



Maneuver Short-Range *Air Defense* in the *Offense*

By 1LT Brian Patterson

Background

From February 7th to March 26th, 2023, the Army's initial Sergeant (SGT) Stout (the maneuver short range air defense variant of the Stryker), platoon 3rd Platoon, A Battery, 5th Battalion, 4th Air Defense Artillery Regiment (3/A/5-4 ADAR), also known as the Deathstalkers, participated in the North Atlantic Treaty Organization's (NATO) Joint Viking 2023 international joint training exercise. The exercise consisted of NATO Basic Unit Cold Weather Training, joint training with the Norwegian Army's Air Defense Battery, a multinational force-on-force field training exercise, and a multinational combined arms live-fire exercise. This paper discusses lessons learned and offers recommendations based on the SGT Stout's performance during the exercise, particularly its ability to operate in the Arctic while supporting a foreign armored battalion in the offensive. The Deathstalkers successfully completed the mission through effective liaising with the supported unit, competence in maneuver tactics, and active participation in maneuver operations planning.

Train-Up

The Deathstalker Platoon followed a progressive training plan that included a field training exercise (FTX) and multiple gunnery certifications to prepare adequately for Joint Viking 2023. The key training events were a battery FTX, introductory Shoot-on-

the-Move training, the 101st Airborne Combined Arms Maneuver Live Fire Exercise (CAMLFX) and Fires Coordination Exercise (FCX), and a Section Live Fire.

The Shoot-on-the-Move training involved developing the crews' skills from engaging targets from a stationary position to engaging targets while moving. The first training involved one SGT Stout maneuvering through the training area while engaging personnel and vehicle targets at varying distances up to 1,000 meters. This progressed into adding a second SGT Stout to execute bounding overwatch together. The second crew could not engage targets due to training area constraints but still practiced the communication and coordination needed to maneuver through the battlefield safely and effectively. The SGT Stout proved effective during this exercise, with the advanced features of the Reconfigurable Integrated Weapons Platform (RiWP) allowing the gunner to maintain stable and consistent fire on the target.

During the CAMLFX with the 101st Airborne, one SGT Stout crew integrated with a light infantry company, completed day and night offensive and defensive missions, and engaged an aerial target with both the 30mm cannon (XM914) and the 7.62mm coaxial machine gun (M240C). This demonstrated the SGT Stout's capability to provide air defense during offensive operations.

The SGT Stout platoon leadership vehicle moving along Norway's E13 highway.



The final step of the Joint Viking train-up was a Section Live Fire, involving two crews executing bounding overwatch through an objective while engaging various targets. This training gave these crews the confidence and capability to shoot, move, and communicate simultaneously on the battlefield. To help facilitate the evolution of the branch's culture from static defensive positioning to a more dynamic approach ahead of future large scale combat operations, short-range air defense units must focus on learning maneuver tactics, techniques, and procedures. Crews must constantly practice, develop, and incorporate advanced techniques (to include shooting on the move and bounding) to hone their skills and bring a greater level of expertise for future integration into offensive operations. To achieve this, units must accurately forecast high ammunition expenditure during training to break the habit of firing solely as part of the semiannual Maneuver Short Range Air Defense Gunnery Program requirement. Meeting minimum gunnery requirements is insufficient for effective integration into the maneuver force.

In addition to those major training events, the platoon conducted advanced driver training, operations orders (OPORDs) development, operational graphics practice, and maneuver knowledge testing. Maneuver skills for the SGT Stout are critical for air defenders to master. Drivers

must train extensively through rough terrain while maneuvering. The platoon's training included driving through various adverse terrain features (steep inclines/declines, streams and ponds, rough/uneven terrain, and mud) and navigating around reinforcing obstacles. Additionally, the platoon practiced maneuvering through an open field while reacting to enemy contact. Finally, the soldiers and Non-Commissioned Officers (NCOs) of the platoon were trained on the aspects of an OPORD and the planning behind it, along with operational graphics and general knowledge of armored, Stryker, and infantry brigade combat teams. This training empowered vehicle commanders with the confidence and tactical knowledge to serve as air defense advisors to maneuver companies when task-organized and to operate independently while isolated from platoon leadership.

Execution

The Joint Viking 2023 FTX included the Norwegian Army's Brigade North alongside U.S. Army SGT Stout and Multiple Launch Rocket System (MLRS) units, British Army Commandos, and Dutch Marines fighting through 80km of urban, suburban, and rural terrain against British infantrymen and U.S. Marine Corps engineers. For the mission, the Deathstalker Platoon was attached to the Norwegian Air Defense Artillery Battery while providing direct support to

The SGT Stout platoon leadership vehicle moving along Norway's E13 highway.



Brigade North's 2nd Battalion (Armored). The SGT Stout platoon provided Short-Range Air Defense of the Brigade's main effort, the Armored Battalion, during its advance to seize multiple objectives throughout the region, including an airport, a key bridge, an assembly area, and a section of a city along a key fjord. At the same time, the Norwegian Air Defense Battery equipped with Norwegian Advanced Surface to Air Missile Systems (NASAMs) provided the brigade's rear area, general Area of Operations (AO), and critical assets with short to medium-range air defense while operating a joint Battery Command Post (BCP) with the SGT Stout battery headquarters. During the planning process, the platoon leader took part in the Armored Battalion's Military Decision-Making Process (MDMP) to provide air defense-centric input into the plan and Operations Order (OPORD). In particular, the platoon leader directly influenced Annex C (Operations); Annex D (Fires), Appendix 7 (Air and Missile Defense); and Annex E (Protection), Appendix 12 (Coordinate Air and Missile Defense) of the OPORD.

The Norwegian Air Defense Battery also conducted the MDMP (instead of Troop Leading Procedures), which included the SGT Stout platoon leader, platoon sergeant, battery first sergeant, battery systems integrator, and sentinel section leader.

Having a mixture of officer, warrant officer, and NCO knowledge and experience enhanced the planning process and allowed for the creation of a feasible, acceptable, suitable, distinguishable, and complete course of action.

During the operation, the SGT Stout platoon employed weighted coverage of the supported unit's AO by prioritizing enemy Air Avenues of Approach (AAA) instead of splitting up to defend individual companies. This was due to the canalizing axis of advance (following Norway's main highway through the Bardu River Valley) and the mixed mobility of the supported unit. Some companies were dismounted, conducting wet gap crossings over a frozen river, and maneuvering through the woods, while most companies were maneuvering off-road in tracked vehicles. This put the SGT Stout in a gray area between the two extremes. The wheeled nature of the SGT Stout limited its ability to traverse through the thick snow. Dismounting a man-portable air defense (MANPAD) team would lose the advantages of the infrared camera, cannon, and onboard radars that the SGT Stout provides and put the Soldiers at great risk of cold weather injuries during continuous operations. The SGT Stouts had to remain on the hardball roads for movement, maneuver, and emplacement while the supported unit conducted operations through the woods and snow-covered terrain. For future operations, it would be best to match the SGT Stout platoon with units of similar mobility to make the most of its capabilities and minimize the effects of its limitations.

The SGT Stouts maneuvered through the axis of advance in a platoon column and section file. The sections executed successive bounding overwatch along the highway, with each section taking hasty battle positions while the other moved. When the supported unit's advance was halted during slow breaches or intense fighting, the fire units would occupy more deliberate battle positions. All battle positions were near roads, with cover and concealment from nearby buildings or terrain features. The platoon attempted to follow the Armored Battalion's Leopard II path through the snow, but half the SGT Stouts got stuck at one point in the mission. Normally, recovery tactics use another SGT Stout equipped with a tow bar and/or ropes. However, the snow was so deep that the platoon requested the Armored Battalion's recovery assets, leading to a 16-hour wait for the final recovery of the SGT Stout. This was a planning consideration that was overlooked during MDMP. The platoon must coordinate recovery assets from the supported unit ahead of time and establish priorities for future missions, especially when SGT Stouts are assigned to operate independently.

The Deathstalker Platoon of A Battery, 5th Battalion, 4th Air Defense Artillery Regiment poses with their equipment following the conclusion of Joint Viking 2023.



Throughout the mission, the terrain significantly affected the platoon's ability to communicate and pass the air picture to the BCP. Mountainous terrain surrounding the valley, thick snow, and a crowded AO limited the positioning of the sentinel section. The sentinel section was acting as the retransmission node between the BCP and the platoon. The intent was to have it act as both a communications relay and as the primary air picture source for the platoon and the BCP. It is important to note that the Norwegian Air Defense Battery provided a security detail for the sentinel section to enhance its survivability in a contested AO. The physical limitations of the AO and the quick advance of the Armored Battalion made it difficult to maintain communications with the sentinel section.

The sentinel radar, being a towed radar, proved difficult to transport through the snow and adverse mountainous terrain of the valley. Additionally, due to maintenance issues with the Norwegian air defense radars, the sentinel radar was tasked to remain with the NASAMs to provide early warning for them. These factors, combined with line-of-sight limitations of the SGT Stout's voice and data communications equipment, made it difficult to maintain connectivity with the sentinel radar during the operation. The alternate early warning plan was the SGT Stout's on-board Multi-mission Hemispheric Radar (MHR). The Sentinel Radar provided air picture for the airspace above the valley, while the MHRs provided air picture within the valley, which was the most likely and most dangerous AAA.

Depending on the proximity of the platoon, the early warning task would rotate between trucks. However, the SGT Stouts faced a similar problem as the sentinel section in reaching ideal radiation locations, especially as the Armored Battalion continued to advance rapidly. Despite these issues, the planning during MDMP allowed for the platoon to remain flexible and adapt to the communications challenges through the contingency early warning plan. The contingency early warning plan became the method for most of the mission, using plain text messages from the liaison's Norwegian Blue Force Tracker. The platoon used the Norwegian system instead of the SGT Stout's Joint Battle Command Platform (JBCP) due to software issues. As the BCP received the early warning and air-related messages from the Norwegian Air Force's Air Operations Center and sentinel radar feed, they were relayed to the platoon leader and Norwegian liaison team. All early warnings would then be relayed over the radio via voice to the fire units, tasking them to focus efforts and adjust primary target lines and radiation schedules as enemy aircraft were identified within the AO. Once the enemy aircraft entered the valley, the SGT Stouts could detect them with the MHRs and engage.

The liaison proved to be a crucial asset to the success of the mission, as he was the link to communications with the Armored Battalion and BCP, early warning, and general situational awareness on the disposition of friendly and enemy forces. The absence of a liaison and their critical communications equipment will create a deficit in

The Multi-National SGT Stout (USA) and NASAM (Norway) Battery CP established during rehearsals at Setermoen Training Area, Norway.



passing of phase lines by friendly units would trigger the activation and deactivation of the SHORADEZs as the formation advanced through the battlefield.

During engagements with enemy aircraft, including rotary-wing and uncrewed aircraft systems, the SGT Stouts exercised positive controls such as Identification Friend or Foe (IFF) interrogation and visual identification to prevent fratricide. Standard operating and engagement procedures must adapt to allow the SGT Stout the freedom to conduct decentralized and autonomous operations, whether through streamlined higher echelon early warning dissemination, receiving airspace control measures, and tasking orders from the supported unit, or by using beyond-line-of-sight communications equipment.

Looking to the Future

For future operations with the SGT Stout, full integration and beyond-line-of-sight capabilities are paramount for mission success. The integration extends further than just communications and physical location, the platoon leadership must become essential figures in the supported unit's staff to ensure air defense is not only incorporated in the operations plan but also considered when

the SGT Stout platoon's ability to integrate with the supported Armored Battalion. The SGT Stout Platoon will need beyond-line-of-sight communication capabilities in the absence of a liaison to pass the air picture to the supported Armored Battalion thus allowing them to fully utilize the SGT Stout's mobility and maneuverability. It would also be beneficial to have command-and-control equipment, such as the Forward Area Air Defense (FAAD) computer and JBCP, in the platoon leader's vehicle in the future.

Despite these challenges, the platoon enjoyed a status of "weapons-free" during crucial moments of the mission, which would not have been possible without the procedural controls developed during MDMP. Short-Range Air Defense Engagement Zones (SHORADEZ) were developed to control the employment of the SGT Stout, and it mitigated any friendly fire incidents. The SGT Stout platoons were informed of the activation and deactivation of the SHORADEZ through procedural control methods using the beyond-line-of-sight communications equipment. The platoon synchronized the SHORADEZs with the phase lines of the maneuver operation to represent the airspace defended by the SGT Stout platoon within the valley. The dedicated airspace for a SHORADEZ was based on stinger missile capability and terrain limitations. The

A SGT Stout occupies a battle position in Heia, Norway during Joint Viking 2023.



The SGT Stout Sentinel Section's AN/TSQ-52 Tactical Command System emplaced under the Northern Lights during Joint Viking 2023.



planning the maneuvers and tactics being employed. For beyond-line-of-sight communications, the Mobile User Objective System (MUOS) waveform is the ideal method for the SGT Stout for voice and data. The MUOS waveform allows point-to-point and group voice and data transfer via satellite through the equipped 162 radio in the SGT Stout. Beyond-line-of-sight communications is a force multiplier to allow SGT Stouts to operate independently and properly employ the air defense artillery guidelines through a dynamic and mobile area of

operations during the offense. For line-of-sight communications, having a proper Warrior Robust Enhanced Network Narrowband Tactical Scalable Mobile Network (WREN-TSM) mission plan nested with the supported unit would also help extend the range of voice/data communications back to the BCP if MUOS or SATCOM is unavailable.

Conclusion

In conclusion, Joint Viking was a key step in the adaptation of the branch to the Army's newest air defense weapon system. The key After Action Review (AAR) sustainment factors included establishing a liaison with the supported unit or nation, participating in the production of orders and procedural controls, having vehicle commanders and crews with the confidence and tactical knowledge to operate independently, and the ability to maneuver as a section through a battlefield. The key AAR improvements factors involve having beyond-line-of-sight communications equipment, command and control equipment in the platoon leader's vehicle, preplanned, coordinated, and prioritized recovery support from the supported unit, and aligning the capabilities and limitations, particularly regarding mobility, with the supported unit.

Additionally, an important take away is to allow sufficient time for the training of Soldiers, especially NCOs, on the new equipment. As standardization and regulations are still in development throughout the units and the branch, small units must be allowed to explore the capabilities and limitations of the weapon system and have opportunities to train through advanced live fires and maneuver exercises with the presence of actual supported units to fully adjust to and effectively employ this new weapon system.

The SGT Stout Sentinel Section's AN/MPQ-64 Sentinel emplaced during rehearsals at Setermoen Training Area, Norway.



1LT Brian Patterson was the platoon leader for the Deathstalkers during Joint Viking 2023 while stationed with 5th Battalion, 4th Air Defense Artillery Regiment (5-4 ADAR) in Ansbach, Germany. 1LT Patterson also served as the BN AS3, where he was the lead battle captain for three rotations of Operation European Assure, Deter, and Reinforce (EADR). Following that, 1LT Patterson served as the Executive Officer of Bravo Battery, 5-4 ADAR, which included deployments to Poland and Romania in support of Operation EADR and Angola in support of Operation Eyes Out while managing the logistical, administrative, and tactical operations of the headquarters element and deployed platoons. Bravo Battery subsequently won the 2024 Knox Award for best active duty air defense battery. 1LT Patterson's military education includes the United States Military Academy, Air Defense Artillery Basic Officer Leader Course, the Stryker Leader Course, the Counter UAS Course, the Joint Firepower Course, and the Army Space Cadre Basic Course. 1LT Brian Patterson is now a student at the Air Defense Artillery Captain's Career Course.