughly know the grounds or if something goes wrong during the stalk.⁵⁶ Wildlife, for example, may draw unwanted attention to the shooter. The enemy's sniper detection tools—motion sensors, thermal sensors, ground surveillance radar, night vision devices, etc.—may also present an obstacle, therefore requiring specialised training to lessen the risk of triggering these systems. If the sniper suspects at any point that his position has been compromised, he must take immediate action either by freezing in place or manoeuvring quickly to a safe spot.⁵⁷ Since stalking over long distances may be required, snipers should not only be in peak physical condition, but be able to stay alert over long

49. Spicer, Mark. *An Illustrated Manual of Sniper Skills*.

50. West, John. *Fry The Brain: The Art of Urban Sniping and Its Role in Modern Guerrilla Warfare*. Countryside, VA: SSI, 2008.

51. Spicer, Mark. *An Illustrated Manual of Sniper Skills*.

52. *Ibid.*

53. Special Forces Sniper Training and Equipment. 2017. Washington, D.C.: Department of the Army. [online] Available at: <https://www.bits.de/NRANEU/others/amd-us-archiv/EM3-05.222%2803%29.pdf>.

54. Spicer, Mark. *An Illustrated Manual of Sniper Skills*.

55. Special Forces Sniper Training and Equipment. 2017. Washington, D.C.: Department of the Army. <https://www.bits.de/NRANEU/others/amd-us-archiv/EM3-05.222%2803%29.pdf>.

56. Stronge, Charles. *Sniper in Action*.

57. Special Forces Sniper Training and Equipment. 2017. Washington, D.C.: Department of the Army. <https://www.bits.de/NRANEU/others/amd-us-archiv/EM3-05.222%2803%29.pdf>.

periods, always carefully planning their next move.

Shooting Skills

Many variables must be considered before firing once in a comfortable and stable shooting position—ideally either prone on the ground or seated in a chair. To achieve high accuracy and lethality, the sniper considers wind, air humidity, gravity, distance, and, in the event of a mobile enemy, the speed at which the target is moving. Wind strength and wind direction throughout the bullet's trajectory may impact the shot in ways that are difficult to predict. The bullet's speed, for instance, may slow down, and its path may be destabilised when met with strong wind resistance.⁵⁸ Strong winds also complicate the task of holding the rifle steady. Repeated practice, therefore, is the only way to fully understand and be able to correct wind's many effects. Additionally, high humidity levels increase the amount of resistance that the bullet faces on its path, therefore slowing it down and lessening the force of its impact on the target. With gravity pulling the bullet slightly downward to the ground, snipers practising long-distance shooting must compensate for this drop by aiming the rifle above the intended target spot.⁵⁹ Moreover, engaging a moving target often requires more skill than engaging a stationary one. The chances of failing in the mission are significantly higher, as the sniper must account for all previously mentioned factors, plus the target's speed. Also vital is

not allowing the sense of urgency to undermine careful calculations in all areas.

Calculating the distance between the sniper or observer and the target is another central skill of a sniper. To do so, the sniper relies on the eyes and technological aids, such as binoculars and lasers. Several factors impact this estimation, including the appearance of the target and the light conditions. Targets with a linear or regular outline (i.e. a building), or that contrast in colour with their background, seem closer than those with an irregular form (i.e. a tree) or blend in with their surroundings.⁶⁰ Similarly, targets viewed in broad daylight give the illusion of being closer than those same objects viewed at night, dusk, or dawn.⁶¹ Instead of relying solely on the naked eye, snipers use the reticle in their scope. The moment a marksman believes to have a legitimate target, he must quickly decide whether to shoot. Opportunities are often fleeting and require fast action. A final vital skill of a sniper is disciplined trigger control. When firing, the sniper must apply very smooth and quick pressure to the trigger without disturbing the aim and the position of the rifle, neither during the pull nor the release.⁶²

As evidenced by the extensive expertise demanded of marksmen, “the modern sniper is not an assassin but a specialist in fighting in very different circumstances”.⁶³

Counter Sniping

Counter sniping represents the set of multimedia and methodological approaches used

58. *Ibid.*

59. *Ibid.*

60. *Ibid.*

61. *Ibid.*

62. Spicer, Mark. *An Illustrated Manual of Sniper Skills*. Barnsley, South Yorkshire, England: Pen & Sword Military, 2016.

63. Stronge, Charles. *Sniper in Action*.

to prevent the threat of an enemy sniper.⁶⁴ As such, it is much more than the sniper versus sniper scenario. A counter-sniping team will often be called upon to evaluate the risks and provide advice on the methods to reduce the threat of a sniper attack, for instance.

Counter-sniper tactics, techniques, and procedures (TTP) involve two types of actions, active countermeasures and passive countermeasures. Each have their place depending on the mission, enemy, terrain, troops available, time, and civilian considerations (METT-TC).⁶⁵ Some methods are routine for highly trained combatants, while others require additional training. No matter which TTP is employed, snipers must enact the measures rigorously to minimise casualties, with ene-

my snipers being able to wait for hours before unleashing a shot when the targets' guard is down.⁶⁶

Reducing the Risk of Damage: Passive Counter Sniping

Passive countermeasures deny the enemy snipers from acquiring the space or time to fire on their target and, generally, reduce fire risk. Many pre-emptive techniques are not unique to snipers but are common sense methods employed by traditional infantry units.

The first consideration of counter-sniper teams will be that of predicting the threat from the enemy. In military or terrorist operations, the attack is necessarily preceded by a period of intel gathering, planning, and



Snipers in Afghanistan

Stronge, C. *Sniper in Action: History, Equipment, Techniques*. (Amber Books Ltd. London. 2011). P 317

64. Spicer, Mark. An Illustrated Manual of Sniper Skills.

65. Natolochnaya, Olga V, and Aleksandr A. Cherkasov. "The use of snipers in the military world: training, qualifications and technologies." *Военный сборник* 3 (2014): 187-192.

66. Ibid.

mobilising persons and resources, the likes of which have identifiable aspects.⁶⁷ During the stalking phase of an attack, snipers often try to identify the targets. High ranking officials such as Generals or Non-Commissioned Officers (NCO) are primary targets for snipers. As such, leaders must wear appropriate battle wear to blend in with other troops (with no visible badges) and keep in mind their body language and other elements that could alert enemy snipers. Furthermore, using easily identifiable equipment will create an easy target.

Secondly, limiting exposure is of crucial importance when dealing with enemy sniper rifles. The counter-snipers must be wary of the terrain they are operating in, denying the enemy with overwatching positions. This can mean deploying friendly forces in those areas or modifying the terrain to deny line of sight of enemy snipers. In terms of movement, it also entails moving quickly across open areas that cannot be avoided, moving in the shadow, dispersed, using travelling or bounding overwatch, avoiding lighted areas at night, avoiding being silhouetted against lights or the skyline, or remaining crouched behind concealment whenever possible.⁶⁸

Locating Enemy Snipers

One of the most, if not the most key requirement for counter-sniping is a good intelligence system. There is a finite number of ways in which a sniper can operate, usually restricted by the distance, the aim, the desired effect, and the readiness to be caught or killed.⁶⁹ The traditional methods of intelligence-gathering

range from human (HUMINT) to electronic (ELINT) but are now being supplemented by non-traditional methods, particularly with the internet.⁷⁰

Observation posts and aerial observers are often used to maintain surveillance over an area and detect snipers moving into a position for a shot. Several indicators can be used to identify a sniper from spotting soldiers in camouflage uniforms, single-shot firing, light reflecting from optics, the shockwave from the muzzle, or small patrols of one to three men. Once the information has been evaluated, the counter-sniping team will determine the patterns and routines and establish the movement and locations of the enemy. As such, the sniper must put himself in the shoes of the enemy to prevent the threat. Usually, these sniper units will be equipped with high-power telescopes and night vision such as thermal devices. Additionally, some situations require binoculars, often coupled with laser/rangefinders. Aerial observers can operate in several ways, from helicopters to UAVs.

Sound delay is an effective method employed to identify sniper locations. The sonic boom created by the supersonic speed of the bullet creates a crack. If the speed of the bullet is known, the counter-sniping team can calculate the distance by measuring the difference between the bullet passing and the sound delay. However, this system can have mixed results in urban settings due to the reverberation of sound on the surrounding buildings. In areas with fields of fire less than 300 metres, constant reconnaissance around a sniper's position hinders its ability to fire undetected.

67. Spicer, Mark. *An Illustrated Manual of Sniper Skills*.

68. Pike, John. "Sniper and Countersniper tactics, techniques and procedures." Accessed August 24, 2021. <https://www.globalsecurity.org/military/library/policy/army/fm/3-06-11/ch6.htm>.

69. Spicer, Mark. *Illustrated manual of sniper skills*.

70. *Ibid.*

Typically, the ideal position for a sniper would be at 300 to 600 metres, however, at less than 300, snipers are more easily detected. Snipers operate in small groups, as such, if discovered by a patrol, they are at a serious disadvantage.⁷¹ In these tighter settings, patrols can use dogs to quickly identify snipers, as dogs are very effective when searching large buildings, for instance, in urban settings.⁷²

Counter-Attacking the Sniper

When an enemy sniper is identified in the area of operation, the counter-sniper team has multiple options. If the enemy sniper is in the sights of the friendly sniper, they can take him down themselves. If the location is known but concealed behind a protective cover, the sniper can use anti-material fire to shoot through walls.

Often, particularly in urban settings, the sniper's precise location is unknown, and counter-snipers operate only with knowledge

of general directions of fire. In these cases, the snipers can direct the fire of other units with additional pre-plotted targets.⁷³ The use of overmatching can stop snipers and induce fear in enemy snipers. Massive return of fire can be effective in short-range sniper attacks if the ROE permits it, by using grenade launchers, mortars, light anti-tank weapons, or even airstrikes.⁷⁴ Furthermore, this can be combined with pincer movement, where infantry units use the cover of artillery attacks to flank the snipers from both sides. This decreases the chances of the enemy finding a stealthy escape route. Smokescreens can also be used to block the field of view of snipers and thus limit their tactical advantage.

During offensive operations in high-intensity urban warfare, pre-emptive fire can suppress potential enemy snipers before their location is even detected.

NEW ISSUES, NEW TECHNOLOGIES

Snipers and Asymmetrical Warfare

Ajeay Lele defines asymmetric warfare as “a form of warfare in which a non-state actor uses unconventional tools and tactics against a state’s vulnerabilities to achieve disproportionate effect, undermining the state’s will

to achieve its strategic objectives”.⁷⁵ More broadly, it is a “mode of combat where the aims, means or methods [and the power] of the conflict parties are substantially dissimilar”.⁷⁶ Asymmetric warfare has always existed. However, in line with the chronological evolution of the sniper’s role this paper fol-

71. Pike, John. “Sniper and Countersniper tactics, techniques and procedures.”

72. *Ibid.*

73. HEADQUARTERS, FIELD MANUAL. “SNIPER TRAINING.”, 1994.

74. Natolochnaya and Cherkasov. “The use of snipers in the military world, 187-192.”

75. Lele, A. “Asymmetric Warfare: A State vs Non-State Conflict”. OASIS No. 20, July – December, 2014. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2574274, 103.

76. Mello, P. “Asymmetric Warfare”. The Wiley-Blackwell Encyclopedia of Sociology, Ed. George Ritzer, 2nd edition, October 2014. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2571255

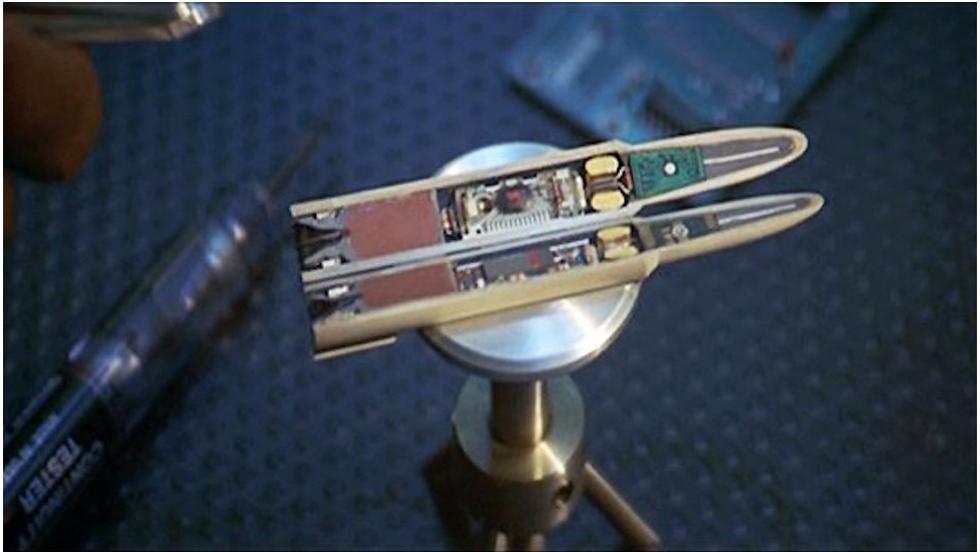
lows, this chapter only focuses on the 21st century. Considering the recent events and developments following the withdrawal of the American troops, the focus will be on the role of snipers in the wars in Afghanistan and Iraq. The two countries shared similarities concerning the nature of the threat and the enemy's characteristics but differed greatly regarding the terrain and environments snipers had to adapt to. In Afghanistan, the conflict was mostly fought in open and mountainous remote areas, where long combat ranges required the skills of the expert rifleman. In contrast, snipers in Iraq fought in urban environments, hidden in buildings or on flat rooftops, against an enemy that could quickly disappear.⁷⁷ Due to the space limits imposed to this paper, only some general aspects of the employment of snipers in the two wars will be

described. For a deeper analysis of the role of snipers in Afghanistan and Iraq, the authors recommend the books by Stronge (2011) and Neville (2016).

Snipers in Afghanistan

Although the foreign intervention in Afghanistan was initiated in 2001 when Operation 'Enduring Freedom' was launched, it was only in 2006 that snipers became an essential tool for the coalition forces. From that year on, the Taliban, which had rebuilt their forces while the US were busy in Iraq, became the protagonists of an insurgency war which could not be fought with airpower alone.⁷⁸

Snipers were deployed to carry out different kinds of missions: overwatch, counter-IED, counter-sniper, counter-IDF missions, and training of Afghan forces' snipers. The over-



Smart Bullet description

⁷⁷. Ibid.

⁷⁸. Neville, L. *Modern Snipers*. Osprey Publishing. New York, 2016.

watch missions were the most common and served to “provide early warning of insurgent intentions”, “provide precision supporting fires once the enemy’s intentions were confirmed”, and guard the flanks of advancing patrols.⁷⁹ Subject to their “eagle-gaze” were so-called Key Leadership Engagements (KLE), Afghan national police outstations and checkpoints, as well as local markets, which were often targeted by suicide bombers or IED emplacements.⁸⁰ As the wording suggests, the counter-IED missions aimed at destroying the devices by sniping them from a distance.⁸¹ Considering the terrain, counter-sniper missions were very challenging as Taliban snipers used tunnels and caves to escape.⁸² Counter-IDF missions served to interdict enemy mortars and rockets. At the same time, the training of Afghan snipers consisted of a two-week programme that imparted the basics of marksmanship, range estimation, and fieldcraft to Afghan soldiers.⁸³ Although often restrained by the rules of engagement, the death toll produced by snipers contributed to freeing many local villages from the Taliban’s control and made civilians feel freer and less intimidated by the insurgents.

Urban Warfare in Iraq

Snipers were deployed to Iraq to carry out the same five kinds of missions that were to be carried out in Afghanistan. However, as mentioned above, while in Afghanistan, the terrain “required training on high and low-an-

gle shooting”⁸⁴, in the mountainous north and the vast southern deserts of Iraq, the war against the insurgents was fought in cities. Urban warfare presents many challenges: first, casualties among civilians are more common as collateral damage, second, insurgents can easily camouflage among civilians, get protection from sympathizers and easily disappear, and third, it is not always possible to check for or find the body.⁸⁵ Thus, besides wind and sandstorms calculations, snipers had to deal with moving targets that were not easily distinguishable from the local population.

Snipers would mount observation posts either on flat roofs or inside buildings (making holes in the walls to be best concealed) and spend days and nights observing the patterns of life of the local population. Snipers, indeed, are not required to spend all the time in kinetic positions but are essential in gathering intelligence on the routines and habits of local people to identify when someone stands out and could represent a security threat. In Iraq, snipers’ work had positive effects: insurgents saw their freedom of movement denied and morale diminished.

As Strong states, “[t]he requirement for snipers in both Afghanistan and Iraq [grew] exponentially”, while in previous conflicts “they were regarded as something of an optional extra, [now they] found themselves overbooked”.⁸⁶

79. *Ibid.*, 107.

80. *Ibid.*

81. *Ibid.*

82. Stronge, C. *Sniper in Action: History, Equipment, Techniques*. (Amber Books Ltd. London, 2011).

83. Neville, Leigh. *Modern Snipers*. Osprey Publishing. (New York, 2016).

84. *Ibid.*, 103.

85. *Ibid.*; Stronge, C. *Sniper in Action: History, Equipment, Techniques*. (Amber Books Ltd. London, 2011).

86. Stronge, C. *Sniper in Action*.

Technological Developments in Sniper Tactics

Long Range Snipers

Nowadays, both Russian and American snipers have effective ranges from 1,500 metres to 2,000 metres.⁸⁷ With the ORSIS T-5000 and the McMillan Tac-338, snipers can eliminate targets from kilometres away. These sniper rifles are already changing the way the military thinks about counter sniping tactics.

Recently, Russian company Lobaev Arms claimed a world record with its Sumrak (Twilight) rifle by reaching a target over four kilometres away.⁸⁸ The Sumrak fires .408 CheyTac (10.3 mm) cartridges, which exit the barrel at over 900 metres/second and can pierce through 3 centimetres of metal.⁸⁹ These weapons require highly trained marksmen, complete information about the exact winds, and a correction for the Earth's rotation. However, in the future, these snipers will redefine the concept of "a safe distance" and become new masters of the battlefield.⁹⁰

Smart Bullets

Smart ammunition is something that will greatly improve the accuracy of sniper units across different terrains.⁹¹ Through the integration of optical sight and control to ammunition systems, it is projected to greatly improve distance at night and in poor weather

conditions.⁹²

As of 2008, The US' Extreme Accuracy Tasked Ordnance (EXACTO), in coordination with the Defense Advanced Research Projects Agency (DARPA), started developing a smart sniper system including smart bullets.⁹³ In 2014, they released a video showing a .50 calibre bullet changing trajectory mid-flight.⁹⁴ In 2016, Russia announced that it was developing a similar kind of smart bullet.

The guiding mechanism ensures that snipers maintain a high level of accuracy independent of external conditions that could impact the bullet's trajectory, such as weather or target movement. It works on an integrated micro-gyroscopic system that alters the spin of the bullet, allowing it to swerve in mid-air.⁹⁵ Coupled with a laser guidance system, the bullet uses a 'shoot and update' system, whereby once the bullet has left the gun, the shooter updates its target by following the target with the laser. The bullet and the sniper thus exchange information to reach the target. As such, "the direction of extension of the spoiler is selectively controlled by controlling the operation of the motor in response to the guidance information".⁹⁶ In theory, it will be possible to shoot targets behind corners or protective cover in that respect.

Other types of smart ammunition systems are also being developed, such as bullets that transmit data (for the presence of chemicals or

87. Hambling, David. "A New Russian Sniper Rifle Is Redefining 'A Safe Distance'." This New Russian Sniper Rifle Is Redefining 'A Safe Distance'. Popular Mechanics, February 18, 2021. [online] Available at: <https://www.popularmechanics.com/military/weapons/a14382207/russian-sniper-rifle>.

88. Litovkin, Nikolai. "Sumrak - the Only Sniper Rifle in the World with a 4KM Range." Russia Beyond, July 3, 2020. [online] Available at: <https://www.rubt.com/science-and-tech/332153-sumrak-sniper-rifle>.

89. Ibid.

90. Hambling, David. "A New Russian Sniper Rifle Is Redefining 'A Safe Distance'."

91. Barisik, Erdem, and Gokhan Baltacioglu. "The Employment of Sniper in Modern Battlefield." Journal of Management and Information Science 2, no. 1 (2014).

92. "EXtreme ACcuracy Tasked Ordnance (EXACTO) (Archived)." Darpa rss. Accessed August 27, 2021. [online] Available at: <https://www.darpa.mil/program/extreme-accuracy-tasked-ordnance>.

93. Ibid.

94. Sanchez, Annabs. "Watch DARPA's NEW Self-Guided Bullets Turn in Mid-Flight, Following Their Target." Futurism, March 17, 2016. [online] Available at: <https://futurism.com/wants-to-curve-bullet-now-a-reality>.

95. Lipeles, Jay. "Smart Bullet Patent.", July 23, 2002. [online] Available at: <https://www.freepatentsonline.com/6422507.html>.

96. Ibid.

explosives, for instance)⁹⁷ or self-destructing bullets in case of a miss in a crowded civilian area.

Single-Shooting Systems

To neutralise their targets, snipers usually only have one opportunity to pull the trigger. Single-shooting systems allow snipers to neutralise a target with only one shot. The technology is incorporated into the sniper's weapon scope. The distance-to-target is measured using a single shooting system that considers the meteorological conditions and reflects the measured distances to the scope.⁹⁸

The system uses a version of the 'lock and launch' systems used by fighter jets to fire without needing precision aiming. As such, it lets the user choose a target within the weapon sights and then the weapon the best opportunity to shoot whilst compensating for "factors like wind speed, arm shake, recoil, air temperature, humidity and the bullet's drop due to gravity, all of which can affect accuracy".⁹⁹

In tests, even novices were able to hit targets at 500 to 900 metres.¹⁰⁰ In that respect, such systems could eliminate the need for highly trained sniper personnel, greatly reducing cost and time.

Optical Sight Systems Mounted on Weapons

This is a system designed to help you improve

long-distance shooting skills on non-sniper rifles. Putting the device onto a rifle is expected to transform light guns into precision sniper rifles. The system reveals the ideal position for covering the target with fire by providing the target's distance from the sniper, vertical and horizontal deviation, wind speed, pressure, temperature information, and the target's distance from the sniper. As such, it improves the precision and distance of fire of traditional weapons.

Drone Snipers

In 2017, Duke Robotics, a contracted defence company based in Florida, developed the TI-KAD sniper drone and recently sold some to the Israeli military.¹⁰¹ Unlike Reaper or Predator drones equipped with hellfire missiles, these drones are small (essentially commercial drones) and designed for urban warfare. They are equipped with a sniper rifle mounted on an automated gimbal which turns progressively, keeping it pointed the correct way. The recoil is distributed through adaptable plates to limit the general impact of a shot.¹⁰²

Although attaching weapons to commercial drones is not a new idea, this represents another step towards autonomous warfare, removing the traditional sniper. Duke's motto is "no boots on the ground"¹⁰³, and these drones speak to an unused strategic capability, a future where outfitted drones can do a human soldier's work.

97. Knight, Will. 'Smart bullet' reports back wirelessly, May 28, 2004. [online] Available at: <https://www.newscientist.com/article/dn5054-smart-bullet-reports-back-wirelessly/?ignored=irrelevant>.

98. Barisik, Erdem, and Gokhan Baltacioglu. "The Employment of Sniper in Modern Battlefield." *Journal of Management and Information Science* 2, no. 1 (2014).

99. Marks, Paul. "Self-Aiming Rifle Turns Novices into Expert Snipers." May 20, 2013. [online] Available at: <https://www.newscientist.com/article/dn24571-self-aiming-rifle-turns-novices-into-expert-snipers/>.

100. Ibid.

101. Brown, Daniel. "A US Defense Contractor Developed a Drone That Can Fire a Sniper Rifle." *Business Insider*. Business Insider, August 16, 2017. [online] Available at: <https://www.businessinsider.com/a-us-defense-contractor-developed-a-sniper-drone-that-could-save-lives-2017-8?IR=1>.

102. Hambling, David. "Uh-Oh. Here Come the Sniper Drones." *Popular Mechanics*. Popular Mechanics, December 13, 2019. [online] Available at: <https://www.popularmechanics.com/military/research/news/a277534/hobby-drone-sniper/>.

103. Duke Robotics Inc. "No Boots on the Ground." Accessed September 3, 2021. [online] Available at: <https://dukerobotics.com/>.

CONCLUSION

Over the past century, snipers have gone from being an optional extra to becoming a vital tool for any party involved in a conflict. From the American Revolution to the two World Wars, the conflict in Vietnam, and the most recent insurgencies in Iraq and Afghanistan, the role of the sharpshooter has increasingly gained prominence and complexity. It is now widely seen as imprudent for an army or group of insurgents to enter a conflict without being backed by their own set of snipers.

Technological improvements will continue to support the development of this niche within modern warfare. Indeed, the extensive list of skills of the sharpshooter has evolved in parallel with these technological strides. These experts in the art of stealth and deception have stretched the limits of warfare. Well-trained and well-equipped snipers altogether guarantee a level of precision, lethality, and demoralising force that ordinary infantrymen cannot typically provide.

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Created in 1953, the Finabel committee is the oldest military organisation for cooperation between European Armies: it was conceived as a forum for reflections, exchange studies, and proposals on common interest topics for the future of its members. Finabel, the only organisation at this level, strives at:

- Promoting interoperability and cooperation of armies, while seeking to bring together concepts, doctrines and procedures;
- Contributing to a common European understanding of land defence issues. Finabel focuses on doctrines, trainings, and the joint environment.

Finabel aims to be a multinational-, independent-, and apolitical actor for the European Armies of the EU Member States. The Finabel informal forum is based on consensus and equality of member states. Finabel favours fruitful contact among member states' officers and Chiefs of Staff in a spirit of open and mutual understanding via annual meetings.

Finabel contributes to reinforce interoperability among its member states in the framework of the North Atlantic Treaty Organisation (NATO), the EU, and *ad hoc* coalition; Finabel neither competes nor duplicates NATO or EU military structures but contributes to these organisations in its unique way. Initially focused on cooperation in armament's programmes, Finabel quickly shifted to the harmonisation of land doctrines. Consequently, before hoping to reach a shared capability approach and common equipment, a shared vision of force-engagement on the terrain should be obtained.

In the current setting, Finabel allows its member states to form Expert Task Groups for situations that require short-term solutions. In addition, Finabel is also a think tank that elaborates on current events concerning the operations of the land forces and provides comments by creating "Food for Thought papers" to address the topics. Finabel studies and Food for Thoughts are recommendations freely applied by its member, whose aim is to facilitate interoperability and improve the daily tasks of preparation, training, exercises, and engagement.



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