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Roger Wortman

*United States Space Force*, [roger.wortman@unomaha.edu](mailto:roger.wortman@unomaha.edu)

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## Duffer's Drift and Space Operations

Roger Wortman

*Defence of Duffer's Drift, a popular Boer War tale among British infantry officers, teaches lessons for the future of space operations.*

Published in the early 20th Century, *The Defence of Duffer's Drift* is a work of fiction written as an educational tool for small unit leaders.<sup>1</sup> The novella outlines the experiences of a young lieutenant and his tumultuous path to success when charged with defending key terrain. Told through a series of dreams, *Duffer's Drift* provides multiple tactical lessons through an iterative process, each building on the previous sequence. The officer fails multiple times while learning from various mistakes while incrementally moving toward success.<sup>2</sup> Although the work focuses on ground combat and maneuver warfare, the principles addressed can be applied to a variety of fields. As such, *Duffer's Drift* is often suggested as professional development reading for many service members regardless of career field.<sup>3</sup>

The author, British Army Captain Ernest Dunlop Swinton, based the story on his own experiences during the Boer War of 1899-1902. Although *Duffer's Drift* draws from Swinton's days as a small unit leader, lessons within the tale move beyond tactical considerations and reinforce a wide array of combined arms principles. This enriches the story while also foretelling Swinton's eventual career progression as a professor, historian, war correspondent, and a forefather of armored warfare. Eventually attaining the rank of Major General, Swinton retired in

1919 and is considered one of Britain's leading military thinkers.<sup>4</sup>

The structure and flow of *Duffer's Drift* is reminiscent of a short autobiography vice an instructional pamphlet. Its first person narrative invites the reader to trust the author's authenticity while remaining open to the ideas and education provided through each dream sequence. Its time loop plot device is instantly recognizable by modern readers, although Swinton's pacing and adjustments through each dream enable the story to unfold naturally while avoiding needless repetition. At thirty-two pages, *Duffer's Drift* uses this simple and effective storytelling technique to educate the reader on the complexities of ground warfare. Additionally, this literary approach provides easy to absorb lessons and professional education for all ranks and career fields.

### LESSONS OF DUFFER'S DRIFT

The story's protagonist, Lieutenant Backsight Forethought, leads a light infantry unit deployed to southern Africa in service of the British Empire. Although the backdrop for *Duffer's Drift* is the Boer War circa early 1900s, the tale avoids commentary on geopolitical issues or reasoning for the

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<sup>1</sup> Roger Wortman is a civilian analyst with the U.S. Space Force. This article was written and submitted prior to him joining the service.

<sup>2</sup> Swinton, Ernest, "The Defence of Duffer's Drift," Department of Defense FMFRP 12-33, 1989. First published 1904.

<sup>3</sup> Baker, Deane-Peter, "Dreams of Battle: A Small Window into the Evolution of Us Army Tactical Ethics, 1921-2009," *Journal of Military Ethics* 13, no. 4 (2014): 302.

<sup>4</sup> Tucker, S., 500 Great Military Leaders, ABC-CLIO, LLC, 2014.

conflict.<sup>5</sup> Instead, the focal point of the story is how the officer navigates the complexities of warfare. The story itself begins with the lieutenant falling asleep after arriving at a river fording site he and his fifty men are charged with defending. Each vivid dream sequence pertains to the defense of the drift; and each sequence results in disaster for the lieutenant's men and mission. Yet, as the dreams progress, the lieutenant applies lessons learned to the subsequent scenario. A clear example is seen in the first dream sequence and its influence in decisions made in the second iteration.

In the first dream the lieutenant waits until the next day to begin defensive preparations. Sentries are placed around his forces to provide security; though little thought is employed to their positions. He allows local salesmen into the encampment to barter with his men. Tents are erected in plain view and consolidated. The enemy soon arrives; the battle is quick and destructive. The British element sustains multiple casualties and those who survive become prisoners. Reviewing his actions during defensive preparations, the lieutenant identifies four lessons learned:<sup>6</sup>

- Do not delay in preparing defenses.
- Placement and concealment of sentries is critical.
- Do not allow anyone other than your own forces into the perimeter.
- Concealment in tents does not provide cover.

The second dream serves as a reset of the battlefield. With a fresh complement of forces

at his disposal, the lieutenant incorporates previous lessons. He begins defensive preparations immediately, keeps locals out, properly prepares sentries, and ensures his men can fit into the entrenchments to defend against enemy fires. The enemy eventually attacks, and Lieutenant BF's unit is again overrun. However, the lieutenant reviews what happened and identifies lessons learned to be applied at the third iteration.

The series of dreams ends after six cycles, each building on previous events. Throughout the novella concepts such as defense against heavy weaponry, operational security, management of the local population, seizing the initiative, and many others are identified by the lieutenant. Every learning point is incorporated in the following defensive plan, and on the sixth dream the British defense succeeds. Despite this story being over one hundred years old, *The Defence of Duffer's Drift* remains relevant to modern battlefields.<sup>7</sup> The iterative nature of the narrative structure combined with an almost scientific approach to testing and validation proves its value as an educational tool and timeless classic for any maneuver warfare officer. Moreover, the lessons included in *Duffer's Drift* are not limited to educating infantry professionals. Concepts such as placement of forces, operational security, involvement of local populations and more are facets of warfare that apply to every career field, even space professionals.

## VALIDITY IN THE SPACE DOMAIN

The U.S. Department of Defense (DoD) conceptualizes battlespace in a variety of domains. The traditional realms of land, air,

<sup>5</sup> Melissa and Michelle Tusan, "Fault Lines of Loyalty: Kipling's Boer War Conflict/War and the Victorians: Response," *Victorian Studies* 58, no. 2 (Winter, 2016): 314-31.

<sup>6</sup> Swinton, Ernest, "The Defence of Duffer's Drift," Department of Defense FMFRP 12-33, 1989. First published 1904.

<sup>7</sup> Merritt, Braden, "Modern Relevance of the *Defence of Duffer's Drift*," United States Naval Institute. *Proceedings* 132, no. 8 (08, 2006): 64-5.

and sea are the most widely known. These domains are not intended to be examined independently, but rather collectively to understand interdependencies during conflict. Recently, the domains of cyber and space were added to reinforce their importance to modern military operations.<sup>8</sup>

The space domain is highly technical and can be intimidating to the uninitiated. Space operations involve orbital mechanics, communication linkages, relay sites on the ground, and airborne assets.<sup>9</sup> Space operations are replete with the latest technology, but they are not necessarily unique in tactics and strategy. At high levels, space operations succeed in the same manner as any other military force. They must ensure mission readiness while maintaining survivability. Maneuver forces use the term, 'shoot, move, communicate' as a sort of mantra when operating in a battlespace. Space assets are no different. Space focused units must be able to ensure each asset can accomplish its designed mission (shoot), reposition for the next objective (move), and synchronize actions to reinforce unity of effort (communicate). The ways and means that space focused units accomplish this are varied due to the exoatmospheric nature of the mission, but fundamentals are the same.

Although Swinton focused his teaching points on tactical/operational concepts such as fields of fire, points of domination, and unity of effort, a wider examination reveals valuable insights into educating space professionals. Collectively, the lessons in *Duffer's Drift* can be cataloged into three overarching themes applicable to space operations: initiative,

operational security, and battlefield positioning. Analyzing each of these themes through the lens of space operations shows how Swinton's novella applies to the space domain and reinforces its value to today's space professionals.

#### *Initiative*

Initiative is critical for land operations. In *Duffer's Drift*, this is addressed in two ways. First, the lieutenant delays preparing defenses until the next morning. This decision results in lost time, effort, and opportunity toward establishing a foothold along the river. The result for the British forces is disastrous due to ill preparedness. Although space operations do not involve construction of parapets, they do necessitate defensive protections against an adversary.<sup>10</sup> From a strategic perspective the lesson of initiative (while on the defensive) manifests in assessing enemy capabilities and including countermeasures during the satellite design phase. To support this, coordination between research and development (R&D) professionals and the intelligence community can ensure appropriate threat mitigation capabilities are included in new space assets.<sup>11</sup> For the space community, seizing the initiative means investing in early stages of the R&D cycle, so officers never have to wait until after experiencing catastrophe to develop new countermeasures.

A second example comes later in the story when the lieutenant and his men fail to exploit an opportunity to strike first. The enemy is at first unaware of British positions, and an initial volley of rifle fire could turn the battle in the defenders' favor. Yet, the lieutenant

<sup>8</sup> Behling, Thomas G., "Ensuring a Stable Space Domain for the 21st Century," *Joint Force Quarterly* no. 47 (Fourth, 2007): 105-8.

<sup>9</sup> Department of Defense, JP 3-14 Space Operations, Washington, D.C., April 2018.

<sup>10</sup> Hamre, John, "Challenges We Face in the National Security Space Domain," *Hampton Roads International Security Quarterly* (Feb 19, 2017): 14.

<sup>11</sup> Sharma, Surinder Paul, "U.S. Government Program Managers' Competencies to Manage Satellite Acquisition Programs," Order No. 10603364, Northcentral University, 2017.

does not give the order. An opportunity to seize the initiative is lost, and disaster ensues. While U.S. space assets are not yet equipped with strike capability, a linkage to the lesson on initial fires still applies: allocating satellites at the earliest point of sufficient information.

Space capabilities are primarily an enabling function for other domains. Whether providing positioning/navigation/timing services, relaying critical communications, remote sensing, or other functions, satellites require a great deal of planning and coordination.<sup>12</sup> The lesson from *Duffer's Drift*, then, is to identify and prepare assets at the earliest possible point of oncoming conflict. By rapidly taking action, the space community can ensure appropriate platforms are available when needed, enabling those first, highly effective, initial fires from other domains.

#### *Operational Security*

A clear example from *Duffer's Drift* of an operational security lesson involves a local trader. The trader seeks an opportunity to sell his wares to the British soldiers. The lieutenant not only allows this man to trade, but he lets him bring his items into camp. It is only when this dream series is complete that the lieutenant realizes his mistake. The trader has reported the location of the camp, its internal defenses, strength of the British compliment, weapons available, and other forms of valuable information to the enemy commander. Undetected, the lieutenant let a spy into camp. The lesson here is one which applies not only to space operations, but to any field or industry, be wary of who, regardless of uniform, has access to sensitive information.

Space operations dazzle with high technology satellites and large launch vehicles, but the central node of any organization is always people. Monitoring who has access to sensitive sites and plans is a requirement for any leader. Swinton's lesson for space professionals can be expanded to include network access, information sharing, operations planning, asset capabilities, and much more. This is especially important in today's globalized society. Meeting the multitude of threats across the globe requires partnership and cooperation.<sup>13</sup> It is imperative to balance the good faith effort of cooperating with multinational coalitions against the priority of ensuring security protocols for protecting space capabilities.

#### *Battlefield Positioning*

The story of *Duffer's Drift* is a defensive one. The lieutenant is charged to *defend* terrain with a small force against a potentially larger enemy. Tactics in this type of operation are different from an assault or raid. Solid defense relies on being able to withstand overwhelming firepower. In each dream from the story—except the last—British forces, despite their previous training, succumb to enemy violence. Many of the lessons in Swinton's tale, then, focus on how to defend properly and ensure that each soldier is best able to survive the fight. In the story, ultimate success is accomplished through optimal positioning of forces. Terrain dictates much of the defense, and issues such as dead space in fields of fire, proximity to enemy front lines, and spacing of men are all examined in detail.

Of particular relevance to space operations is a lesson addressing flanking. In the story, the lieutenant and his men lose control of the battle. The enemy maneuvers forces to the

<sup>12</sup> Goirigolzarri, Benjamin L., "A Need for Speed? Identifying the Effects of Space Acquisition Timelines on Space Deterrence and Conflict Outcomes," Order No. 27541013, Pardee RAND Graduate School, 2019.

<sup>13</sup> Moller, Sara Bjerg, "Fighting Friends: Institutional Cooperation and Military Effectiveness in Multinational War," Order No. 10099567, Columbia University, 2016.

flanks of British defenses. Chaos ensues as the lieutenant's men receive hostile fire from multiple angles. Lack of protection on the flanks along with inadequate planning for that scenario results in yet another massacre at the hands of the enemy. Once again, the lieutenant is forced to analyze in detail how he failed. Protecting a flank is, of course, a basic consideration for any ground officer. Maritime and air components are concerned about this threat as well. Space is no different.

Although space is big, it is also, in terms of competitive interactions, crowded. There are multiple actors, both government and private, operating in space.<sup>14</sup> There is an obvious terrestrial threat from ground-launched antisatellite weapon systems, but that is not the only front. In fact, where orbital assets are concerned, the "front," and by implication vulnerable flanks, are everywhere. Space professionals should keep this lesson in mind when planning operations. Kinetic attacks from the planet are not the only way to defeat an orbital asset. Attacks can come from the digital realm in the form of cyber. Laser technology has developed and diffused rapidly, and as a result it can interfere with satellite operations from multiple directions. Jamming signals along an entire spectrum are another threat from either ground or space-based assets.<sup>15</sup> The architecture of space operations is expanding so fast that every conceivable attack vector can be considered a satellite or constellation "flank."

### AN OVERARCHING LESSON

Tucked between the pages of Swinton's novella are additional lessons for use in professional development. Each is clearly explained after the dream sequence and incorporated into the next defense. In

addition, *Duffer's Drift* provides *general* guidance that is less explicit. These lessons and guides apply to every field regardless of service and can be incorporated in every leader's approach.

The novella, for example, implies the lieutenant is fresh out of military education and training. He is depicted as determined to use his recently acquired knowledge to the fullest extent possible. Yet, it is clear the lieutenant is flummoxed when his training does not provide direct, formulaic solutions for his mission. To reinforce the idea, Swinton includes this quote, "*Now if they had given me a job like fighting the Battle of Waterloo...or Bull Run, I knew all about that, as I had crammed it up....*"

Although critical for the narrative and used to underscore the lieutenant's irritation in the moment, there are deeper lessons to be drawn. First, knowing military history and gaming the intricacies of simulated battles does not guarantee success. Studying a variety of tactical, operational, and strategic actions in any battle scenario helps tell that conflict's story; however, those solutions are guaranteed only to those battles. Each war has its unique aspects, variables, and constraints, limiting the reach of military science. The lesson Swinton is explaining with this quote is to work the problem of the current fight, recognizing it has its own set of variables, not just fresh parameters in the same old formula. It is still important to appreciate the historical record or summary statistics from thousands of simulation runs, but these can never be useful unless officers retain their skepticism: at some point the record will fall short since it cannot emulate actual fighting conditions.

<sup>14</sup> Morin, Jamie, "Four Steps to Global Management of Space Traffic," *Nature* 567, no. 7746 (Mar 07, 2019): 25-7.

<sup>15</sup> Johnson-Freese, Joan, *Space Warfare in the 21st Century: Arming the Heavens*, Taylor & Francis Group, 2016.

The lesson is especially important for today's fledgling space community. The U.S. Space Force is [*sic*] shy of its first birthday, but it claims mature strategic importance with direct representation on the Joint Chiefs of Staff.<sup>16</sup> Its presence on this august council emphasizes the growing role of space capabilities in U.S. strategic thinking. Prior to the creation of USSF, space activities were dispersed throughout the services. Each branch of the military held its own space interests and operations.<sup>17</sup> The U.S. Air Force (USAF) was the largest contingent with a variety of units and roles related to space falling under its mission. As such, the military space community, always a joint venture, was nonetheless dominated by USAF operations and culture.

Naturally, USSF will bring much of this culture and business process to its new service, which remains within the Department of the Air Force. However, the independent JCS seat signals USSF will not be a simple extension of the Air Force.<sup>18</sup> Space Force faces qualitatively new challenges and will be compelled to develop its own approaches to frame and solve these military problems. The deep well of USAF business practices combined with collective experience of the partner services will support USSF as it evolves. Still, it is crucial for this new organization to balance legacy processes with tailored solutions in the midst of unrelenting operations tempo.

The pensive lieutenant facing a novel challenge at *Duffer's Drift*, through his dreaming (that can be read as gaming) applied his imagination to expand his real-life chronological hours for iteration and refinement of traditional tactics. Likewise, USSF relative to older branches ought to leave its door unusually open to investment in the demanding legwork of testing new ideas and radical concepts even as it professionalizes the service.

In the years since Swinton's story was published, a great many aspects of warfare have changed, of course. Weapons are deadlier. Communication has increased in speed and volume. Points on the globe are closer due to faster means of transportation. Access to space for the United States has become a routine expectation. These advances obscure but do not undermine the validity of Swinton's lessons. If anything, they make them more urgent. Space is not yet weaponized, but it must be considered in the context of military operations, subject to analysis through the lens of geopolitical conflict. Swinton's classic story of a young lieutenant faced with a complex, evolving mission can serve as a contemporary tool for space professionals, an early guide to how they can defend this critical domain.

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<sup>16</sup> Opening Statement by Ranking Member Reed at SASC Hearing to Hear Proposal to Establish a United States Space Force, Washington: Federal Information & News Dispatch, LLC, 2019.

<sup>17</sup> Tyler, Coley D., "Demystifying Space: How to Perform Better in the Space Domain," *Infantry* (Online) 107, no. 4 (Oct. 2018): 16-9.

<sup>18</sup> Opening Statement by Ranking Member Reed at SASC Hearing to Hear Proposal to Establish a United States Space Force, Washington: Federal Information & News Dispatch, LLC, 2019.