

Innovating at the Division Level – Effective Processes and TTPs

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“There was a little sergeant. His name was Culin, and he had an idea. And his idea was that we could fasten knives, great big steel knives, in front of these tanks, and as they came along they would cut off these banks right at ground level...and this idea was brought to the captain, to the major, to the colonel, and it got high enough that somebody did something about it—and that was General Bradley—and he did it very quickly...the biggest and happiest group I suppose in all the Allied Armies that night were those that knew that this thing worked. And it worked beautifully.”

- President Dwight D. Eisenhower, January 10, 1961
remarks upon receiving the Hoover Medal.¹

Introduction

In September 2023, a team from the Center for Army Lessons Learned (CALL) traveled to Fort Liberty, NC, to meet with leadership and key personnel from the 82nd Airborne Division and XVIII Airborne Corps to gain insight into the ongoing innovation efforts within these organizations. Specifically, the CALL team sought to determine how these units generate, validate, and implement innovative ideas and tactics, techniques, and procedures (TTPs). The purpose of this article is to highlight the key observations and insights from this engagement to share effective TTPs and challenges regarding innovation at the corps and division levels with the broader Army.

Trip Summary

During the visit, the CALL team met with the 82nd Airborne Division Transformation Cell, personnel from the Airborne Innovation Lab, and the XVIII Airborne Corps Innovation Officer. The 82nd Airborne Division Transformation Cell provided the CALL team with a detailed overview of the processes, systems, personnel, authorities, funding, and challenges associated with executing innovation at the division level. The XVIII Airborne Corps Innovation Officer provided a similar briefing regarding the Corps' role in executing and overseeing innovation initiatives. Additionally, the 82nd's Gainey Company leaders provided the CALL team a briefing and tour of its Airborne Innovation Lab. Gainey Company is a unique organization within the 82nd Airborne Division that is tasked with operating the Airborne Innovation Lab, training division Soldiers on new equipment, and developing, testing, producing, and implementing emerging innovation concepts.

Key Takeaways

Throughout its history, the U.S. Army and its Soldiers have found innovative solutions to difficult problems. Often, the most creative ideas have emerged from the lowest levels of the Army hierarchy – whether those solutions entailed building a new piece of equipment, re-purposing an existing piece of equipment or technology, or developing a more efficient system or process. The “steel knives,” mentioned by President Eisenhower in the quote above and shown in the figure below is a great example of American Soldier ingenuity put into action.²



Figure 1. Allied “Rhino Tank” with steel tusks/bocage cutting device attached and a cleared path through a bocage hedgerow in France during World War II.³

The idea of innovating, whether at home station or in combat, is not new; however, the structure and processes in use to encourage innovation at Fort Liberty is new. The XVIII Airborne Corps and 82nd Airborne Division implemented an innovation program that is both “top-down” driven and “bottom-up” executed. This ensures authority and oversight at the senior leader levels and empowerment at the junior Soldier levels.

Aided by commanding general emphasis, subordinate units are generating ideas to solve problems germane to the 82nd Airborne Division (primarily, individuals are encouraged to solve problems unique to the joint forcible entry mission set). Additionally, the command developed a system that encourages and enables Soldiers to identify problems and recommend solutions; it also empowers any Soldier with a feasible idea to work with the Division Transformation Cell and Gainey Company to “own” his/her idea from start to finish.

Gainey Company is named after CSM (retired) William J. Gainey. Gainey was the first Senior Enlisted Advisor to the Chairman of the Joint Chiefs of Staff (SEAC) and a paratrooper from the 82nd Airborne Division. The SEAC was created to advise the Chairman on matters of professional development of enlisted personnel in a joint environment. Gainey Company represents and models CSM Gainey’s innovation, endeavors, and motivation to lead from the front that is embodied by the Paratrooper.⁴

The XVIII Airborne Corps facilitated its other subordinate divisions (101st Airborne, 10th Mountain, and 3rd Infantry Divisions) to establish their own innovation labs. The Corps recognizes that each Division orients its innovation efforts toward solving problems unique to its primary mission set and/or area of responsibility. The corps’ primary role is to serve as the overall facilitator and coordinator of its subordinate units’ innovation efforts. It provides oversight of ongoing projects and can reach out to a broader network of Program Executive Offices (PEOs) and contacts within industry and academia.

The 82nd Airborne Division uses its Innovation Drop Zone Competition as the primary method to solicit innovative ideas. This competition is held on a semi-annual basis, at division-level, and subordinate units are tasked to participate. Each brigade must submit its top three innovation ideas for review in a “Shark Tank” style forum. Prior to the competition, division Paratroopers can scan a Quick Response (QR) code to upload their proposed idea.

The Division Transformation Cell monitors the repository of ideas and ongoing projects and retains those projects deemed feasible. Battalion and Brigade leaders select their top three innovation ideas from this QR code pool of initiatives, then the Division Innovation Team selects the top six finalists. The selected Paratroopers move on to the final stage and present their projects to the 82nd Airborne Division leadership at the Innovation Drop Zone Competition. The winning Paratrooper spends the next three to six months working with the Division Transformation Cell and Gainey Company to develop, produce, and implement their idea. Army divisions with active innovation programs can point to numerous examples of ideas developed by Soldiers that have enhanced the unit’s readiness and/or effectiveness: a Soldier in the 3rd Infantry Division designed an Internet of Things (IoT) Mold Sensor and website to provide real-time monitoring of dangerous mold in barracks rooms; a team in the 101st Airborne Division designed an improved backpack to reduce tripod deployment time for crew-served

machine gun teams; a Warrant Officer in the 82nd Airborne Division invented a reusable form of blocking and bracing to save money and time when conducting outload operations; a MEDEVAC pilot in the 25th Infantry Division designed a computer-vision sensor that monitors flight instruments and recreates a computer model of the flight so pilots can receive better feedback on their performance.



Figure 2. 82nd Airborne Division flyer instructing Soldiers how to submit innovative solutions using a QR code.⁵

The 82nd Airborne Division and the XVIII Airborne Corps also take a deliberate approach toward managing the personnel assigned to key innovation-related billets. Subordinate brigades within the 82nd Airborne Division are tasked to provide personnel on a rotational basis to serve in the Division Transformation Cell and Gainey. The leadership of these two organizations interviews the candidates and selects personnel based on their unique experience, background, and skills. For example, a Soldier who has a penchant for computer coding or three-dimensional (3D) printing is more likely to get selected to serve in one of these billets, as opposed to a Soldier who lacks the interest or aptitude to do the job. Anecdotally, innovation officers at various divisions can cite numerous examples of Soldiers who have the desire and the skills required to serve in innovation-related billets, but cannot due to manning constraints. Personnel management is a challenge for any unit that maintains an innovation program, which will be addressed in more detail below.

Challenges

The CALL team identified funding and personnel as the two most significant barriers to innovation-related initiatives.

- **Funding:** Currently, the Army does not allocate funds specifically for innovation or research and development at the corps or division level. In the XVIII Airborne Corps, all funding for lab equipment and materials comes from the Army Research Laboratory's (ARL) Catalyst Pathfinder program. The Catalyst-Pathfinder program is open to any Army unit that is interested; however, the unit must provide a cadre of innovation officers to manage the program. ARL funding will cover the cost of prototyping and testing, but these funds are limited and cannot be used to produce large quantities of approved items. At present, units that decide to scale a solution beyond the prototype phase must use their operations and maintenance (O&M) budget to fund an idea that is selected for further research and development. Since O&M funds are largely "zero-sum," it can be problematic for commanders to prioritize between current readiness and ongoing innovation efforts.
- **Personnel:** While the 82nd Airborne Division and XVIII Airborne Corps are selective in assigning personnel to innovation-related positions, very few officially documented billets exist. The Division Transformation Cell has no Modified Table of Organization and Equipment (MTOE) or Table of Distribution and Allowance (TDA) billets, so all personnel serving in this organization are considered "standard excess" or Borrowed Military Manpower (BMM). The most significant impact to units in only using excess personnel is when a Soldier holds a low-density MOS but also happens to be a highly capable innovator. In this case, the command must make a choice whether to hold a vacancy for a scarce MOS so the individual can conduct innovation-related duties. Additionally, current Army manning policies make it difficult for units to identify rank and MOS immaterial positions and staff them accordingly with the appropriate and available personnel within their formations.

Gainey Company has a provisional Unit Identification Code (UIC), which means it maintains limited template positions, but the positions are not considered key and developmental (KD) positions in accordance with the Army professional development model. For these reasons, talent management, particularly managing individuals' career timelines, is a challenge. Most personnel serving in these positions are post-KD or at a point in their career timeline that serving in an innovation billet is not detrimental to their continued career advancement.

The subject matter experts (SMEs) at Fort Liberty also highlighted certain practices in use by our sister services that are currently lacking in the Army. For example, in September 2016, the Marine Corps Commandant issued a service-wide interim policy regarding additive manufacturing (also known as 3D printing).⁶ While this policy letter has since been rescinded, it is noteworthy that the Marine Corps identified the need to place senior leader emphasis on, and provide guidance for, cutting edge technology that is meant to streamline the process of acquiring replacement parts for certain items.

The Air Force's online platform—Vision—is an internet-based repository allowing any innovation officer in the Air Force to upload an innovative idea or track the progress of existing ideas.⁷ A similar platform does not exist in the Army; however, such a product would enable the cross-pollination of ideas across the Department of Defense, integrate external stakeholders, and would also prevent duplication of efforts. Finally, the Air Force allocates "Squadron Innovation Funds" to support unit-level innovation activities. As mentioned above, there are no Army level funds specifically for innovation; therefore, units rely on O&M budgets to support tactical innovation, which forces commanders to prioritize between current readiness and innovation projects that carry the risk of an unknown return on the investment. The Air Force's Squadron Innovation Funds exist to explicitly address this gap.

Conclusion

The 82nd Airborne Division and XVIII Airborne Corps built an effective system to enable innovation and encourage initiative. Due to emphasis at the commanding general level, subordinate units are encouraged and empowered to harness the collective brainpower within their formations to solve problems via the division Innovation Drop Zone Competition. The 82nd Airborne Division's innovation mechanisms are effective tools that other divisions across the Army should consider duplicating.

There are some DOTMLPF-P implications regarding innovation efforts at corps and division levels that the Army should consider in more depth. For example, an Army-wide study regarding the utility and feasibility of developing an Additional Skill Identifier (ASI) for innovation could be beneficial, to protect and incentivize career progression. A determination regarding whether and how many MTOE and TDA innovation personnel to add at corps or division staff is worth further analysis. Finally, senior leaders should consider materiel solutions at each division, to include funding for innovation labs, as well as separate appropriations specifically for research and development.

Ultimately, formalizing, and empowering corps and division innovation efforts is a worthwhile endeavor that should be replicated across the Army. However, the key to success for any tactical level innovation program is a culture of collaboration between the operational force and the institutional force (organizations such as Program Executive Office – Soldier (PEO-S), ARL, Army Capabilities Development Command (DEVCOM), academia, etc.) Currently, the XVIII Airborne Corps, DEVCOM, and USASOC conduct significant idea sharing, which is a best practice. While the Army approach to modernization tends to be “one size fits all” and is geared towards larger programs such as airframes and large weapons systems, there will always be a need for tactical formations to conduct incremental innovation and solve problems that do not rise to the level of becoming a program of record but are detrimental enough to cause operational degradation. At present, there is no single proponent within the Army to encourage bottom-up driven ideas; innovation officers at the tactical units and passionate individuals within the institutional Army working together are the driving force to ensure lasting change. Army leaders should seek out effective ways to enable this type of innovation within their units.

ENDNOTES:

¹ Dwight D. Eisenhower. Remarks Upon Receiving the Hoover Medal Award Online by Gerhard Peters and John T. Woolley. The American Presidency Project <<https://www.presidency.ucsb.edu/node/234793>>

² “Rhino Tank”. Encyclopedia. Science News & Research Reviews. <https://academic-accelerator.com/encyclopedia/rhino-tank>.

³ Ibid.

⁴ SPC Lilliana Magoon. “Gainey Company Uncases Colors, Paves the Way for Innovation.” U.S. Army. [Gainey Company uncases colors, paves the way for innovation | Article | The United States Army](#)

⁵ 82nd Airborne Division Public Affairs Team. Print and Digital. 17 August 2023.

⁶ Interim Policy on Additive Manufacturing (3D Printing) in the Marine Corps. 16 September 2016 <<https://www.marines.mil/News/Messages/Messages-Display/Article/946720/interim-policy-on-the-use-of-additive-manufacturing-3d-printing-in-the-marine-c/>>

⁷ <<https://www.mobilizevision.com>>

