Strategy Research Project

The Cultural Challenges Navy Unmanned Air Systems Pose to Naval Aviation

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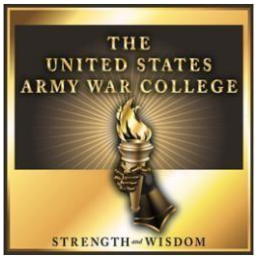

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Abstract

The Navy has noted its current shipboard air platforms are insufficient to project power in a future conflict with near peer competitors. To alleviate this shortfall, the Navy is making a concerted effort to increase its investment in unmanned air system (UAS) technology. Navy strategic leaders must prepare the Naval Aviation community now to ensure UAS are integrated effectively and efficiently into the fleet. Current Navy manned pilot culture might not welcome this major transition and may present significant resistance against UAS playing a larger role in Naval Aviation. The purpose of this paper is to identify the potential cultural challenges created by the strong personalities of Naval Aviators, project the possible impacts these challenges will pose on Naval Aviation's future, and recommend possible solutions to Navy leadership. This analysis reviews Naval Aviation's UAS platforms and current Navy pilot culture. It examines cultural challenges in the US Air Force and US Army to seek lessons for the Navy to consider, and offers recommendations based on the organizational change models of John Kotter and Fred Nickols.

The Cultural Challenges Navy Unmanned Air Systems Pose to Naval Aviation

The Navy has noted its current shipboard air platforms are insufficient to project power in a future conflict with near-peer competitors.[1] The Navy will be greatly challenged in a conflict with Russia, Iran, or China as these adversaries will go to great lengths to deny Naval forces access to the area of conflict. To alleviate this shortfall, the Navy is making a concerted effort to increase its investment in unmanned air system (UAS) technology to meet the need outlined in the Department of Defense Unmanned Systems Roadmap 2013-2038.[2] To champion this effort, in 2015, the Secretary of the Navy (SECNAV) instituted a new department within the Navy staff tasked with smoothing the transition between unmanned development and acquisition programming.[3] The SECNAV also indicated that the F-35 Joint Strike Fighter "almost certainly will be, the last manned strike fighter aircraft the Department of the Navy will ever buy or fly."[4] To further emphasize the Navy's commitment to the future of UAS, over $900 million has been requested for continued procurement and production of existing Naval UAS in the Fiscal Year 2017 budget and more than $2 billion through fiscal year 2021 toward UAS capability aboard aircraft carriers.[5] These outlays illustrate that UAS are, and will be, an increasing central component of the future Navy force.

Navy strategic leaders must prepare the Naval Aviation community now to ensure UAS are integrated effectively and efficiently into the fleet. Current Navy manned pilot culture might not automatically welcome this major transition and may present significant resistance against UAS playing a larger role in Naval Aviation, particularly if Navy pilots are pulled from the cockpits of manned aircraft to fly UAS from a workstation. The purpose of this paper is to identify the potential cultural challenges created by the strong personalities of Naval Aviators, project the possible impacts these

challenges will pose on Naval Aviation's future, and recommend possible solutions Navy strategic leaders can implement to address these concerns. This analysis begins by exploring Naval Aviation's current and future UAS platforms and the Navy's method of organizing and staffing its UAS squadrons. It will focus on the MQ-8B Fire Scout, the MQ-4C Triton, and the MQ-25A Stingray since they are, or anticipated to be, operated by manned rated Navy pilots and receive the bulk of UAS funding and investment over the Navy's future year's defense plan.[6] The paper then examines Navy manned pilot and squadron culture to provide initial insight into the potential cultural resistance that may arise between Navy manned and unmanned pilots as UAS become prevalent in the fleet. Next, this paper will analyze the different UAS operational approaches, UAS pilot staffing methods, and cultural differences between manned and unmanned pilots of the US Air Force and US Army. This paper will compare and contrast the operational approaches and cultures of similar programs within the US Air Force and US Army and will offer analysis that identifies friction points and best practices used by the other services. Finally, this paper offers recommendations based on the organizational change models of John Kotter and Fred Nickols that Navy strategic leaders can leverage to derive and execute sound cultural change strategies.

The MQ-8B Fire Scout unmanned helicopter conducts reconnaissance and targeting operations from Guided Missile Frigates (FFG) and Littoral Combat Ships (LCS).[7] Its first operational deployment was in 2009.[8] A single MQ-8B Fire Scout weighs 3,150 pounds with a full payload and has an endurance of five and a half hours at an airspeed of 80 knots.[9] The MQ-8B Fire Scout was not designed as a stand-alone system. It can be combined with up to two additional MQ-8B Fire Scout platforms to

provide twelve hours of continuous coverage up to 110 nautical miles from the ship.[10] Additionally, its capabilities allow the ship to form a comprehensive maritime operational picture with enhanced situational awareness in close concert with the manned MH-60 Seahawk helicopter.[11] For instance, airborne MQ-8B Fire Scouts operating over the horizon can detect and track multiple maritime threats at range and provide situational awareness and targeting data directly to the cockpit the manned MH-60 Seahawk. A Navy helicopter squadron employing this capability is comprised of both MH-60 Seahawks and the MQ-8B Fire Scouts. Additionally, the squadron pilots are Naval Aviators qualified to operate both platforms and rotate manned and unmanned flying duties.[12] The integrated nature between the MQ-8B Fire Scout and the MH-60 Seahawk mission requires close coordination and mutual cooperation between manned and unmanned pilots.

The MQ-4C Triton, estimated to enter operational status in early 2018, is the next UAS in the Navy's arsenal. The first MQ-4C Triton squadron was established in Jacksonville, FL on October 2016, but will not receive its compliment of airplanes until late 2017.[13] The MQ-4C Triton is derived from the US Air Force RQ-4B Global Hawk and adds persistent long range maritime intelligence, surveillance, and reconnaissance (ISR) to the Navy Fleet.[14] The MQ-4C Triton weighs 32,250 pounds, has an endurance up to 24 hours at an airspeed of 320 knots, can reach an altitude of 60,000 feet, and has a range of 8,200 nautical miles.[15] Its mission will combine and compliment the manned P-8A Poseidon, a long range maritime reconnaissance patrol aircraft based on the Boeing 737-800ERX. MQ-4C Triton pilots are rotated out of the P-8A Poseidon patrol squadrons exclusively to fly and concentrate on MQ-4C Triton operations.[16] The

MQ-4C Triton aircraft are normally forward deployed to the directed area of operations with a small support staff, maintenance crew, and a few pilots to assist with takeoffs and landings. However, the mission pilots (those that monitor the aircraft and operate its sensors throughout its long duration mission) will fly the MQ-4C Triton remotely from squadron facilities located in Jacksonville, FL.[17] The MQ-4C Triton provides maritime ISR over a large area due to its endurance and altitude advantage maintaining situational awareness as P-8A Poseidon aircraft rotate off station for refueling and crew exchanges. Additionally, MQ-4C Triton crew can detect, classify, and transmit maritime target information directly to the P-8A Poseidon aircrew.[18] This gives P-8A Poseidon aircrew increased situational awareness beyond their field of view and this information can be relayed to Navy surface ships, further enhancing battlespace awareness. The success of the MQ-4C Triton and P-8A Poseidon mission depends on the seamless integration and cooperation between manned and unmanned pilots.

The MQ-25A Stingray is the Navy's newest UAS procurement program. Initially conceived in 2005 as the Unmanned Carrier Launched Airborne Surveillance and Strike (UCLASS), this system was projected to provide the aircraft carrier with ISR and long range strike capability.[19] However, despite a successful launch and recovery demonstration from an aircraft carrier in 2013, a 2015 DOD review concluded that the Navy would need an additional outlay of funding to meet ISR and strike requirements, delaying the program three years.[20] This review caused the Navy to repurpose the program to an unmanned airborne carrier refueling platform.[21] The MQ-25A Stingray will provide the aircraft carrier with an organic high capacity air refueling platform to extend the combat range of current carrier strike aircraft. This capability will significantly

increase the striking distance of the Carrier Strike Group (CSG) without relying on land based aerial refueling aircraft.[22] MQ-25A Stingray technology will also provide a foundation for the Navy to develop additional long rang ISR and strike UAS platforms. Currently, the Navy has not decided whether to use enlisted personnel or Naval manned pilots to operate the MQ-25A Stingray. However, the current trend from the previous discussion of the MQ-8B Fire Scout and MQ-4C Triton would indicate that the Navy will rely on manned pilots. Similar to the other unmanned systems discussed, MQ-25A Stingray will rely heavily on the teamwork of manned and unmanned pilots for mission execution. For instance, MQ-25A Stingray pilots will need to take part in the mission planning process and attend mission briefs and debriefs to provide manned pilots with efficient aerial refueling profiles to maximize the manned aircraft combat range.

The collective interpersonal and group dynamics of Naval Aviation culture can help explain the possible challenges increased UAS prevalence might pose to the Navy. Naval Aviation culture is driven by the risks associated with shipboard flight operations and comprised of courageous “Type-A” personalities with a work hard play hard attitude, a sense of tight knit camaraderie, a desire to win, and an outgoing nature that dominates during social settings. Military aviation in general comes with its share of risks, aside from the obvious dangers of combat operations. Deteriorating hazardous weather conditions, the unexpected mechanical failure during a critical phase of flight, or the limitations and pitfalls of human physiology are always a possibility during every flight. Yet, Naval Aviation adds the dangerous environment of ship board operations to the mix. Launching or recovering from an aircraft carrier or small deck frigate in rough

seas during bad weather without another airfield to choose from arguably takes a unique talent and skill set that requires extreme concentration and the ability to focus under pressure.[23] Therefore, the typical Naval aviator exhibits an aggressive, outgoing, competitive, and ambitious personality.

Hollywood movies like “Top Gun” and “Flight of the Intruder” have closely captured the essence of Naval Aviation culture. For instance, the volleyball scene in “Top Gun” and the bar fight scene in “Flight of the Intruder” displayed the dedication and driving desire to win any contest, even when outside the cockpit. The multiple dogfight (air combat) and low-altitude fast flying scenes that occur in both movies, highlight the culture’s aggressive attitude and tight-knit teamwork required to win the fight in the air. Both movies also demonstrate the Naval Aviator’s cultural tendency and willingness to take risks. In “Top Gun,” Maverick ignores his critically low fuel state to assist a fellow pilot having difficulty. Similarly, Jack executes a lone unauthorized bombing mission to avenge the death of his close friend in “Flight of the Intruder.” Although both of these movies highly dramatize Naval Aviation culture, they capture the common characteristics of brave, macho, hard-playing, hard-drinking men in close knit units that are quick to fight both in the air and in the bar.

In addition to individual characteristics, Navy squadrons also exhibit unique organizational characteristics as a subset of overall Naval Aviation culture. Squadron cultural traits differ across the force due to geographic location and also their deployment schedules, creating unique squadron identities. Each squadron’s cultural characteristics differ from one another for a variety of reasons. Squadrons are separated geographically by west and east coasts. Aviators assigned to a particular

coast early in their career tend seek follow on tours at the same location preventing the movement and exposure to the other coast. This may not always be the case but it does contribute to small cultural differences between east and west coast squadrons that could impact the Navy's ability to efficiently transition to UAS.[24]

A squadron is designed as a self-sufficient unit comprised of nearly everything it needs to operate. Along with aircrew, squadrons are assigned their own airframes, maintenance crews, admin and support personnel. Members of these organizations work, train, and fight together, whether stationed on shore or deployed out to sea, Navy squadron's exhibit a strong sense of unit cohesion, identity, and camaraderie. This self-contained structure allows certain flexibility. If, for instance, a squadron is reassigned to a different CSG or re-tasked to support a new contingency, it makes this transition easy with little support or outside assistance. However, culturally, this self-sufficient construct further embeds a uniqueness of identity among Navy squadrons.[25] This cultural dynamic could benefit the transition to UAS if Navy leaders can leverage squadron cohesion.

The individual culture of a Navy squadron is heavily influenced by the leadership style and personality of its commanding officer. A struggling squadron can rapidly become an organized lethal force through effective unit leadership. Conversely, a highly effective and cohesive squadron can quickly degrade due to poor leadership.[26] One example includes the toxic environment created by the commanding officer of the Navy's Blue Angel demonstration team from 2010 to 2012. The commanding officer promoted a squadron culture that allowed the display of pornography in work spaces and aircraft cockpits, dissemination of crude sexual content within squadron communications, and demeaning hazing rituals.[27] As a result, the squadron suffered

from a hostile work environment and a thorough sexual harassment investigation. The commanding officer was cited for accepting and allowing behaviors against Navy policy and was subsequently relieved of command.[28] Therefore, squadron leadership has an immediate effect on a navy squadron and is the most direct way of changing Naval Aviation culture. This is one characteristic the Navy can leverage to support the seamless integration to unmanned systems.

Since the Navy is relatively new to the UAS arena it has not had the time to truly develop an unmanned culture. However, the Navy can gain insight on both friction points and potential best practices by analyzing the different operational approaches and unmanned cultures of the US Air Force and US Army. Both services have employed a multitude of UAS platforms for more than two decades. As a result, they have developed a high level of proficiency and an integrated UAS culture. The Navy can anticipate its own cultural friction points by analyzing the UAS operational approaches and cultural challenges between manned and unmanned pilots of the US Airforce and US Army.

The US Air Force has designed an operating construct to employ its fleet of MQ-1 Predator, MQ-9 Reaper, RQ-4 Global Hawk, and RQ-170 Sentinel platforms. US Air Force UAS pilots are officers trained as manned aircraft pilots who fly these platforms from remote facilities located throughout the US, while the aircraft and a limited number of launch and recovery pilots are forward based in theater.[29] For example, a US Air Force pilot may fly a UAS mission based in Iraq on one day and then fly one based in Afghanistan on the next. This operating construct provides the advantage of flexibility to support global requirements. These remotely controlled operations also allow the US Air

Force an increased percentage of available assets, require less forward deployed people and logistics, and possibly provides this capability at an equal or lower cost compared to their manned counterparts. [30] Likewise, the advantage for using qualified pilots include their familiarity of aviation fundamentals and airspace requirements, along with the knowledge required to coordinate with aircraft controlling agencies.

The US Air Force has encountered problems using manned pilots to operate UAS. They initially staffed their UAS pilot requirements with manned pilots taken out of their current manned platforms.[31] For example, initial UAS crews were pilots that previously flew F-16, C-130, and C-17 as well as other US Air Force aircraft. Over time, the US Air Force faced a UAS pilot deficit as the demand for UAS operations significantly increased. UAS qualified pilots were required to either extend their UAS flying tours, serve additional rotations, or in some cases were permanently transitioned out of their manned platforms to meet the UAS demand. In the last few years, the US Air Force has attempted to address these issues by creating a dedicated UAS pilot training program and has recently initiated an effort to utilize enlisted personnel to fly the RQ-4 Global Hawk.[32] This effort has had some successes, although the training pipeline has not been able to keep up with demand; recently 37 percent of US Air Force UAS pilots are manned pilots temporarily assigned to UAS duties.[33]

US Air Force culture is largely biased toward manned aviation which fuels additional friction among its UAS community.[34] Many UAS pilots indicate that manned pilots express a condescending view toward the UAS community, essentially regarding them as second class citizens.[35] A common attitude among US Air Force fighter pilots indicates a disdain for UAS pilots. They do not understand how a UAS pilot can warrant

the same level of prestige and commendations when they do not suffer the same dangers or sacrifices as the fighter pilots living and working in the combat zone.[36] An additional factor adding to the friction could be that pilots diverted from 'glamorous' aircraft such as the F-16 or aircraft that provide a direct pipeline to a post military airline career may become disillusioned with flying a non-glamorous unmanned aircraft that has minimal post military career opportunities. In other words, many have been forced into UAS service which was not the reason they volunteered for military service. This cultural attitude, coupled with the high workload, has US Air Force UAS pilots wondering if their efforts are worth the personal sacrifices or whether they are valued by their service. This cultural friction could be the underlying factor causing US Air Force UAS pilots to leave the service faster than they can be replaced.[37] The Navy should consider this cultural dynamic if it plans to staff its UAS by diverting pilots from the manned community in a similar fashion.

A majority of US Army UAS are comprised mostly of small lightweight tactical systems that operate at low altitude and require line of sight communications to employ.[38] For an accurate comparison across the Navy and US Air Force, this analysis will focus on the US Army MQ-1C Grey Eagle platform, a derivative of the US Air Force MQ-1 Predator. US Army MQ-1C Grey Eagle pilots are highly skilled enlisted soldiers and warrant officers.[39] US Army UAS pilots and assigned aircraft are based at airfields in theatre to provide direct support to the ground force commander.[40] This construct provides the advantage of face to face interaction and coordination with the soldiers they support, which in turn can increase efficiency of operations. Additionally, UAS

pilots and the ground units they support builds bonds (or at least the perception) of shared sacrifice while deployed.

US Army UAS culture is difficult to distinguish from the rest of its force. Even if there are cultural challenges between US Army manned and unmanned pilots, the challenges have not been significant enough to warrant a large systemic challenge. However, their operating structure does impose some inefficiencies for UAS employment and readiness. A recent Government Accountability Office (GAO) report noted that the US Army lacked adequate operator training and readiness when UAS crews were based stateside between deployments.[41] Additionally, US Army UAS crews do not support combat operations when they are not deployed. Instead they use this time to reset and train, resulting in the disadvantage of continuous UAS coverage. The Navy might be able to leverage the US Army UAS staffing model since it seems to lack major cultural challenges, but it must be mindful of the GAO report observations regarding US Army readiness issues when UAS crews were not deployed.

The Navy must anticipate UAS cultural challenges and decide on an optimal operating construct to efficiently and effectively integrate UAS into the fleet. Comparing and contrasting the challenges of the US Air Force and US Army against current Navy UAS operations highlight possible impediments to Naval Aviation UAS operations. The results of this analysis will inform recommended solutions or course corrections to Navy strategic leaders.

The Navy and US Air Force manned pilot culture share similar attributes of strong personalities that tend to dominate their respective cultures. The US Air Force's cultural resistance to UAS pilots contributes to the challenge of providing a sustained

operational UAS force. Debatably, the strong personalities of manned Navy pilots coupled with the Navy's tendency to honor long standing traditions could pose an equal or even higher level of formidable resistance to UAS integration compared to the US Air Force. If not addressed, the Navy could encounter a resistance to the integration of UAS that might be too large to overcome.

The current squadron staffing concept of the Navy's MQ-4C Triton shares a similar construct to the US Air Force. MQ-4C Triton pilots are reassigned out of their manned community, effectively taking them out of the cockpit during their UAS tour. While this might serve the Navy well initially to meet efficiency for tasking requirements, it could prove costly in the long run if cultural confrontation metastasizes over time. The US Air Force cultural attitude toward UAS pilots as second class citizens and the negative effects of forcing pilots to fly a UAS when they originally signed on to fly a different aircraft addressed earlier in this study clearly illustrate this point. Conversely, the synergetic mission and manned and unmanned teaming relationship between MQ-4C Triton and manned P-8A Poseidon crews might create unity within Naval Aviation culture, however, this assumption will need validation.

The US Army UAS staffing model that utilizes enlisted personnel as UAS pilots is a solution the Navy could leverage. The lack of cultural friction between US Army manned and unmanned pilots might not apply to the Navy since the force structure between the two services is vastly different. However, utilizing navy enlisted personnel as UAS pilots could ease cultural tension due to the subordinate officer to enlisted relationship. Additionally, enlisted personnel can provide a cost-effective solution.[42]

Any major change will certainly be met with its share of cultural resistance within an organization. The failed business model of Polaroid and the deep seeded resistant culture that hindered its ability to adjust to the digital photography age is one example. Polaroid's business model was based on the assumption that their customers desired an instant printed high quality picture. The company's culture held this belief well after the digital camera became prominent in the photography industry and forced the company to file for bankruptcy.[43] This could hold true for Navy culture which has always had deep roots in traditions and historical norms.[44] The Navy must consider all aspects of culture as they incorporate UAS into the larger portion of their force and not automatically assume their current operating model will be sufficient. The Navy can take two approaches to dealing with this change. On one hand, it can focus on incorporating new technology under the current operating structure and deal with cultural challenges as they arise. On the other hand, the Navy can take a proactive approach now to potentially mitigate cultural issues during this transition. The change models and cultural change strategies offered by John P. Kotter and Fred Nickols can guide senior Navy leadership with implementing this transition.[45]

John Kotter, a leading expert on leadership and change, offers principles for managing change that the Navy should consider when addressing the challenge of integrating UAS into the force.[46] His eight-step framework for implementing successful change includes; "establishing a sense of urgency, creating a guiding coalition, developing a vision and strategy, communicating the change vision, empowering broad based action, generating short term wins, consolidating gains and producing more change, and anchoring new approaches in the culture." [47] This study will focus on

Kotter's initial four steps since they concentrate on initiating the change process and can be applied immediately by Navy strategic leaders. Although the last four stages are critical to implementing successful change, they leverage the concepts of the previous steps to sustain and foster the change process. The Navy should incorporate them as well, but this analysis is deferred.

Establishing urgency requires Navy strategic leaders to increase awareness throughout the fleet and promote UAS importance at every opportunity. The Naval Aviation Vision communicates the Navy's need to shift toward unmanned systems, however, leaders do not generate urgency solely through documents.[48] Naval Aviators must see that change is on the horizon through conversations led by senior leaders, exposure to the technology, and media coverage. Navy leadership must directly attempt to foster a sense of urgency in order to generate the momentum needed to change Naval aviation culture in a positive way. Additionally, Navy leadership, should not assume that fostering a sense of urgency will be a short-term effort and must, from the top down, maintain momentum to perpetuate the urgency of cultural change.

The recent Secretary of the Navy initiated a guiding coalition that suggests the influence of Kotter by creating a new department to lead the effort for all Navy unmanned systems.[49] However, this endeavor might prove insufficient if lower Navy leadership is not engaged. Senior Navy leaders must empower lower level leaders in order to promote the importance of Navy UAS and the need for cultural change.

Kotter's suggestion to develop a vision is apparent in the 2016 Naval Aviation Vision document. This document outlines Naval Aviation's future capabilities, capacity and readiness required to meet the Navy's future challenges.[50] However, the vision

places emphasis on change in technology but does not address the Navy's future culture impacts. Navy leaders need to develop a vision that address Naval Aviation's cultural change. Additionally, the Navy's vision and cultural change strategy needs to address existing cultural attitudes based on a clear understanding of the entire organization.[51]

Navy strategic leaders can leverage Kotter's effective communication techniques to disseminate the change vision. These include keeping the message simple, communicate using many different forums, continuous repetition of the message, listening to feedback, and address arising inconsistencies.[52] While Navy leaders promote the UAS change vision, they must also consider implementing an open and honest feedback mechanism. This will allow Sailors to communicate concerns and leaders to reciprocate appropriately.

While leading this change, it is important to solidify a sound cultural change strategy while remaining parallel with the steps above. Navy leaders can apply a holistic strategy to drive successful change by leveraging the 50 years of combined military and business expertise of Fred Nickols, complimented with Kotter's principles. While Kotter's process offers a universal approach for leading the change effort, Fred Nickols offers a framework for identifying change strategies based on the factors evident within an organization. These include: understanding the magnitude of resistance to change, the target population, the stakes involved, the time frame for implementing change strategy, leveraging expertise, and the dependency of the organization on its people.[53] This paper will focus on the aspects of resistance to change, the time frame involved, and involving the experts. While analyzing the population, stakes, and dependency on people remain

important and must be considered by Navy leadership, they can easily be answered and are omitted from this paper.

Navy leadership must assess the degree of resistance to implementing UAS into the fleet. The strong personalities in Naval Aviation culture will most likely produce a high degree of resistance to change, requiring a strategy that will rely on exercising authority combined with changing and adapting environmental conditions.[54] Possible solutions include creating an organizational construct that mitigates the degree of resistance by utilizing Navy enlisted UAS operators, or combining UAS duties that allow concurrent time in the cockpit.

The time frame for implementing change strategy is also important.[55] The longer timeline until UAS are fielded allow for experimentation and implementation of feasible cultural change strategies, especially for carrier aviation where UAS platforms are relatively new. However, the Navy's current fielded UAS might require a more aggressive cultural change strategy initially allowing opportunities to identify and implement future culture change solutions. Cultural change efforts need to be implemented sooner rather than later.

Lastly, involving experts who specialize in organizational change and UAS operations will greatly assist with the change effort. The Navy should seek to commission UAS cultural studies, leverage professional cultural change experts, and solicit recommendations from UAS experts producing this technology. Outside professional assistance can provide the Navy with feasible options for UAS operations.

The Navy's pending shift toward UAS integration into the fleet will require a major adjustment for Naval Aviation culture. The change frameworks provided by Kotter and

Nickols provide Navy leaders with the necessary tools to successfully implement culture change. If senior Navy leaders expect that Naval Aviation culture will not resist the shift to unmanned systems or they assume change will spontaneously happen without incorporating a cultural change strategy, Naval Aviation will indeed face a rough road ahead. Navy leadership must initiate a cultural change strategy now and these change frameworks provide the leverage to successfully shape Naval Aviation's future.

This paper has identified a possible changing cultural dynamic as Naval Aviation transitions from manned to a mixture of manned and unmanned pilots. The friction exhibited in the US Air Force between manned and unmanned pilots have shown that culture can impact readiness, morale, and combat efficiency. The Navy could face similar cultural challenges since it plans to use rated manned pilots to fly its UAS. US Army UAS cultural challenges were less evident even though their operational model revealed training and readiness deficiencies between deployments. Navy strategic leadership can leverage the paradigms of US Air Force and US Army UAS coupled with the organizational change frameworks of Kotter and Nickols to derive a holistic UAS Naval Aviation change strategy. The following recommendations are offered to assist with this effort.

The Navy could use enlisted personnel as UAS pilots similar to the US Army UAS staffing structure. Cultural friction between manned and unmanned pilots could be eliminated entirely by utilizing trained enlisted UAS pilots since future Navy UAS platforms might not require trained manned pilots to operate effectively. For example, operating the carrier based MQ-25A Stingray with well-trained enlisted pilots coupled with officer oversight could be an efficient and cost effective solution. Additionally,

cultural friction between manned carrier pilots and UAS pilots would be nonexistent due to the subordinate enlisted officer relationship. The Navy should initiate planning now to train and utilize enlisted operators for this mission since an adequate training pipeline could be established before the MQ-25 Stingray would be operationally employed. However, If the Navy planned to rotate carrier aviators out of the cockpit to concentrate solely on UAS tanker support to their manned squadron mates, a major culture clash between pilots could be imminent. Arguably, Navy UAS pilots providing aerial refueling support would be treated as second class citizens similar to the US Air Force UAS cultural challenge.

The Navy might incorporate the operational construct of the MQ-8B Fire Scout throughout the other Navy UAS programs as another possible solution. This construct presents several advantages that resist cultural challenges between manned and unmanned pilots. Pilots can remain current in both platforms and the recent experience will not require significant requalification during tour rotations. Stronger crew integration and cohesion is possible since pilots are engaged routinely with both aspects of the mission, which can engrain a cohesive team concept and possibly strengthen squadron culture. If pilots are qualified and current to operate both platforms during deployment, the cultural differences could become nonexistent. Pilot morale will likely not be negatively affected since Navy pilots will always have an opportunity to fly from the cockpit.

This paper has researched how experts on organizational culture change recommend dealing with these challenges. Navy strategic leaders must be fundamentally aware of the effects culture can have on the organization. Although it is

important for leaders to address the logistical challenges and cost efficiency of implementing new technology into the fleet, they should not assume that Naval Aviation culture will automatically get on board. Navy strategic leaders must implement a comprehensive change strategy to overcome the Navy cultural predisposition of long standing traditions and the strong personalities in Naval Aviation culture. Navy leaders must proactively promote culture change by increasing the sense of urgency throughout the fleet. Navy strategic leaders must guide, empower, and foster squadron commanding officers to promote culture change within their units. Additionally, cultural change must be a part of the Naval Aviation vision and repeatedly communicated while accepting and applying open and honest feedback. The Navy should also commission additional studies to investigate the potential challenges UAS pose to Naval Aviation. Professional advice from organizational culture change experts and UAS operations experts could provide additional recommendations.

Recent history has demonstrated the strategic importance of UAS technology. This paper provided a small glimpse into the complex cultural problems the Navy might encounter with bolstering its UAS capability. Navy strategic leaders should consider Naval Aviation's cultural complexity while integrating UAS into the fleet. This study highlighted the UAS challenges of the US Air Force and US Army to provide Navy leaders an understanding potential cultural issues they can leverage to smooth the Navy UAS transition. The organizational change models of Kotter and Nickols offer Navy leaders a great framework for change. Admittedly, this study did not capture every aspect or challenge of this complex problem. Ultimately, Navy strategic leaders must consider cultural impacts and commission a detailed and comprehensive analysis to

gain a holistic understanding of the issues which will greatly benefit the future of Naval Aviation.

Endnotes

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