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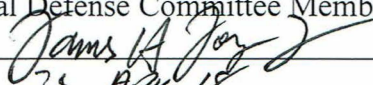
The Loss of a Generation of Marine Aviators

SUBMITTED IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF
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Executive Summary

Title: The Loss of a Generation of Marine Aviators

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Thesis: The Marine Corps' leaders and government policymakers must implement innovative retention strategies in light of the current factors deterring continued Marine aviation service or risk losing a generation of Marine aviators to the rapidly expanding civil aviation industry.

Discussion: Marine aviation is undergoing a manpower crisis. Retaining skilled and highly trained individuals in the all-volunteer military during periods of economic prosperity is always challenging, especially when those skills and training are exceedingly desired outside the military. Reduced flight hours caused by maintenance issues, an aging fleet, and budgetary constraints have all led to a reduction in pilot proficiency, an increase in mishap rates, and decreased opportunity for career enhancing qualifications. Additionally, increased administrative responsibilities, duties other than flying, and a lack of a work/life balance are further deterring pilots from continued service in Marine aviation. This problem is compounded by the recent changes to Federal Aviation Administration (FAA) regulations which brought about an increase in job opportunities, compensation, and benefits for military aviators in the civil aviation industry. This paper will introduce the major internal and external factors that have led to a drastic reduction of qualified Marine aviators, assess current retention strategies, and present concepts for incentivizing continued service in Marine aviation that can be further explored to retain talented pilots in the Marine Corps.

Conclusion: To keep the impending pilot shortage from negatively affecting Marine aviation for years to come, the Marine Corps must renew its investment in its aviation professionals. Lessons from corporate America's proven talent retention strategies are key to retaining quality Marine pilots. New and innovative programs should be implemented to promote job satisfaction and foster a work/life balance. Incentive pay should be service specific and should be reviewed to ensure that the Marine Corps is incentivizing the demographic that it wants to retain – *first-term* Captains with flight leadership qualifications. Finally, cooperation between the civil aviation industry and the military is required provide career opportunities to retain highly trained and talented personnel.

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Marine aviation is undergoing a manpower crisis. Retaining skilled and highly trained individuals in the all-volunteer military during periods of economic prosperity is always challenging, especially when those skills and training are exceedingly desired outside the military.¹ Reduced flight hours caused by maintenance issues, an aging fleet, and budgetary constraints have all led to a reduction in pilot proficiency, an increase in mishap rates, and decreased opportunity for career enhancing qualifications. Additionally, duties other than flying and a lack of a work/life balance are further deterring pilots from continued service in Marine aviation. This problem is compounded by the recent changes to Federal Aviation Administration (FAA) regulations which brought about an increase in job opportunities, compensation, and benefits for military aviators in the civil aviation industry.

The Marine Corps' leaders and government policymakers are actively tracking these issues and have been taking steps to boost aviator retention as this project was being conducted. This problem, however, is constantly evolving and therefore it presents a "moving target" for military and civilian leaders. Additionally, this problem has been steadily building for over a decade and will doubtfully be remedied through quick fixes; addressing the current pilot retention problem will require innovative, long-term solutions.

This paper will introduce factors that have led to a recent and drastic reduction of qualified Marine aviators, assess current retention strategies, and present incentive concepts for that can be further explored to retain pilots in the Marine Corps. The targeted population is specifically those that currently possess or have the potential to obtain flight leadership qualifications and instructor designations. The recommendations presented include updates to aviation compensation programs and ways to improve job satisfaction, create opportunities through innovative programs, and foster an improved work/life balance for Marine pilots.

The Current State of Affairs

Currently, all services are experiencing aviation manpower shortages of varying severity.² In an Armed Services Congressional Sub-committee hearing on March 29, 2017, representatives from each military branch were questioned about their respective services' manpower and readiness issues.³ The Marine Corps' shortage of trained pilots was explained as a "manpower gap" — a lack of Captain (O-3) aviators with essential flight leadership qualifications. Put simply, experienced pilots that make up the instructor base of operational squadrons and those "up and coming" leaders are increasingly making the choice to leave the service soon after their initial service obligation of 6 to 8 years (platform dependent) is met.⁴

In an attempt to make up for the shortage of Captain aviators, the Marine Corps released MARADMIN 004/17, which announced that the company grade aviator inventory is at such a level that continuation on active duty of those Captain aviators who have twice failed selection to the rank of Major is necessary.⁵ Those officers selected for continuation were offered the opportunity to remain on active duty until 2020. MARADMIN 039/18 extended continuation on active duty until 2021, attesting that the manpower gap was not sufficiently filled by the retention efforts of 2017.⁶

Operational Effects

The Marine Corps states that the ability to surge during crisis response or major combat operations is degraded due to staffing challenges, insufficient materiel support, unpredictable funding, and an aging aircraft inventory.⁷ Although the Marine Corps has always endured similar challenges, sixteen years of combat operations in Iraq and Afghanistan have caused a

steady decline in the availability of Ready Basic Aircraft (RBA).ⁱ These factors have forced resource tradeoffs and reallocations that are preventing pilots from flying.⁸ The resultant decline in flight time has caused a reduction in pilot proficiency, an increase in mishap rates, and decreased opportunity for career enhancing qualifications, thus contributing to the current manpower gap.ⁱⁱ

Maintaining an Aging Fleet in a Fiscally Constrained Environment

Force downsizing and unpredictable funding have decreased contract maintenance support, triggered a lack of parts and maintainers, and prolonged acquisition of replacement aircraft. Sequestration caused furloughs and hiring freezes that resulted in stoppages at upper level maintenance depots while layoffs at Resetⁱⁱⁱ left squadron maintainers with the seemingly unattainable task of keeping tired airframes in safe, flying condition. Maintaining these aircraft is now more of a challenge with fewer Marines due to the force reduction that has been ongoing since 2010.^{iv}

The most prevalent maintenance problems have concerned the aging CH-53E Super Stallion and FA-18 Hornet airframes, where the past ten years have shown a steep decline of available aircraft and flight hours.⁹ Todd Harrison, director of budget analysis at the Center for

ⁱ NAVMC 4790.01: Ready Basic Aircraft (RBA) are Mission Capable Aircraft that is functional check flight complete, capable of day or night Instrument Meteorological Conditions field operations, and has the necessary operational communication, Identification, Friend or Foe, navigation, flight and safety systems required.

ⁱⁱ Lieutenant General Mark A. Brilakis, the Marine Corps' Deputy Commandant for Manpower and Reserve Affairs, testified at that the lack of RBA has exacerbated the shortage of trained aviators. He stated that "aviation readiness in the form of RBA and the resources to operate them is the single most important factor in alleviating our manpower challenges and contributing to retention."

ⁱⁱⁱ Reset: A civilian run maintenance program that completely disassembles, replaces worn and *high-time* components, and re-assembles aging and well used aircraft to increase service life

^{iv} Lt. Gen Jon Davis told reporters that some of the Marine Corps' most experienced maintainers were allowed to take early retirement when the service downsized from 202,000 to 184,000.^{iv} "We let some people go that probably – if we had better insight into who we had out there and the qualifications of those Marines inside the maintenance departments of our flying units – you'd say: 'These people can't go,'" said Davis.

Strategic and International Studies in Washington, D.C., stated that the problems with these aircraft are a symptom of a systemic issue plaguing the military – delays and cost overruns.¹⁰ Harrison specifically noted that the delayed CH-53K, which initially was expected to begin replacing the CH-53E in 2015 but won't be ready until at least 2019, is straining the upkeep of existing assets.

Aircraft age alone, however, does not directly equate to reduced capability, nor does it necessarily impact safety. For example, 76 B-52 bombers built between 1952 and 1962 remain in active service and are safely operating today.¹¹ U.S. Army CH-47 Chinooks have been in service since before America's involvement in the Vietnam War, and continue to be the Army's workhorse. The disparity between the readiness percentages of the Marine Corps' aging airframes and other services' "tried-and-true" aircraft have to do with the funding of continuous upgrades. The B-52s have undergone numerous upgrades to avionics, flight hardware, and weapons systems over its sixty-year lifetime. Furthermore, the aircraft was under-engineered, meaning it has plenty of physical room for additional systems and components. Finally, the airframe is not exposed to the level of fatigue and structural stress that helicopters or fighter/attack aircraft endure.

The Chinook's success is largely due to its ability to take on multiple upgrades that keep it relevant, ready, and dependable.¹² The newest model Chinook was introduced in 2007 and is expected to fully replace the previous model by 2020. As for the F-18 Hornet, the difference is that the Corps did not acquire the newer F/A-18 E/F Super Hornets to pick up the slack of the older models as the Navy did.¹³ Both the Navy and the Marine Corps' F-18 legacy Hornets are overused, under-maintained, and simply wearing out. The Navy, however, has a fleet of newer aircraft to share the burden of mission requirements, thus contributing to their higher reported

readiness rates.

The service life extensions of the Marine Corps' legacy airframes and ongoing high operational tempo have created an increased demand for parts in an already strained supply system. The Fleet Readiness Center East (FRC-E) at Cherry Point, North Carolina stated that getting spare parts for legacy aircraft can prove difficult because they are no longer in production, forcing the Marine Corps to manufacture replacement parts for the aging aircraft.¹⁴ The FRC-E specifically noted that it was taking up to 18 months to get parts for early model F-18s.¹⁵ Despite these challenges, demands of ongoing deployments continue to drag aircraft readiness to dangerously low levels.¹⁶ The result is fewer aircraft available for training and the subsequent fewer hours of flight time for pilots to maintain proficiency.

Declining Hours, Reduced Proficiency, and Rising Mishap Rates

Military aviation is inherently dangerous. Civilian pilots generally do not do, nor are they allowed to do, what military aviators are required to do both in training and in the accomplishment of their flying duties. Most civilian pilots take off and land on prepared runways and helipads while military aviators are required to maintain currency and proficiency in confined area landings, night vision goggle operations, formation flying, and aerial gunnery.¹⁷

Tasks that are commonly performed by military aviators are extraordinarily dangerous by civilian standards and are restricted by federal aviation regulations because of the level of risk incurred. In these operations, risk is only mitigated by continuous practice and proficiency. One thing that had separated military aviators from civilian pilots is that military aviators do those extraordinary things so often that they become ordinary. Now, however, many military aviators are unable to maintain a level of proficiency to mitigate the inherent risks of their required duties.

The sentiment of reduced proficiency among squadron pilots is echoed throughout Marine Aviation. According to an informal survey^v conducted in February, 2018, 33% of aviators now feel or recently felt that they were required to operate outside their level of training and proficiency in the accomplishment of their flying duties. 80% of survey participants stated that maintenance issues affected their ability to fly enough to remain proficient, and 79% felt that Marine aviation was unsafe due to decreased pilot proficiency.

Marine Corps total annual flight time is down from 397,408 flight hours in 2002 to 235,990 in 2016; in 2017, the Marine Corps only flew 211,000 hours.¹⁸ This is over a 50% reduction in flight hours. As flight hours are declining, mishap rates are on the rise; these mishap rates provide context to the Corps' current situation.^{vi} Mishap rates are based on 100,000 flight hours and are divided into two categories, flight mishaps and aviation ground mishaps. Flight mishaps are divided into three subcategories, Class A, B, and C, according to the injuries incurred and the damage done to the aircraft or property. For the purpose of this report, only Class A flight mishaps will be discussed.^{vii} It is essential to note that aircraft loss or damage due to enemy action is not categorized as a mishap, therefore it is not included in the calculation of mishap rates.

The Marine Corps' mishap rate has been steadily rising since 2013. The year 2017 marked the highest number of mishaps in a single year since 2005, and the highest mishap rate

^v Informal survey participants were randomly selected individuals known to the author. Participants consisted of active duty, reserves, separated, and retired Marine aircrew from various Marine aviation communities. Participants were asked if they would participate in an informal survey to assist with a project concerning aviation retention. They were not informed of the information in this report. Of the 54 surveys sent out, 42 were completed and returned to the author. These surveys make up the data referred to in this report.

^{vi} The Naval Safety Center tracks all aviation mishaps within the Department of the Navy.

^{vii} Class A mishaps are those that cause \$2 million or more in damage of DoD or non-DoD property or if a DoD aircraft is destroyed. Injury or illness that results in death or permanent total disability also meet the Class A mishap threshold. Permanent total disability is defined as a non-fatal injury or occupational illness, which in the opinion of competent medical authority permanently incapacitates someone. Also, the loss of both hands, both feet, both eyes, or a combination of any two of these body parts will be categorized as a class A mishap.

since 2004. According to the Naval Aviation Safety Center, the mishap rate for 2017 was 4.47 for every 100,000 flight hours.¹⁹ During 2017, the Marine Corps had 12 Class A mishaps with 21 fatalities.²⁰ These aviation mishaps were not the result of enemy action but occurred during routine operations and training. Furthermore, the majority of these mishaps were not due to mechanical malfunction, but pilot error.²¹

Since 2013, the CH-53E accident rate has increased four times higher than the historic fleet average.²² According to the Marine Corps' Training and Readiness (T&R) standards, around 15 hours a month is necessary to maintain basic skills to safely fly a military aircraft. In 2016, Hornet pilots were flying only 8.8 hours of their recommended T&R minimum of 15.7 hours and CH-53E pilots were flying an average of 10.7 of their T&R recommended 15.1 hours per month.

The CH-53E Super Stallion helicopters are the least available aircraft across the Marine fleet.²³ Pilot error and a lack of training were specifically cited as causal factors in the deadly 2016 CH-53E collision in Hawaii that killed twelve Marines.²⁴ A statement released by the service pointed to "severe readiness problems and parts shortfalls leading to inadequate pilot proficiency" as the main contributing factor.²⁵ According to a Marine Corps report, the squadron did not have enough RBA for adequate training. The investigation stated that the pilots had flown too few hours in the previous weeks leading up the crash to be proficient.²⁶ Of the four pilots, only one had flown over 5 hours in the preceding 30 days, and he had only flown 13 hours. The investigation found that during the month of the crash, many pilots in that squadron believed that this lack of flying caused their skills to atrophy. Some claimed that they were unable to safely execute certain tasks like landing a helicopter at night because they were not logging enough flight training hours.²⁷

Aside from reduced training time, another possible cause for the increased rate of Marine

aviation mishaps compared to other services can be attributed to the lack of on-board systems designed to increase the level of safety in operations. A perfect example of this is helicopter reduced visibility landings (RVLs); also known as *brownout*. The technology has existed to auto-pilot a helicopter during an RVL to a low, stable hover since the mid-1980's, and has been used in Army and Air Force helicopters ever since. This technology was not installed on Marine helicopters, requiring Marine aviators to rely on a human-based solution that ultimately became the critical factor in multiple aircraft and aircrew losses in and out of combat.

Diminishing Opportunities

The reduction in available flight time is also prohibiting many pilots from receiving necessary qualifications. According to an informal survey conducted by the author, 88% of Marine pilots believe that there are fewer opportunities for advancements in qualifications and career enhancing assignments now than there were 5-10 years ago. Squadron commanders have been forced to only fly certain pilots due to the lack of aircraft availability.²⁸ Instructors and flight leaders who will be the senior squadron pilots for an upcoming deployment will fly, while others get whatever is left over — often less than five hours a month for young co-pilots. This is causing an entire generation of aviators to be left behind. For example, CH-53E co-pilots that have accumulated 500 hours of flight time are eligible to be designated as a helicopter aircraft commander (HAC). This usually occurs shortly after one year in the squadron. Today, it takes an average of 24 months to be designated as a HAC. Some co-pilots are completing their first squadron tour of 3.5 years without accumulating the required hours to receive their HAC designation.

Due to the lack of RBA aircraft, flights are merely a review of basic skills rather than progression towards a more advanced level of training and proficiency. In an occupation where

opportunity and advancements depend largely on qualifications, there is a widening gap between those pilots with the essential qualifications and those without. Consequentially, Marine squadrons are suffering from a lack of depth on the bench, as squadron commanders are forced to invest a majority of available training resources to a few select O-3 pilots. These pilots, however, are proving increasingly difficult to retain.

Increased Competition with the Civil Aviation Industry

There have been many periods of hardship in Marine aviation history. So why are we seeing such a shortage of pilots now? The reason is that the civil aviation industry is providing ever-increasing opportunity outside the military for trained aviators. In 2013, the FAA drastically increased the number of flight hours required to carry passengers.²⁹ Previously, First Officers — civilian airline co-pilots — were only required to have a Commercial Pilot certificate, which required 250 hours of flight time.³⁰ The new rule requires First Officers to hold an Airline Transport Pilot (ATP) certificate, which requires 1,500 hours of flight time. This new rule also states that if a pilot has prior military flight training, the flight hour requirement may be reduced from 1,500 hours to only 750 hours to meet eligibility for a restricted ATP (R-ATP) certificate.³¹

Due to the changes in FAA regulations, most military aviators approaching the end of their service obligation meet or exceed the new flight time requirements and are immediately eligible for hire. These regulations have increased the time and cost required for civilians to obtain an ATP certificate.^{viii} Currently, it costs between \$130,000 to \$140,000 to obtain the required qualifications to be a First Officer. This has presented a competitive employment

^{viii} It costs approximately \$16,000 to receive a private pilot's license, \$55,000 to achieve an instrument rating and commercial pilot's license, and an additional \$50,000 to \$60,000 to complete an ATP program, plus approximately \$7,000 for required equipment and examiner's fees. Most military aviators leave flight school with a civilian instrument rating and commercial pilot's license through the optional Military Competency Conversion program for a test fee of \$150.

advantage for military aviators leaving the service for a higher paying, safer, and more predictable positions as commercial airline pilots.³²

This has all occurred as the U.S. economy has improved, spurring substantial growth in the aviation industry, therefore making military aviator retention much more difficult. According to a 2017 report, 87 new pilots will need to be trained to fly commercial airliners every day for the next 20 years to meet the anticipated demand of air travel.³³ In North America alone, the anticipated number of pilots required by the year 2035 is 117,000, almost seven times the current number of commercial pilots in the U.S. today.³⁴ If these projections hold true, the demand from the civil aviation industry will continue to present a problem for military aviator retention for years to come.

Civilian pilot opportunities are at an all-time high, and this is just the beginning. Baby-boomer era pilots are retiring at an alarming rate, causing increased demand for trained aviators in the civilian aviation field. The number of retirements from the airlines will rise even more drastically starting in 2021, as the majority of this generation of aviators will reach the FAA mandated retirement age of 65.³⁵ Within the coming decade, over 40% of airline pilots in the U.S. will retire from commercial aviation.

Benefits packages and compensation in civilian aviation have increased substantially in recent years due to the forecasted growth of commercial aviation and associated pilot demand. To attract potential employees, airlines are offering appealing compensation packages including medical and dental coverage, retirement benefits, profit sharing, paid time off, and worldwide travel privileges.³⁶ Increased compensation over what is generally expected by all sends a powerful message to employees about their importance to the organization.³⁷ American Airlines, Delta Airlines, and United Airlines have all signed new contracts with their pilots to raise their

hourly wages.³⁸ Smaller airlines are offering increased starting pay as well as bonuses of \$20,000. These prospective salaries and bonuses have attracted the attention of military aviators.

The Way Forward: Retention Strategies

The common theme among today's Marine aviators is discontent. All informal survey participants stated that they were discontent with the current state of Marine aviation. An increase in administrative responsibilities, duties other than flying, and a lack of a work/life balance are major factors that are deterring pilots from continued service in Marine aviation. 82% pointed to too many assigned tasks unrelated to flying (ground jobs, administrative burdens, etc.) as a contributing factor, a major concern, or the most prevalent factor in their decision to remain in Marine aviation service, 66% stated that additional duties and ground jobs detracted from their readiness and proficiency, and 75% cited a lack of a work/life balance as their decision to remain in Marine aviation service.

Employee retention is a leadership challenge both in the corporate world and in the military. There are numerous articles and seminars on leadership lessons the corporate world can learn from the military. Although military service is much different than a position in a business, there are also many corporate leadership lessons that can be applied by the military services to retain talent, particularly in specialized fields such as aviation. Retention after the completion of an initial contract in the military is based heavily on some of the same factors that keep civilians loyal to their employers when other employment options become available.

Those things that attract a person to a particular job are often different from what retains a person in that job. A strategic retention plan aimed at Marine aviators must involve a renewed understanding of what drives Marine pilots to remain in service. The Marine Corps must then develop policies and programs that meet those desires. It will take time to correct readiness

issues, and even more time for improved RBA to make an impact on retention. Additionally, the Marine Corps cannot directly compete with the booming civil aviation industry; however, incentive programs and improvements in quality of life for aviators can be implemented to impact retention of pilots who are discontent with the current state of affairs in Marine aviation. The following identifies shortcomings in existing programs, provides recommendations for improving current incentive programs, and outlines how the Marine Corps can tailor corporate retention strategies and innovative programs to Marine aviation to meet retention goals.

Compensation and Benefits: Readdressing Military Aviation Incentives

All military services currently offer savings plans, retirement pensions, health care plans, paid time off, and education benefits to service members. Although benefits and compensation are only modest predictors of an employee's decision to leave the organization, they cannot be ignored when discussing retention strategies.³⁹ The importance of benefits and compensation become increasingly important when civilian companies are offering exorbitant compensation and benefits packages to skilled military aviators.⁴⁰

Aviation Career Incentive Pay: All branches of service provide Aviation Career Incentive Pay (ACIP) as a means to incentivize aviation service. ACIP was first instituted in 1913 and has since undergone a series of changes, however; because it is fixed in dollar terms and not indexed to inflation, the pay rates have remained unchanged since 1998.⁴¹ Coincidentally, the last time the military reported pilot shortages of over 2,000 pilots was in the mid to late 1990s.

ACIP is limited to active duty and reserve officers who remain in aviation service on a career basis. The amount of compensation is based on years of service in an operational flying billet. This program, however, is outdated and does not currently align with the typical Marine aviator's career path, as it does not incentivize the demographic that has the most to gain from

leaving the Marine Corps with millions of dollars' worth of aviation training.⁴²

To understand the disconnect between ACIP pay rates and Marine aviator's career path, one must first understand the difference between *aviation service* and *total military service*. In most cases, an officer's *military* service begins upon commissioning, while *aviation* service begins upon the first day of training for an aeronautical designation or while assigned to an operational flying billet. In other words, aviation service doesn't simply mean service as aviation-rated officer, but rather service in an operational flight status. Therefore, time spent outside of an operational flying billet, e.g. resident professional military education (PME), Forward Air Controller (FAC) tours, recruiting, etc. does not count toward *aviation* service. Due to the Marine Corps' desire to produce "MAGTF Officers," — officers that not only are experts in their field but also educated and experienced in all elements of the Marine Air Ground Task Force — Marine aviators spend more time fulfilling duties not involving flying than their counterparts in other services.

Under current ACIP regulations, Marine aviators with less than two years of *aviation* service receive incentive pay at a rate of \$125 per month. This increases to \$156 at 2 years of *aviation* service, and \$188 at three years. This level of compensation is appropriate, as students in flight school should not receive a large incentive for learning to fly. Additionally, these aviators are at the beginning of their careers and have obligated service time due to their initial contract.⁴³ To put this small incentive in context, a Lieutenant or Captain's base pay averages about \$5,000 to \$6,000 per month, so the extra \$125 to \$188 incentive is rather insignificant, as it should be at this point on an aviator's career.

Between 4 and 6 years of *aviation* service is where most of a pilot's flying time will occur; however, compensation is only \$206 per month during this time period. When a pilot reaches six

years of flying service, the compensation rate reaches \$650 per month. The next step on the ACIP scale maxes out at \$840 per month for pilots with over 14 years of *aviation* service. Flight pay then reduces after 22 years of flying from \$585 to \$250 when a pilot reaches over 25 years of flying.

The maximum amount of flight pay was originally designed to coincide with the end of the initial Active Duty Service Obligation (ADSO) when pilots must make a decision about whether to stay in the military or leave. Currently, Marine aviators receiving \$840 per month will normally have close to 20 years of service due to the length of initial training and time spent in PME and B-billets (billets other than a Marine's primary job). These Marines will be either eligible to retire, or they will be approaching retirement eligibility, meaning they will be towards the end of their military careers. These individuals are not the pilots that need to be incentivized to remain in aviation service yet receive the highest rate of monthly incentive pay.

Pilots with less than 10 years of total *military* service are the demographic that the Marine Corps should focus on retaining. Normally this group is approaching 6 years of *aviation* service; therefore, they receive either \$206 or \$640 per month depending on whether they have crossed the 6 years of *aviation* service threshold. Those pilots with 750 to 1,500 hours of flight time are the backbone of a squadron but are also very valuable to prospective employers in the rapidly growing civil aviation industry, hence the "manpower gap" created by a lack of *first-term* Captains with flight leadership qualifications.⁴⁴ This two-decade old incentive program does not properly incentivize the aviators that the Marine Corps needs to retain.

ACIP pay rates should be service specific and should be reviewed to ensure that the Marine Corps is incentivizing the demographic that it wants to retain – *first-term* Captains with flight leadership qualifications. Furthermore, incentives should correspond to the period in an

aviator's career where they are doing the preponderance of their flying and according their level of responsibility in their aviation duties, which corresponds to the same demographic as above. Another possible solution would be to base ACIP on military service time and do away with the system that accounts for aviation service. This way Marine officers will not be penalized with reduced flight pay for attending resident PME and fulfilling non-flying B-billets that provide the Marine Corps with well-trained and experienced MAGTF officers.

Aviation Continuation Pay: Aviation Continuation Pay (ACP) provides a monetary incentive for Marine aviators to remain on active duty beyond their initial service contract. ACP for Marines was suspended in 2013 but was reestablished on a limited basis in 2017. Currently, the Marine Corps has authorized incentives for AV-8, F-35, F-18 and V-22 pilots only; this incentive offers currently \$20,000 per year for pilots of certain airframes to extend their contract for two additional years.

While previous ACP incentives were successful in retaining Marine aviators on active duty during its tenure, these incentives were not without their issues as well. Prior ACP eligibility requirements did not take into account the qualifications of the retained pilots.⁴⁵ Furthermore, an aviator that received ACP was under no obligation to remain in an active flying position in an operational squadron. The program essentially did not incentivize continued service of top performers but incentivized all aviators within a certain demographic just for being designated as an aviator. According to the most recent MARADMIN message announcing the new Aviation Bonus (AVB) incentive program, these issues remain uncorrected.⁴⁶

Just as civilian companies incentivize their top performers and those that the company needs to retain, the military can also take this approach to retain aviators. ACP/AVB should continue, but it should not be without well thought out restrictions and eligibility requirements.

The program should be reviewed periodically to ensure the it is appropriately addressing projected manning requirements and focusing on retaining the pilots that the Marine Corps needs to retain. This, however, this must be carefully administered due to the variables that determine who receives flight leadership qualifications and metrics for measuring overall performance, as these are often outside of a Marine pilot's control. Incentivizing certain aviators based on performance certainly has the potential for negative or unintended consequences. Pilots with great potential may go unrecognized simply due to timing and availability of RBA for training and qualifications.

Money is certainly a key consideration for employees, but monetary compensation is not solely responsible for talent retention.⁴⁷ Although bonuses and additional pay may help stem the immediate decline of aviators in the Marine Corps, it is not a long-term solution. Aside from compensation and benefits, the top reasons that drive employees to stay with a particular company include job satisfaction, career opportunities, and a work/life balance.⁴⁸ Employees in today's workforce, as well as military personnel, are looking for more than just a comfortable salary and benefits package; they want to enjoy their occupation.

Job Satisfaction

Most pilots agree that flying is the best part of the job. After all, the thrill of flying is why most Marine aviators chose that career path. Currently, pilots are spending less than half of their first ten years of service in operational flying squadrons.⁴⁹ Marine Captain Travis Grell effectively captured this issue in his 2016 article in *Proceedings Magazine*. Grell stated that, "after training for six months at the Basic School, two years in flight school, and six to 12 months at a fleet replacement squadron, the average pilot spends only four years in an operational squadron before moving to a three-year B-billet, taking him to the end of his service

obligation.”^{ix} Some pilots will have even less operational flying time because squadrons are required to provide qualified aviators to serve in ground combat units as Forward Air Controllers, while others will fill Individual Augments (IA) to man staff positions and various billet vacancies throughout the service.

A loss of proficiency and experience due to requirements outside of flying is compounded by the lack of available flight hours caused by the aforementioned maintenance and budgetary issues within operational flying squadrons. The result is a generation of aviators that do not have a foundation of years of consistent flying. Many pilots have experienced only sporadic training, interrupted by brief periods of surge operations while deployed. To make up for the reduced training opportunities, the Marine Corps must increase the amount of time pilots spend in operational flying squadrons. This will provide more flight time for pilots resulting in increased proficiency, greater job satisfaction, and added stability due to fewer required Permanent Change of Station (PCS) moves for Marines and their families.⁵⁰

The downside of this is that it could potentially cause some pilots to be less competitive for promotion among their peers due to a lack of billets outside of flying. The importance of the experience, knowledge, and insight gained from time spent in a billet outside of a pilot’s primary job of flying cannot be overstated; personal and professional development are key to cultivating professional military officers. Experience in an infantry battalion makes pilots better, as a pilot’s job is to support the Marines on the ground. Therefore, the answer cannot be reduced to an “either/or” career path, but requires a balanced approach relating to timing, career progression, the needs of the Marine Corps, and the desires of the individual.

^{ix} B-billet opportunities allow some pilots to attend Professional Military Education (PME) or Naval Postgraduate School (NPS), while others will serve on recruiting duty, as aviation instructors at flight school, Forward Air Controllers, or as instructors at the Fleet Replacement Squadron (FRS).

Another option would be to improve the staff augment flyer program. This would allow pilots on staff tours and B-billets to augment at nearby squadrons to maintain flight status and qualifications so that staff jobs will not be seen as leaving the cockpit. Aviators should be able to apply for the program when in receipt of orders outside of a flying squadron, screened, and selected according to their situation and the needs of the Marine Corps. Clearly this type of program would be dependent on the readiness levels of a particular squadron as not to further deplete the current lack of available flight time for pilots in operational squadrons. Additionally, the Marine Corps could reduce the number and length of non-flying billet personnel taxes on operational flying squadrons and provide more opportunities to stay in the cockpit past the rank of Captain without diminishing one's opportunity for squadron command.

Investments in Talented Aviators

A pilot's career path in today's Marine Corps is largely inflexible. There are unwritten rules for what billets must be held at certain levels, both flying and non-flying, to remain competitive for promotion. On the other hand, every year an aviator spends in military service, especially in non-flying billets, is one less year of seniority he or she could potentially have in a high-paying airline position that provides career opportunities, flexibility, and employment benefits. Additionally, every year spent in a non-flying billet is a year of flight time lost, which detracts from a pilot's competitiveness for employment in the civil aviation industry upon completion of a service obligation.

At the end of a Marine pilot's initial service obligation, most have easily accrued more than the required 750 flight hours to obtain a Restricted Airline Transport Pilot (R-ATP) certificate.⁵¹ These pilots also have more than a decade of service remaining to receive a full military retirement. From a purely financial standpoint, it is much more advantageous for a

military-trained pilot to leave the service after his or her service obligation is complete for a position as an airline pilot than to begin a civil aviation career after retirement from the service. This is the reason that so many pilots are exiting the military after their initial service obligation is complete. To effectively retain pilots past their service obligation, the Marine Corps must provide career opportunities to aviators both in the service as well as for employment after the completion of their service.

One way the military could invest in and retain highly qualified aviators is to develop programs, similar to the Pilot Exchange Program (PEP) but in conjunction with the civil aviation schools/companies, that allow top aviators to serve a sabbatical in the civilian aviation industry as an educational and career enhancing opportunity. This opportunity should take the place of typical B-billets, should be voluntary, and approved by a selection board. Participants would incur a service obligation extension for taking part in the program, therefore retaining talented aviators in service.

Pilots selected for a civil aviation certification program could spend all or a portion of their B-billet time further developing aviation skills and gaining requisite training and certifications for transition to civil aviation at the conclusion of their military careers, specifically fixed wing multiengine training and civil aviation ATP licensure. This program would provide growth opportunities and challenges that would expand selected pilots' knowledge in their field, and the Marine Corps would benefit by getting back a more experienced pilot with additional flying experience for a length of time determined by program requirements.⁵² The aviator will benefit from continued flying, increased aircraft qualifications, and FAA qualifications gained from the program that will contribute directly to civil aviation employment after military service. This type of program will contribute to talent retention by creating opportunities for top

performers that enhances their skills and provides for future opportunity.⁵³

Fostering a Work/Life Balance

Recent personnel shortages, maintenance issues, and fiscal constraints have increasingly required Marine pilots to do more with less. Therefore, duties other than flying have become priority; flying has taken a back seat to squadron ground jobs. Currently, there are only a handful of non-aviator officers in a Marine aviation squadron, typically only the Intelligence Officer, Maintenance Material Control Officer, and the Avionics Officer. All other departments in the squadron are supervised by aviators. The burden of maintaining flight qualifications while fulfilling the duties and responsibilities of a ground job, many of which are major leadership positions in the squadron, has many Marine pilots seeking a better work/life balance.

Military aviation is an extremely busy career, and there is not much that can be done to reduce the requirements on an operational flying squadron but assigning non-aviators to operational squadrons as assistant operations officers and maintenance shop officers would provide a better work/life balance for some pilots. The same issue was noted as affecting retention in the U.S. Air Force. Currently, the Air Force is taking steps to “revitalize squadrons” by reducing of additional duties for Airmen across the Air Force.⁵⁴ A comprehensive review conducted in 2016 resulted in the elimination, reassignment, or reduction of nearly half of the additional duties identified under Air Force Instruction 38-206, Additional Duty Management. Leadership development among squadron officers is paramount; therefore, Marine pilots need to be in squadron leadership positions to develop as leaders. The answer is not to do away with a pilot’s responsibility for day-to-day squadron responsibilities, but rather assign non-aviators as assistants to reduce the mounting burden of some ground jobs.

Another possible method of providing a work/life balance for aviators is to grow the

Marine aviation community. More pilots will therefore translate to more dwell time for aviators. An often-discussed option is the implementation of a flying warrant officer program similar to that of the U.S. Army. This program could serve to reduce the operational tempo of commissioned aviators and provide aviation opportunities for those that just want to fly. A Marine Corps flying Warrant Officer program adequately addresses some of the concerns that are drawing Marine aviators from service and should be explored further to determine the impact it might have on Marine aviation and the Marine Corps as a whole.

A final option would be the development of a Limited Duty Officer (LDO) program for pilots. This program would be very similar to a flying warrant officer program but would be more easily implemented, as there would be little difference in the training and education standards of LDOs and unrestricted officers. The LDO program would allow pilots to remain in active flying status without the requirements of B-billets, PME, and other assignments that remove aviators from flying duties. Again, this program would need to be further explored to identify the impact that it would have on certain aviation communities and the Marine Corps.

Conclusion

The internal maintenance related issues presented have made a career in Marine aviation much less appealing in recent years. All the while, external factors such as changes to FAA regulations, increased demand for experienced pilots, and ever-increasing pay and benefits combine to create unprecedented employment opportunities for military trained pilots in civil aviation. To keep the impending pilot shortage from negatively affecting Marine aviation for years to come, the Marine Corps must renew their investment in its aviation professionals. Lessons from corporate America's proven talent retention strategies are key in order to retain quality Marine pilots.⁵⁵ Cooperation between the civil aviation industry and the military is

required provide career opportunities for pilots leaving the service after a long and successful military career. Finally, new and innovative programs should be implemented to promote job satisfaction and foster a work/life balance to retain highly trained and talented personnel. Failure to properly address the current manpower gap through innovative retention strategies will lead to a loss of a generation of Marine aviators.

Endnotes

¹ According to an informal survey conducted in February, 2018 of active duty, reserves, separated, and retired Marine aircrew, 75% consider economic opportunity in the civil sector a contributing factor, major concern, or the most prevalent factor in their decision to remain in Marine aviation service.

² Karen Parrish “Congress Probes Military Pilot Shortage” *Department of Defense News, Defense Media Activity*. <https://www.defense.gov/News/Article/Article/1135200/congress-probes-military-pilot-shortage>. (2017).

³ Congressional Armed Services Sub-committee on Military Pilot Shortage. (Washington D.C. 2017).

⁴ The minimum active duty obligation is six years if trained as a helicopter pilot and eight years if trained as a fixed wing pilot.

⁵ MARADMIN 004/17 (United States Marine Corps, 2017).

⁶ MARADMIN 039/18 (2018).

⁷ United States Marine Corps Aviation Plan (United States Marine Corps, 2018).

⁸ Congressional Armed Services Sub-committee on Military Pilot Shortage. (Washington D.C. 2017).

⁹ Ibid. Lt. Gen. Jon Davis, Deputy Commandant for Aviation explained that many of the Super Stallion’s problems can be traced to the decision not to do a full reset after years of fighting in Afghanistan. Davis stated, “We were trying to get maximum readiness at the time, and the best way to do that was to do it in [Afghanistan]... We made a mistake.” To compound this problem, military spending dropped just as aircraft were returning from years of combat operations in harsh environments during the War on Terror, leaving the Marine Corps’ aviation fleet in a state of disrepair.

¹⁰ Aeroassurance.com. “USMC CH-53E Readiness Crisis and Mid-Air Collision Catastrophe.” (2016).

¹¹ Eric Adams. “How on God’s Green Earth Is the B-52 Still in Service?” (2016).

¹² Dan Matthews. “How does the Chinook helicopter keep flying after all these years?” *The Telegraph* (2016)

¹³ Sydney J. Freeburg Jr. “Navy, Marine F-18s in ‘Death Spiral’ As Readiness Plummets.” *Breaking Defense*. (2017).

¹⁴ Jeff Schogol. “Squadron in crisis: Total dysfunction preceded Marines’ deadliest crash this year.” *Marine Corps Times*. (2016).

¹⁵ Lucas Tomlinson & Jennifer Griffin “Budget Cuts Leaving Marine Corps Aircraft Grounded.” F-18 production was halted in 2001.

¹⁶ Carl Forsling. “What The Latest Marine Aviation Mishap Says About Pilot Readiness.” *Task and Purpose*: (2016).

¹⁷ According to www.AOPA.gov “*Currency and Proficiency*” Being current under the Federal Aviation Regulations means that you have met the requirements to act as a pilot in command of an aircraft within a certain time period. Being proficient means fully competent in any art, science, or subject. You can be current without being a proficient pilot, but if you are proficient, most likely you have also met the currency requirements to get to that point.

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- ¹⁸ Naval Safety Center FY2017 Aviation in Review (2017).
- ¹⁹ Naval Safety Center FY2017 Aviation in Review (2017).
- ²⁰ Naval Safety Center. Aviation Safety (2017).
- ²¹ Carl Forsling. "What The Latest Marine Aviation Mishap Says About Pilot Readiness." *Task and Purpose* (2016).
- ²² Aeroassurance.com. "USMC CH-53E Readiness Crisis and Mid Air Collision Catastrophe." (2016).
- ²³ Jason Paladino & Zachary Stauffer. "Pilot Error, Lack Of Training Blamed For Helicopter Crash That Killed 12 Marines." *The Huffington Post*. (n.d.).
- ²⁴ Carl Forsling. "What The Latest Marine Aviation Mishap Says About Pilot Readiness." *Task and Purpose*: (2016).
- ²⁵ Jeff Schogol. "Squadron in crisis: Total dysfunction preceded Marines' deadliest crash this year." *Marine Corps Times*. (2016).
- ²⁶ (Redacted) United States Marine Corps. (2016) Command Investigation into the Facts and Circumstances Involving the Aviation Mishap of (2) CH53E Super Stallion Helicopters on 14 January 2016 off the Northern Coast of Oahu.
- ²⁷ Ibid.
- ²⁸ Carl Forsling. "What The Latest Marine Aviation Mishap Says About Pilot Readiness." *Task and Purpose* (2016).
- ²⁹ Federal Aviation Administration. www.FAA.gov. (2013).
- ³⁰ Ibid.
- ³¹ (Air Facts Journal, 2014) The new rule creates the Restricted ATP (R-ATP) qualification, allowing a pilot to serve as an airline first officer before reaching the necessary 1,500 hours for a full, unrestricted ATP. The R-ATP offers credit for specified education and training. The restricted ATP certificate simply restricts how many hours one must have as a pilot from 1,500 total to 750 hours total for military trained pilots, 1,000 hours total for students with a 4 year aviation degree or 1,200 hours total for students with a two year aviation degree. These restrictions are airline specific, and do not state exactly how many military flight hours one must obtain to begin flight training with a civilian aviation company.
- ³² Jon Ostrower. "The U.S. Will Face a Staggering Shortage of Pilots." *Money.CNN*. (2017).
- ³³ Ibid. This figure includes vacancies due to pilots reaching mandatory retirement age.
- ³⁴ Ibid.
- ³⁵ Jon Ostrower. "The U.S. Will Face a Staggering Shortage of Pilots." *Money.CNN*. (2017).
- ³⁶ Robert Fucci, "Which Airlines Offer the Best Benefits Packages." *Monster.com* (n.d.)
- ³⁷ S. Vijayalatha & G. Brindha. "Emerging Employee Retention Strategies in the IT Industry." (Bharath University, Chennai. 2015).
- ³⁸ Jon Ostrower. "The U.S. Will Face a Staggering Shortage of Pilots." *Money.CNN*. (2017).
- ³⁹ According to an informal survey conducted in February, 2018 of active duty, reserves, separated, and retired Marine aviators, 87% stated that other services, particularly the U.S. Air Force, do a better job of retaining talent by

providing incentives for continued aviation service.

⁴⁰ Managing for Employee Retention. (Society for Human Resource Management, 2017).

⁴¹ Marc Elliott, Kanika Kapur & Carole Gresenz. "Monitoring the Departure of Military Pilots from the Services for the Office of the Secretary of Defense." (Santa Monica: The Rand Corporation. 2004).

On 27 February, 2018 the Marine Corps updated the ACIP pay scale to better incentivize aviators to remain in aviation service. MARADMIN 128/18. (2018) Marine Corps released MARADMIN 128/18 on February 26, 2018 that readjusted the ACIP rates that closely align with the recommendations presented in this paper.

⁴² The estimated cost for basic military flight training is approximately \$6 million per pilot. According to an informal survey conducted in February, 2018 of active duty, reserve, separated, and retired Marine aviators, 85% stated that the current amount of ACIP does not sufficiently incentivize continued aviation service.

⁴³ Typically, an aviator spends the first one to two years following flight school as a student in the Fleet Replacement Squadron and later as a copilot in their first squadron. During this time, aviators are learning to fly their fleet aircraft, and are under the supervision of an aircraft commander and/or flight leader.

⁴⁴ United States Marine Corps Aviation Plan (2018).

⁴⁵ Thomas Grell "Focus on the Marines." *Proceedings Magazine*. (U.S. Naval Institute, Annapolis 2016).

⁴⁶ MARADMIN 614/17. (2017)

⁴⁷ Managing for Employee Retention. (Society for Human Resource Management, 2017).

⁴⁸ Ibid.

⁴⁹ Thomas Grell "Focus on the Marines." *Proceedings Magazine*. (U.S. Naval Institute, Annapolis 2016).

⁵⁰ According to an informal survey conducted in February, 2018 of active duty, reserve, separated, and retired Marine aviators, 82% cited *family concerns/desire for more stability* a contributing factor, major concern, or the most prevalent factor in their decision to remain in Marine aviation service. This was the most influential factor that influenced the decision to continue service of those surveyed.

⁵¹ In general, a pilot will reach 750 flight hours within the first two to three years at his or her first squadron. This will equate to approximately three to four years of aviation service as a fixed wing or helicopter pilot. Therefore, a helicopter pilot with 750 flight hours will generally have two to three years of obligated service remaining, and a fixed wing pilot will generally have four to six years of obligated service remaining, depending on the varying lengths of FRS training.

⁵² Although the pilot will not be conducting advanced military training and operations in a civilian program, there is something to be gained from every bit of flying experience a pilot receives. Pilots routinely say that they learn something from every flight, no matter how benign the flight may be.

⁵³ The negative aspect of this type of program would be an absence of training and experience as a MAGTF officer through traditional B- billets. Due to this, these pilots would likely be less competitive for promotion than their peers.

⁵⁴ Alyssa C. Gibson , Secretary of the Air Force Public Affairs (Air Force News 2017).

⁵⁵ Managing for Employee Retention. (Society for Human Resource Management, 2017).

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Appendix A. Pilot Retention Survey

Part 1

1. I am currently

- A. Active Duty
- B. Reserves
- C. Separated from service
- D. Retired

2. Current rank/highest rank obtained

- | | |
|-----------------------|--------------|
| A. Captain | E. Staff NCO |
| B. Major | F. Other |
| C. Lieutenant Colonel | G. N/A |
| D. Colonel | |

3. If you are separated/retired, did you complete an exit survey upon departing the USMC?

- A. Yes
- B. No

Comments:

4. Did/do you feel that your skills and training are/were used appropriately during your aviation service?

- A. Yes
- B. No

Comments:

5. Did/do you feel that you are/were appropriately compensated for your level of skill?

- A. Yes
- B. No

Comments:

6. Did/do you feel that you are/were appropriately compensated for the level of risk that you accept(ed) in training?

- A. Yes
- B. No

Comments:

7. Did/do you feel that you were appropriately compensated for the level of risk that you accept(ed) in combat operations?

A. Yes

B. No

Comments:

8. Did/do you feel as if you receive(d) enough training to become proficient in all assigned mission profiles?

A. Yes

B. No

Comments:

9. Did/do you have ample opportunity for advancements in qualifications and career enhancing assignments?

A. Yes

B. No

Comments:

10. If you are currently in service, do you think that there are fewer opportunities for advancements in qualifications and career enhancing assignments now than there were before (5-10 years ago)?

A. Yes

B. No

C. N/A

Comments:

11. Did/do you feel that you receive(d) enough flight time to remain proficient?

A. Yes

B. No

Comments:

12. Did/do you feel that you are/were required to operate outside your level of training and proficiency?

A. Yes

B. No

Comments:

13. Are/were you discontent with the state of affairs in military aviation (Maintenance issues, funding, flight hours, opportunity, flight pay, etc.)?

A. Yes

B. No

Comments:

14. Did/do you think that other services do a better job of retaining talent/providing incentives for continued aviation service?

A. Yes

B. No

Comments:

15. Did/do maintenance issues effect your ability to fly enough to be proficient?

A. Yes

B. No

Comments:

16. Did/do you feel that budget cuts affected your ability to fly and progress as a pilot?

A. Yes

B. No

Comments:

17. Did/do you feel that Marine aviation was/is unsafe due to decreased pilot proficiency?

A. Yes

B. No

Comments:

18. Did you feel that Marine aviation was/is unsafe due to maintenance problems?

A. Yes

B. No

Comments:

19. If you have retired/separated, was this due to increased job opportunities, compensation, and benefits for military aviators in the civil aviation industry?

A. Yes

B. No

Comments:

20. Did/do you feel that you are/were sufficiently incentivized to remain in aviation service?

A. Yes

B. No

Comments:

21. Did/do you think that the current amount of flight pay sufficiently incentivizes continued aviation service?

A. Yes

B. No

Comments:

22. Were/are you ever in doubt as to the safe operating condition of your aircraft?

A. Yes

B. No

Comments:

23. If the Marine Corps were to/had provide(d) an opportunity to obtain civilian qualifications that would make you more competitive in civil aviation after retirement (Fixed wing multi-engine training/airline transport pilot certificate), would this (have) influence(d) your decision to get out of the USMC?

A. Yes

B. No

Comments:

24. What is the most important thing that the Marine Corps could do to appropriately incentivize continued aviation service?

25. Did you have an additional duty that detracted from your readiness/proficiency?

A. Yes

B. No

Comments:

Part 2

On a scale of 1-5, with 1 being the least influential factor and 5 being the most influential factor, to what extent do/did the below factors influence your decision to continue service?

26. Family concerns / Desire for more stability

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor

Comments:

27. Too little flying / Reduced flight hours / Reduced pilot proficiency

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

28. Too many assigned tasks unrelated to flying (Ground jobs, administrative burdens, etc.)

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

29. B-billets (long periods of time away from flying)

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

30. Diminishing opportunities / lack of career enhancing qualifications / assignments

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

31. Lack of work/life balance / Quality of life outside USMC

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

32. Economic opportunity in civil sector

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

33. Aging aircraft fleet

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

34. Budgetary constraints

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

35. Marine Aviation did not meet expectations / discontent with quality of service

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

36. Safety concerns / Increased mishap rates

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments:

37. Not enough flight pay / Lack of bonuses

(1) No factor (2) Somewhat of a concern (3) A contributing factor (4) A major concern (5) Most prevalent factor Comments

No further questions.