Direct Commission for Cyberspace Specialties

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ABSTRACT

The US Army executes small-scale direct commission programs for specialties needed within the profession of arms. When expanded into Cyberspace, similar programs can provide an opportunity to enhance readiness and capability while building toward a force of the future. A Cyberspace direct commission program can serve as a test case for removing the traditional bar to lateral entry for technical specialties. Challenges relating to culture, development, and operations may arise during implementation of such a program. This paper hopes to start the initial discussion on these topics and introduce ideas about future research that can contribute to the Army's assessment of a direct commission program.

INTRODUCTION

During World War II, the Allies adopted a new approach to operational decision making by creating Operations Analysis. During that period, America and its allies felt an exceptional call to service, and 12% of Americans served in the military.[1] The Army employed expert "civilians in uniform" that provided insight to operational questions and weapons performance using mathematical and statistical techniques.[2] This new approach to operational decision making produced a new discipline. During later conflicts like Vietnam, the Army grew the analytical community to tackle new challenges.[3] The Operation Research/System Analysis functional area exists to this day; although, current officers only transfer into the discipline from other branches within Army.

On the last day of 2016, the Department of Defense's (DoD) active duty military and civilian workforce totaled 2,052,573.[4] On the same day, the Census Bureau estimated the population of the United States to be 324,304,407,[5] meaning that 0.6% of Americans served the military in either a uniformed or civilian capacity. Currently, a limited number of Americans answer the call to military service; however, the Nation increasingly

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faces a number of threats in Cyberspace. While the Army has actively responded to this changing landscape by standing up units, occupational specialties, educational programs, and the Cyber branch itself, now is the best time to explore all options.

A direct commission program for civilian experts in the Cyberspace domain provides an additional opportunity to enhance readiness and capability while building toward a force of the future. Just as the conflict of World War II drove the need to employ "civilians in uniform" and develop Operations Analysis as a discipline, challenges in the Cyberspace domain may require the Army to draw on civilian experts to solve technological problems. Throughout the Nation, an ecosystem already exists, traversing academia and industry, that creates expert professionals through a combination of classroom and on-the-job experiences. A direct commission program can leverage this unique American resource. Waiting to establish such a program until a time of national crisis lacks foresight. Previous direct commission programs for technical experts were enacted during a time of national service through the military draft. A new process should be entertained for our all-volunteer Army.

THE PROFESSION OF ARMS

Individuals entering into military service also enter into the profession of arms. The Center for the Army Profession and Ethic has defined the Army profession as a "unique vocation of experts certified in the design, generation, support, and ethical application of landpower serving under civilian authority and entrusted to defend the Constitution and the rights and interests of the American people." [6] This definition does not limit initial service to junior level positions, and yet the Soldier is traditionally viewed as a profession with a bar to lateral entry, without regard to experience or expertise.

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As Samuel Huntington argues in The Soldier and the State, mastery of military officership requires professionalism on par with an attorney or doctor. [7] Unlike the professions of law or medicine, a single employer, the DoD, holds a monopoly on the indoctrination into and employment of individuals in the profession of arms. When combined with a bar to lateral entry, this creates a closed personnel system, which requires the need to grow nearly all uniformed technical experts and senior leaders from within the DoD itself. [8] Given the competitive job market surrounding Cyberspace and other IT specialties, this traditional closed system may prove inadequate to sustain the best talent. Now is the time to reconsider this system and potentially remove the bar to lateral entry for a variety of specialties.

A lateral entry exists only in a small subset of the Army, primarily in the medical field. It is accepted that a direct commission applicant specializing in medicine already participates in a profession with standards, self-regulation, and state licensing. Upon entry into the Army, the medical officer does not step away from these artifacts of their professional culture. Instead, the direct commission officer takes on an additional profession, the profession of arms. The Army has accepted that the general skills applied to medicine in civilian hospitals traverse the civil-military divide and provide similar benefit in military hospitals.

Secretary Ashton Carter, the U.S. Secretary of Defense from February 2015 to January 2017, [9] believed that the DoD should broaden opportunities of service for all Americans. While the Army profession normally requires Soldiers to enter at the most junior levels, Secretary Carter suggested a permeable force which would allow for the capture of experiences and patriotism from a variety of Americans at varying stages of their professional

development. He envisioned a force of the future in which lateral entry was possible for professionals in and out of uniform to serve at the junior, mid-career, and senior levels in both the active duty and reserve forces. A direct commission pilot program for specialties in Cyberspace can serve as a test case for Secretary Carter's vision. Outcomes observed and lessons learned might someday contribute to creating direct commission programs in other professional areas as well.

> Throughout the Nation, an ecosystem already exists that creates expert professionals through a combination of classroom and on-the-job experiences.

The bedrock of service as an officer consists of taking responsibility for victory and defeat, readiness and unpreparedness, success and failure.[10] The Soldier and the State described the nature of officer work as the "management of violence".[11] Huntington chose to stress the word management for good reason, and the role of an officer includes managing operations and leading enlisted Soldiers. The junior enlisted demographic draws some of the best younger adults the Nation has to offer. These enlisted Soldiers swear an oath to obey the orders of officers appointed over them. But in a reciprocal manner, this places just as much burden on the officer corps, as the professional officer must acknowledge and honor the responsibility to lead those that have pledged to follow while promoting their safety, welfare, and development. This creates a clear distinction between the nature of officer work and that of a hired Army civilian.

This nature of officer work surely varies among the different branches of the Army—making some branches more fertile ground in accepting direct commission officers. Regardless of the branch, key cultural, developmental, and operational challenges might arise during implementation of direct commission programs. Injecting direct commission officers into a workforce where none previously existed will likely change notions of workforce equity, leader development, and standard onboarding processes. Leaders will face new challenges in articulating requirements at the individual expert level. These changes could alter our existing promotion selection process and impact future career climates.

The new policies required to enact a direct commission program, implement a reduced onboarding process, and place new employees in expert work roles will alter how a traditional officer views his or her own place within the branch. As two organizational behavior academics, Douglas Hall and Jeffrey Yip, state, "Organizations are constantly transmitting social information about careers, which are then interpreted by employees. In most instances, organizations send mixed career signals to their employees, and this

has an effect of weakening an organization's career climate and ultimately its culture." [12] The Army needs a functioning Cyber branch with a solid career culture and climate. To ensure success, we hope to begin the discussion on these topics while offering some initial considerations.

WHERE CYBER STANDS

The Cyber community has already acknowledged the idea that acquiring and developing the talent required for Cyberspace operations may come from nontraditional sources or by nontraditional means. This creates a notable difference between technical talent in Cyberspace and the other warfighting domains. The institutions that best develop the skills required for landpower combat lie within the Army's closed personnel system itself; whereas the skills required of a Cybersecurity leader or technician can be developed both in and out of uniform. This idea has already found its way into law, and soon it will take hold in a pilot program for the Army.

The 2017 National Defense Authorization Act included a provision that allowed a pilot program for the direct commission of officers for Cyberspace specialties. [13] The Army took on the responsibility of piloting their direct commission program as of January 30th, 2017. In February, Brigadier General J.P. McGee, Army Cyber Command's Deputy Commander for Operations, acknowledged the continual need to close capability gaps. He stated, "Cyber

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space threats and challenges are only continuing to increase, and we're continually trying to keep pace with our defensive measures." [14]

In March 2017, the Army G1 developed an operational planning team to develop the details of this new direct commission pilot program. During this initial planning, the Cyber community will need to take steps to develop requirements within Cyberspace workforce structures. Also, the community will need to develop methods for assessing traditional versus nontraditional talent from various sources. Breaking ground on this pilot program offers a path for initial direct commissions and raises several potential research questions, as discussed in subsequent sections.

OPPORTUNITIES FOR SERVICE

We aim to offer considerations for the direct commission program and to begin the discussion on how this program might impact the employment, retention, and career culture of officers in the Cyber branch. It is important that the Cyber community proceeds with the direct commissioning of officers in a deliberate and well-planned approach.

Direct commission officer candidates must have a consistent and demonstrable expertise, a sense of patriotism, and appropriate skills for the Army. A combination of these attributes should positively impact operations, help the Cyber branch determine its nature of work, and support a positive career climate as seen by branch's junior officers. Creating such a peacetime lateral entry system prepares for potential growth of the Army's Cyber workforce.

By implementing a direct commission program, the Army will look outside the traditional boundaries to allow a broader pool of applicants to fill jobs in the Cyber workforce. It is important to note that an array of opportunities already exist for potential applicants. Current work roles roughly equate to the following civilian-friendly titles: security analyst, exploitation analyst, penetration tester, planner, operations manager, and developer. The table below illustrates how the direct commission program fits into the opportunities already available for those who would like to serve.

Type of Service	Work Role	Work Level	Initial Training in Months	College Requirement	Annual Pay in Maryland Area
Junior Enlisted	Security Analyst, Exploitation Analyst	Entry-Level Worker	12	No College	$53K, after 4 Years of Service
Warrant Officer	Penetration Tester	Skilled Technician	Lateral Entry Not Authorized	Some College	$82K, varies with Time in Service
Entry-Level Officer (Staring at O-1)	Planner, Manager, Developer	Entry-Level Leader	14	Bachelor's Degree	$78K, after 2 Years in Service
Direct Commission (O-3 start assumed)	Planner, Manager, Developer	Leader or Expert	3	Bachelor's Degree	$95K, after 2 Years in Service
Army Civilian	Planner, Manager, Developer	Leader or Expert	Not Significant	Position Dependent	$44K - $131K, Grade Dependent
Highly Qualified Expert	Miscellaneous	Expert	Not Significant	Position Dependent	May not exceed salary of VP

Table 1. Summary of Cyber Workforce: An Array of Opportunities

This table summarizes our earlier work published in *The Cyber Defense Review* online. [15] The pay figures included in the table offer a very rough generalization of expected annual salaries for various types of service and work roles. These figures include allowances for subsistence and housing in the Maryland area. Also of note, junior enlisted Soldiers receive advanced training and gain skills more traditionally acquired from higher education. One could consider the training that these Soldiers receive as a form of compensation itself.

The direct commission program creates an additional option for serving in the Army's Cyber workforce, and the remainder of this paper will focus on this opportunity. As illustrated in the above table, direct commissioning offers a shorter initial training program than that for entry-level officers. This reduced onboarding is possible because a directly commissioned officer would bypass the traditional path for civilians to become an officer. This path normally consists of Basic Combat Training, Officer Candidate School, and the Basic Officer Leader Course and lasts longer than one year in duration.

This lengthy process remains insufficient to commission officers that can quickly begin work on the biggest challenges facing the Cyber workforce. A direct commission program provides the Army the ability to quickly onboard a professional, similar to the process of hiring a civilian. Direct commission officers could start at a pay grade commensurate with their civilian experience, skill, and education level. For this reason, the above table uses an officer in the grade of 0-3 to estimate the direct commission salary figure. While a direct commission program offers similar

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benefits to a direct civilian hire process, the role of a commission officer is distinct from that of an Army civilian within the profession of arms, as discussed in previous sections.

The DoD has another recent example of injecting talent into its technical workforce. The Defense Digital Service (DDS) has seen success through an effort to direct hire civilians to team with military members to tackle tough problems relating to defense technologies, information sharing, and collaboration. [16] Upon creating DDS in 2015, Secretary Carter conveyed the usefulness of bringing unique talents from outside the department's bureaucracy to harness agile approaches to complex problems. He stated that we could benefit from innovative entrepreneurs "who will work with senior leaders on some of our most challenging projects for two years at a time." [17]

Like DDS, the creation of a direct commission program does not declare that current Cyber officers lack expertise in the Cyberspace domain; rather, the program simply allows

for the injection of new life blood and diversity of thought into the Cyber branch, similar to a "training with industry" program in reverse. As a result, an exchange of talent across civilian-military lines should promote the practice of striving for new and unique ways to solve challenging problems throughout the entire branch. In addition, the Cyber branch might also consider more permeable forms of employment that would allow for easier transitions from reserve to active service, if the talent sought by the active component can be filled by a member of the Reserve Component or National Guard workforce.

During the creation and execution of a direct commission program, the Army must consider challenges pertaining to onboarding practices and career culture artifacts. In the following sections, we highlight some of these aspects to such a program.

CURRENT DIRECT COMMISSION PRACTICES

In specialty branches, the Army has existing practices in which professionals directly commission as officers. These fields include the Medical Corps, Judge Advocate General's Corps, and Army Chaplains. Two distinctions are important to note regarding these specialty areas and the Cyber branch. First, these specialty branches do not deliver combat effects to adversaries. These officers serve in support roles; however, the Cyber community may need its direct commission officers to deliver combat effects against adversaries. This drives a need for these officers to understand the law of war and a general sense of military operations. Secondly, direct commission officers in the specialty branches mentioned above normally obtain a state-granted license to practice their profession. Thus, the official vetting of job skills is performed through a third party. Conversely, state licenses to practice software development, penetration testing, or other Cybersecurity work roles are either non-existent or rarely required in the commercial job market. Therefore, the Cyber community must determine a way to evaluate the skill level of direct commission officers.

Coincidently, the Army has another specialty area in which it recruits direct commission officer candidates from a profession that has no state licensing—namely the Army band program. In order to direct commission into the Army band program, a candidate must audition. The act of auditioning establishes a process in which the candidate must execute an observable skill. The Cyber community should develop a similar audition or assessment process to observe and evaluate the demonstrable skills of candidates seeking technical positions. The Cyber community could first consider eligible candidates based on a combination of education, experience, and certification, all signals of quality, but should then observe candidates through a hands-on assessment.

Officers in Army specialty branches typically experience a reduced onboarding process. New Army doctors and nurses attend the Basic Officer Leader Course at Fort Sam Houston. This program ranges from ten to fourteen weeks in duration, depending on medical specialty and prior military service experience.[18] New Army attorneys complete

the Direct Commission Officer Course at Fort Benning and a ten-week familiarization with the Judge Advocate General's Corps. [19] Army band officers also attend an officer basic course. [20]

These specialty branches reduce the onboarding time for new officers because their direct commission programs have already determined that the officer meets the technical criteria for the position. These onboarding courses serve as familiarization with the Army and an induction into the profession of arms. While attorneys, doctors, and chaplains have already established professional identities with skills that traverse the civilian-military divide, an onboarding process is always necessary to properly introduce these professionals to their new additional profession, the profession of arms.

In a rush to direct commission officers with unique talents, the Cyber branch must not short-change the onboarding process for professionals with Cyberspace specialties. The Cyber branch must develop an onboarding program that introduces new officers to the profession of arms. The existing Direct Commission Officer Course at Fort Benning combined with a Cyber planner or Cyber operations course at Fort Gordon would satisfy this need. If planned for efficient execution, this onboarding program could last twelve weeks. In light of this notion, the next section discusses aspects of military requirements that the Army expects of all officers in the profession of arms.

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ARTICULATING THE REQUIREMENT

In branches other than these specialty areas, the Army has two methods of obtaining skillsets: (1) developing recruits or existing Soldiers to required levels, or (2) writing position descriptions and hiring Army civilians. Direct commissioning an officer creates a unique third method. Before the Army considers a position for direct commission, questions should be answered regarding the two methods listed, namely: (1) can the Army develop an existing Soldier promptly, or (2) could a civilian hire fill the gap?

The first method of developing an existing Soldier is essentially internal talent reallocation. This method often occurs in the Army. The Special Forces branch and the many Army functional areas have defined needs through which the requirement for talent is then understood. Against these talent requirements, the Special Forces branch and the functional areas can develop accurate assessments to narrow down the pool of possible applicants. In the case of the Special Forces branch, the Special Forces Assessment and Selection (SFAS) program forms the basis for this step in the broader talent reallocation process. While

Cyberspace specialties will require new and unique skillsets in a completely different domain, the foundational need to articulate the requirement must precede the development of the selection process itself.

Internal talent reallocation also requires the Army, a traditionally closed system, to develop expertise in-house, a method not popular in industry's talent marketplace. This aspect of talent management endured by the military, makes a direct commission program appear beneficial for niche technical skills. Developing these skillsets through a talent reallocation process might require significant resources. Direct commissioning an officer minimizes this burden, but unlike a civilian hire, creates a Soldier and leader in the profession of arms.

The Army created the Cyber branch to grow maneuver officers in Cyberspace. Cyber officers are expected to direct and lead operations. A direct commission officer may or may not lead a team or command a battalion; however, the direct commission program should not necessarily preclude an officer from leadership if they prove to be the best candidate for the position. To deny the most qualified individual a leadership position based on the officer's commissioning source only reinforces military's closed personnel system and traditional biases regarding leadership that may not hold true in the future.

> The Cyber community can begin to look to industry and other free markets of employment to understand best practices and draw insight from existing empirical data.

Even if a direct commission officer never leads a team or commands a battalion, junior officers, warrant officers, and enlisted Soldiers will still view the direct commission officer as an informal leader with subject matter expertise. This aspect of informal leadership will impact the career culture and climate of the branch. Considering this idea, the following paragraphs highlight some of the considerations for professional knowledge, skills, and abilities that should be considered when direct commission officers fill grades on par with direct and organizational leaders.

All Army officers executing direct level leadership have obtained a four-year college degree. The well-rounded education provided at our Nation's universities ensures that an officer has a diverse educational background accompanied by the reading, writing, and presentation skills necessary to provide well-articulated orders and directives and to brief superiors with meaning and coherence. Regarding this sort of knowledge, direct commission officers should have commensurate understanding similar to that of all other officers. Other knowledge requirements of direct commission officers should be

well-thought out but may include the following: understanding the law of war, our system of military justice, operational security, and joint cyber operations. Officers from traditional commissioning sources grasp this knowledge, and the Basic Officer Leadership Course and Captains Career Course reinforce knowledge in these areas for direct level leaders. Direct commission officers should be no less knowledgeable.

In addition to knowledge, articulating the requirement for direct commission officers also means determining the skills and abilities needed to fills shortfalls in capability and capacity. The Cyber community may very well need to further define the nature of officer work in the Cyberspace domain to acutely define these skills and abilities. One idea of note is that direct commission officers themselves will influence how the future nature of officer work in the Cyber branch is defined, creating an interesting lifecycle as depicted in Figure 1.

Direct commission officers filling grades on a par with operational level leaders also have knowledge requirements that must be considered. The Army

CAPABILITY GAPS

PEOPLE

NATURE OF WORK

HR REQUIREMENTS

Figure 1. People – Nature of Work Lifecycle

expects operational level leaders to know the doctrinal and theoretical concepts to understand military strategy and to manage and plan for change in complex joint and multinational environments. Operational leaders should also understand organizational climates and leadership in a changing world. [21] Traditional officers gain an education in these topics during the Command and General Staff Officers' Course. The Army War College reinforces and expands on these concepts. Direct commission officers that serve in grades on par with operational level leaders should be no less knowledgeable.

As a challenge to these requirements, the Cyber branch must address the non-selection of expert officers at promotion boards. The Army has already passed over Cyber officers with a high level of education in technical fields. Obtaining post-graduate education in a technical field often requires an officer to spend years outside the operational force, thus translating to fewer evaluation reports. This puts the officer at a disadvantage during promotion boards. While other valid reasons to non-select these officers may exist, their non-promotion sends a social cue to Cyber officers that devalues education, especially a technical education. Combined with a direct commission program aimed to onboard
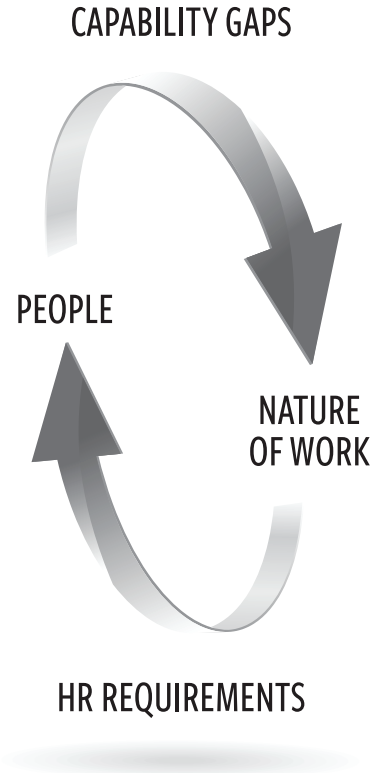
professional and technical experts, this practice would send a conflicting "mixed signal", as illustrated by Hall and Yip. [22] In order to retain fully qualified individuals, the Cyber branch should conduct further research regarding careers and seek to understand the branch's new place within a Cyber-related job market that extends beyond the lines of the military.

> Only through exploring all options to attract the best current and future professionals does the Army maximize its ability to enhance readiness and capability.

FURTHER RESEARCH

Other areas of research may include the impact direct commissions have on aspects of learning versus performance culture, protean and organizational career orientations, and inclusive versus exclusive climates. The Cyber branch should also seek to understand how direct commissions might affect equity in the workplace. Aside from specialty pays, the Army has little difference in pay among officers of the same rank, yet the officer corps functions like a meritocracy. Officers with more perceived skill or value achieve promotions at a higher rate. Further research should consider how an influx of expert talent impacts equity among officers in the branch. In quickly onboarding expert professionals through a direct commission program, the Cyber branch effectively relieves itself of in-depth development for some of its members, relying instead on previously obtained education and job experience. This upsets the talent management paradigm of acquire, develop, employ, and retain. Further research should also be done to understand how this impacts the branch as a whole. For some of this research, the Cyber community can begin to look to industry and other free markets of employment to understand best practices and draw insight from existing empirical data.

A direct commission program may also benefit the future Cyber workforces for the Army Reserve and National Guard. The National Guard has a composition different from the active duty workforce in which Army civilians fill staff authorizations throughout the force structure. The National Guard has no authorizations for civilian positions; hence, the Cyber community must consider how to adjust or translate roles and responsibilities when applied to the National Guard force structure. Just as a path to lateral entry may enable expert professionals to join active duty military service, the Army Reserve and National Guard may additionally benefit from such a program. The Cyber branch should continue to research how a direct commission program might benefit the readiness of the reserve component or National Guard when preparing for responses to crises in the Cyberspace domain.

CONCLUSION

Piloting a direct commission program allows the Cyber branch to create a merit-based system, potentially free of any bias to previous military experience. This promotes Secretary Carter's vision of a permeable form of service capable of allowing skilled and patriotic Americans to serve at any point in life. This program provides another opportunity to leverage the intellectual capacity of the Nation. The Army should also consider that this pilot program can inform future programs for direct commissions in professional areas other than Cyberspace.

As discussed in the previous sections, several aspects related to career culture and the current talent management paradigm could present difficulties for this program at scale. The Cyber community should pursue a small pilot program for this effort and increase the size of the program cautiously as further research is explored. Meanwhile, the Cyber community should continue to promote all options and opportunities for Americans to serve in the Cyber workforce. Only through exploring all options to attract the best current and future professionals does the Army maximize its ability to enhance readiness and capability while building toward the force of the future. ⬤

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