FINABEL
THE EUROPEAN LAND FORCE
COMMANDERS ORGANISATION

DECEMBER 2025

Special Operations Forces for the Evolving Battlefield

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RESEARCH REPORT

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RESEARCH REPORT

Introduction

In 2024, the United States Department of Defense's Joint Special Operations Command (JSOC) issued a call for new technologies to assist with future military initiatives, including a request for "technologies that can generate convincing online personas for use on social media platforms, social networking sites, and other online content" (US Joint Special Operations Command [USJSOC], 2024, p.11). This suggests that the US JSOC is interested in using technologies such as artificial intelligence (AI) and deepfakes to wage psychological warfare, raising questions of how Special Operations Forces are adapting to a changing battlefield.

There are competing definitions for special forces. NATO defines special operations as "military activities conducted by specially designated, organised, selected, trained, and equipped forces using unconventional techniques and modes of employment" (NATO, 2024, para. 2). However, Spulak argues that defining special operations in this way is too broad: by this definition, the US pilots who flew the first atomic bomb mission would qualify special operators, as they were selected and trained to use unconventional techniques for strategic gain (Spulak, 2007, p. 2). Watling (2021) argues that SOF are unconventional units that are subject to higher levels of training and screening, operating outside the conventional force structure (p. 3). They perform strategic reconnaissance, raiding, Foreign Internal Defence (FID), and direct action (Watling, 2021). Spulak (2007) defines special forces philosophically, claiming that SOF overcome 'Clausewitzian friction' with superior training, adaptability, and flexibility (Spulak, 2007). Clausewitzian friction refers to the constraints arising from human limitations, uncertainties inherent in the fog of war, and the nonlinearity of combat, which often hinder the effectiveness of conventional forces (Spulak, 2007). Hence, SOF operators are specifically identified, trained, organised, and equipped to perform special reconnaissance or direct action more efficiently than their conventional counterparts. The hybrid definition acknowledges the organisational uniqueness of SOF units, their flexibility in comparison to conventional forces, and their typical mission profiles.

The global security environment in which SOF operate has evolved with the introduction of new technologies and methods. SOF operations historically included critical infrastructure disruption, sabotage, espionage, and hostage operations (Watling, 2021), but the advent of AI (Humble, 2024), new operational theatres like the Arctic and space (Kristiansen and Stringer, 2025), and digital misinformation campaigns (Kalenský and Hanhijärvi, 2025), raises a question on whether the role of the SOF operator will change yet again. Through a case study approach, this paper argues that the role of SOF operators is not evolving in and of itself; instead, operators are applying previously developed capabilities and skillsets to increasingly complex environments.

2. Context and Threat Picture

2.1. *Changing Nature of Warfare*

The roles of SOF in irregular warfare have evolved throughout the 21st century, adapting to specific operational environments. Former British Prime Minister Winston Churchill believed in SOF's ability to "set Europe ablaze" during World War II, conduct raids, and organise civilian resistance efforts in Nazi-occupied territory (Titulaer, 2021). During the Cold War, special forces operations focused more on political subversion. The SAS trained and equipped "stay-behind armies" during Operation Gladio (Ganser, 2005, p. 42), while the Soviet Spetsnaz supported insurgencies by equipping rebels with tactics and training (Galeotti, 2020). The Global War on Terror (GWOT) shifted foci towards raids and capacity building. SAS troops worked along with US Special Forces to raid villages and caves in search of Osama Bin Laden during Operation Enduring Freedom (Lambeth, 2005). Russian forces have also provided training support to the Syrian Arab Army (McDermott, 2019). While SOF operations have changed over time, modern threats are unlike any other. For example, social media and the cybersphere are new domains for battle, where anonymous social media accounts and cyberattacks can impact public opinion (Wong, 2021) or even compromise nuclear fuel enrichment facilities (Sanger, 2012). AI technology, including autonomous drones and deepfakes, is impacting the conduct of conventional battle (Bendett and Kirichenko, 2025), while fuelling misinformation campaigns and galvanising misplaced anger (Klepper, 2023). Additionally, outer space and the Arctic are emerging as novel regions for geopolitical competition.

2.1.1. *Space*

The US and the USSR began competing for space supremacy in the 1950s, using missions such as Sputnik and the moon landing to assert control beyond Earth's boundaries. During the Cold War, the US CORONA program utilised satellites to provide space-based reconnaissance and intelligence to American military planners. At the same time, the Soviet Union developed the Oko system to detect missile launches and ensure a second-strike capability (Dugger, 2025). In recent years, developments in the private sector and their impact on the war in Ukraine have prompted a resurgence in space-related operations. Companies such as SpaceX and its subsidiary, Starlink, are key players in this field, providing a military advantage to Ukrainian forces in GPS-denied environments (Jayanti, 2023). Hence, from public actors to the private sector, space offers an increasingly contested theatre as entities jostle for the best possible information, communications, and surveillance networks.

2.1.2. *Arctic*

As the Northern Sea Route becomes increasingly navigable, nations are expanding their presence in the Arctic region. For example, Russia has refurbished several Cold War-era military and naval bases, which now feature S-400 Surface-to-Air missile systems, alongside

Su-24 and MiG-31BM interceptors (Kjellén, 2022). Its North Fleet includes troops and submarine interceptors, in addition to surface ships with missiles and nuclear-capable submarines (Conley et al., 2020). NATO Allies have similarly expanded their presence, with Sweden developing two subarctic mechanised brigades in Boden and Skövde that will be operational by 2028 (Middleton, 2025). As states continue to increase their investments and troop deployments in the Arctic, the region will likely become increasingly subject to strategic competition, requiring the attention of special forces.

New domains, such as the Arctic and outer space, are becoming zones of strategic competition, demanding more resources, training, and materiel from states (Kristiansen and Stringer, 2025). The following case studies illustrate how SOF units are adapting and applying their capabilities to operate in increasingly complex environments.

3. Discussion on Case Studies

This paper presents three case studies to explain how special forces are adapting to the modern global security environment. First, the UK's Special Forces (UKSF) is the gold standard for SOF worldwide. Norway's Forsvarets Spesialkommando (FSK) provide insight into the efforts of an Arctic nation that shares a land border with Russia. Finally, the Russian Spetsnaz's adaptations through the war in Ukraine and other grey zone operations reveal how Europe's potential adversaries are adapting to an evolving battlefield.

The discussion on Russian Special Forces, popularised as the "spetsnaz", requires some context. First, the term "spetsnaz" is a catch-all for several types of special mission units and does not capture the equivalent of the SAS or the FSK. The Komandovanie Sil Spetsial'nykh Operatsiy (KSSO; Special Operations Forces Command) is a more appropriate Russian counterpart. Second, reports allege that 4 in 5 Spetsnaz battalions have a 90% attrition rate as a result of the war in Ukraine (Horton, 2023), suggesting a multi-year process for restaffing and rebuilding Russia's special operations capabilities (Atlamazoglou, 2024).

Additionally, it is prudent to note that states are unlikely to share the most up-to-date information regarding the status and tactics of their SOF units. Due to this, the information in this paper is gathered on a best-effort basis from public sources. For a comprehensive evaluation, this paper will compare case studies across three categories: (i) taskings and force structure; (ii) technological adaptation; and (iii) training and readiness.

3.1. *Taskings and Force Structure*

In 2021, the UK Government has designated several special operations-capable units as part of the UKSF (United Kingdom, Ministry of Defence [MoD], 2025), enabling units defined as Tier 1 to undertake higher-risk mission sets. The UKSF contains three Tier 1 special operations groups: the land-based Special Air Service (SAS), the sea-based Special Boat

Service (SBS), and the Special Reconnaissance Regiment (SRR), which specialises in strategic reconnaissance and reporting (Atlamazoglou, 2021). Several other units support SOF activities and are special operations-capable, but they are not designated as special forces units. These units, such as the Ranger Regiment and the Royal Marine Commandos, undertake lower-stakes missions that do not require SOF units, including training and advisory, capacity building, and FID (White, 2025). This allows for designated SOF units to prioritise higher-stakes operations, such as direct action and strategic reconnaissance. The transition is evidence of policy adaptations by governments to allow SOF operators greater capacity to adapt to emerging threats.

The Norwegian FSK operators are adept at sharing information across services, allowing SOF units to act as strategic facilitators and combat misinformation in both military and civilian environments (Johansen & Gråtrud, 2018). In military scenarios, FSK operators can reliably deploy tools to obtain accurate in-theatre intelligence that is useful for follow-on forces, especially in an electronic warfare-dominated environment. In civil cases, FSK units can enhance precise service delivery for civil defence personnel during a potential domestic mass-casualty attack through strategic reconnaissance (Mattingsdal et al., 2025; Johansen & Gråtrud, 2018)

The Russian case is atypical. The KSSO is a political warfare asset and the primary operator in Russian hybrid warfare. For example, KSSO units were a part of the infamous "Little Green Men" who were deployed to Crimea in 2014 (Hedlund, 2019). In a bloodless coup de main, these units seized control of military headquarters and other compounds, serving as a "decisive element" (Bukkvoll, 2016, p. 17) in the bloodless takeover of the Crimean Peninsula. Hence, instead of equipping SOF units to prevent and combat grey-zone operations by foreign belligerents, the Russian KSSO can be seen as the perpetrator of these operations.

In summary, Western military planners are clarifying the role of SOF operators in a hybrid environment. The UK is freeing its SOF units of unnecessary low-stakes operations so that it can hone their competencies for high-stakes missions. Norway is prioritising the role of the FSK as trusted sources of information in uncertain environments. The Russian case, however, is the anomaly: the KSSO sets the pace for hybrid warfare and is often its main perpetrator. What is clear is that core roles are not changing. They are adapting to a different battlefield.

3.2. *Technological Adaptation*

The UK Government is expanding its priorities within the English defence establishment to better prepare UKSF for an evolving battlefield. First, noting the growing threat of misinformation in hybrid warfare, the Ministry of Defence (MoD) has adopted an "Information Superiority" approach (MoD, 2018, p. 1-8), focused on equipping soldiers with

the tools to efficiently execute their Observe, Orientate, Decide, Act (OODA) loop to outpace and outmanoeuvre their enemy. SOF units conducting clandestine operations in hostile territory will significantly benefit from a wide suite of Intelligence, Surveillance, and Reconnaissance hardware and software to avoid detection, neutralise threats, and ensure accurate and reliable information. Second, the UK Government aims to integrate AI into every level of the British armed forces, aiming to reduce burdens on human cognition and generate a decision advantage (MoD, 2022). AI will similarly speed up allied forces' OODA loop, affording them a significant advantage over the enemy. Finally, the UK Government recognised the applications for unmanned aerial vehicles (UAVs) and launched its Defence Drone Strategy, which articulates its goal to become a world leader in unmanned defence systems across all domains (MoD, 2024). While the plan does not specify any applications within the UKSF, it is likely that, as the "tip of the spear" of the British Armed Forces (MoD, 2025, p. 126), the UKSF will be the primary recipient of drone-related innovations and acquisitions, enabling units to integrate UAVs into hybrid warfare operations. Drone technology is already becoming integrated into British special forces training, with units operating uncrewed technology during a joint exercise with the Norwegian Armed Forces in northern Norway in October 2025 (Edvardsen, 2025). Thus, broader national plans undertaken by the UK MoD equip the UKSF with new tools and skills to better operate in the modern battlefield.

In addition to joint training exercises with British SOF, the FSK is working with the Norwegian private sector to develop technology that enables them to maintain technological superiority in the Arctic. Exercises like the Arctic Warrior Experiment offer opportunities for FSK and allied SOF to discuss and provide feedback to private companies on defence innovation and technology (Hofoss, 2025). During one such exercise, noting functional problems with ice build-up in drones deployed in the Arctic, the Norwegian-based company Ubiq presented de-icing solutions for drones working in extreme environments (Hofoss, 2025). Such innovations enable SOF operators to collaborate with the private sector in developing fit-for-purpose solutions that provide units with advantages in harsh terrain.

Finally, KSSO tests and trials novel weapons technology to retain advantages on the battlefield. For example, KSSO units are among the first to receive and test advanced sniper rifles and silenced mortars (Hedlund, 2019). Similarly, KSSO operators learn to use a wide variety of rifles manufactured outside of Russia, unlike their conventional counterparts. While conventional forces use the AK-47, KSSO operators are also trained in the German Heckler & Koch MP-5 and the American Glock-17 (Longstreth, 2023). Hence, the KSSO ensures institutional knowledge of weapons system developments worldwide to remain effective in hybrid conflicts, which present evolving challenges.

The specific technical abilities of SOF operators are understandably secret. In the UK's case,

some inference is required to understand that SOF operators will enjoy best-in-class equipment to ensure operational advantages. Norway and Russia are more public regarding the technology employed by special forces. In the former's case, public-private partnerships allow for operators and companies to exchange information on the development of fit-for-purpose technology that most effectively augments SOF. In the latter's case, operators employ a wide range of novel, geographically unrestricted weapons to improve agility and nimbleness on the battlefield. All in all, the core roles and mission sets of SOF operators are not changing; they must apply new skills and technologies to new environments.

3.3. *Training*

The UK partners with Norway to expose special forces to the harsh Arctic environment and ensure readiness for potential future conflicts in the region. The UKSF partners with the Norwegian Army annually in exercises such as Joint Viking and Cold Response, which involve thousands of UK soldiers, sailors, marines, and air personnel. While the SAS's involvement in such activities remains classified, UKSF plays a central role in the exercises, suggesting the presence of Tier 1 units in the Arctic training operations. For example, from September to October 2025, a contingent of UKSF participated in Exercise Arctic Tide, which focused on joint force deployment and assault missions in Arctic environments alongside logistics training. The exercise was designed to train troops to deploy rapidly, gain a foothold, and create a route for follow-on forces to pass through them (Edvardsen, 2025). These joint exercises hone UKSF competencies in Arctic environments.

The FSK is expanding training missions and exercises with its allies to hone Arctic competencies. For example, Norway participates in joint training exercises to develop and refine search and rescue techniques (Watch Staff, 2023). Exercises like Adamant Serpent also train Norwegian forces to rapidly deploy to Arctic environments, which are marked by harsh cold, difficult transportation, and limited connectivity (SOCEUR, 2025). Given that the Arctic is an expanding area of strategic competition, it is likely that there will be increased demand for disaster relief and search and rescue operations. SOF units are uniquely positioned to conduct these operations (Stringer, 2015). Hence, building competencies and conducting multi-partner exercises are effective methods for enhancing readiness in new operational environments.

Finally, the KSSO adapts to the increasingly technological nature of war by adopting new platforms. For example, Russian Defence Minister Andrei Belusov stated that Russian officers will begin training with unmanned aerial vehicles and drones (Noonan, 2025). The KSSO also acquired its own aviation command, indicating a potential shift towards developing expertise in UAVs and drones (Hedlund, 2019). Hence, the KSSO adapts to the future battlefield by keeping abreast of the latest technology.

Special forces in the UK, Norway, and Russia are increasing their capabilities to conduct hybrid warfare and adopting novel military technologies to ensure operational advantages

on modern battlefields. In the case of the UK and Norway, joint exercises in the Arctic are enabling rehearsals in deployment, movement, and logistics in new theatres of war. In the case of Russia, officers and operators are learning new skills and training with drone technology already visible in the war in Ukraine. The mission itself is not changing: operators are learning how to adapt and excel in new terrains and technologies.

Conclusion

While sabotage and surveillance continue to be components of modern warfare, the methods through which these operations are conducted are rapidly evolving in the response to new technological developments. Instead of destroying a particular physical asset, SOF may be charged with stealthily implanting a virus or a piece of hardware into enemy data centres or communications nodes. As the terrain in which conflicts are fought changes, SOF must adapt to operate in harsher environments with limited resources and communication capabilities. SOF operators do not have to change drastically in this new global security environment. Rather, they need the skills and tools to manage these changes while executing a largely consistent mission profile. Special Operations communities worldwide must also continue to monitor rapid developments in military tactics and technology to ensure that their forces retain advantages in waging all forms of war. This will enable SOF units to thrive in an information-dominated, technologically advanced, and increasingly complex battlefield.

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