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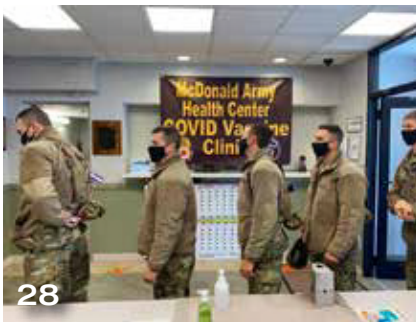
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Contents

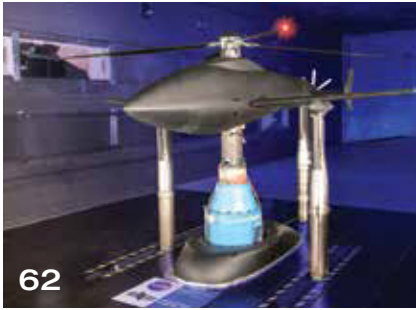
December 31, 2021, Vol. 70, No. 12

TO THE FIELD

- 10 Army Aviation Branch Chief's Corner**
By MG David J. Francis
- 14 Program Executive Officer Aviation Update**
By BG Robert L. Barrie
- 18 PEO Aviation Command Chief Warrant Officer Update**
By CW5 Travis Dixon
- 20 Sergeant Major of the Program Executive Office**
By SGM R. Woody Sullivan
- 24 Reserve Component Aviation Update**
By COL Joseph Bishop
- 26 Combat Readiness Center Update**
By LTC Randy James
- 28 128th Aviation Brigade Update**
By CW2 Stephen Daniels
- 30 CCDC AvMC Tech Talk**
By Mr. David Cripps
- 32 Ask the Flight Surgeon**
By CPT (Dr.) R. John Paul Gingerich

SPECIAL FOCUS — Industry Support & Challenges

- 34 Dependable Power for Speed and Range to Support Future Vertical Lift**
By Mr. George H. McLaren
- 38 Future of Fixed Wing Aviation & The Bridge to Get There**
By Dr. Eldon "Pete" Franks
- 40 The Eagle Has Landed**
By Scott Emerine



62



70



78



85



98

Contents

December 31, 2021, Vol. 70, No. 12

SPECIAL FOCUS - Industry Directory

- 42 2021 Industry Partners Directory -**
ARMY AVIATION Magazine's original directory of current contact information for year round reference to the industry partners of the Army Aviation team.

SPECIAL FOCUS — Science & Technology/Research & Development

- 58 It Is A Great Time To Be In Army Aviation!**
 By Mr. Jeffery Langhout
- 62 Army Aviation S&T - Forging the Future through Collaboration & Integration**
 By Mr. Carvil E.T. Chalk
- 66 The Changing Face of Risk**
 By Mr. Chris Hodges and Mr. Dave Cripps
- 70 Powering Flight: The Aviation Turbine Engines Project Office Update**
 By COL Roger D. Kuykendall and Cindy Mitchell

SPECIAL FOCUS — Future Vertical Lift

- 74 Future Ecosystem thru Partnerships, Technology Maturity and Experimentation**
 By Mr. Dan Bailey

SPECIAL FOCUS — 2021 Cribbins Wrap Up

- 78 2021 Cribbins Wrap Up - First Live AAAA Symposium Since 2019!**
 By CW5 Adam Jarvis

FROM THE FIELD

- 76 CCAD Embraces Additive Manufacturing – A New Pipeline For Parts**
 By Ms. Kathleen Pettaway-Clarke

DEPARTMENTS

AAAA NEWS		ARMY AVIATION COMMUNITY NEWS	
AAAA President's Cockpit.....	8	Advertisers Index	93
AAAA VP Chapter Affairs	84	Art's Attic	98
Chapter OSM News	85	Briefings	6
AAAA VP Membership	86	Calendar	93
New Members	87	Enlisted Aviation Soldier Spotlight	22
AAAA Family Forum	88	Hall of Fame.....	99
AAAA Legislative Report.....	94	Historical Perspective	82
AAAA Scholarship Foundation Donors..	92	Industry News.....	93
		People on the Move	95

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Briefings ▶ Late Breaking News - Announcements

Albright to Chair Defense Policy Board



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On Nov. 17, the Department of Defense swore-in former Secretary of State Madeleine K. Albright as the chair of the Defense Policy Board. Albright is the first chair of the Defense Policy Board appointed since the completion of Secretary of Defense Austin's zero-based review of all DoD advisory boards and committees. As the chair of the Defense Policy Board, she will lead a group of distinguished members that provides the Secretary of Defense and Deputy Secretary of Defense with independent, informed advice and opinions concerning matters of defense policy in response to specific tasks from the Secretary of Defense, the Deputy Secretary, and the Under Secretary of Defense for Policy.

Government Shutdown Avoided Thru Mid-Feb.



AP/REX PHOTO

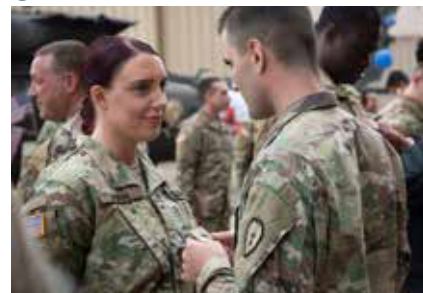
The House and Senate approved a stopgap spending bill on Dec. 2, sending to the White House a measure to delay a government shutdown until at least mid-February. Once signed by President Biden, the 10-week continuing resolution will keep the government operating through Feb. 18, 2022. There is no agreement yet on the top-line spending totals that would make up the defense and non-defense portions of the fiscal 2022 budget.

Federal Contractor Vaccination Deadline Now Jan. 18

Covered contractor employees must be fully vaccinated no later than January 18, 2022 unless they are granted an exemption, according to updated guidance from the Biden administration's Safer Federal Workforce Task Force released on Nov. 10. After that date, all covered contractor employees must be fully vaccinated by the first day of the period of performance on a newly awarded covered contract, and by the first day of the period of performance on an exercised option or extended or

renewed contract when the clause has been incorporated into the covered contract. The task force said that "people are considered fully vaccinated for COVID-19 two weeks after they have received the second dose in a two-dose series, or two weeks after they have received a single-dose vaccine." This means the final dose must have been taken by Jan. 4 to meet the Jan. 18 deadline.

Temporary Promotions for All NCOs Regardless of PME



U.S. ARMY PHOTO BY CPT JERAMIE BRANCH

Beginning Jan. 1, the Army will waive professional military education requirements and extend temporary promotions to all otherwise-promotable noncommissioned officers, Sergeant Major of the Army Michael Grinston and Army personnel officials announced on Nov. 1. For senior NCOs, the Army will select soldiers monthly for promotion from the order of merit lists – regardless of whether they've completed their required PME for promotion. For junior NCOs, the promotions will function similar to previous temporary promotion authorities for troops in combat zones who may not be able to attend their PME courses. Otherwise-qualified troops who have promotion points above the cut-off score for their military occupational specialty will receive temporary promotions. The temporary promotion authority will remain in place through Dec. 31, 2022 and troops will have one year to complete their PME after receiving their temporary promotion, or else they will revert to their previous rank. Soldiers who lose their rank will not have the increased pay recouped.





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Back on Track & Celebrating the Holidays

I trust that everyone enjoyed a wonderful holiday season ... seems like Santa Claus sent me all the bills. Maybe you got some too. I hope you were able to take some time and celebrate the holidays and to give thanks for all that we have and especially our families who have stood with us through 20 years of war, the Covid pandemic, and the associated personal challenges over this past year.

For those of you out there keeping us safe, we appreciate the sacrifices you make for our country and our Army. We know you missed your families, and they missed you. God bless you for what you do every day.

In November, we hosted our first in-person event in over two years. The Joseph P. Cribbins Training, Equipping and Sustainment Symposium in Huntsville, Alabama was a complete success thanks to the support of our senior army aviation leadership and our industry partners. We had over 2,000 in attendance, and I am very happy to say... mask-less! It was great to see you all in person again. From the chapter sponsored golf tournament, to the Early Bird Opening, to the National Awards and briefings, to the exhibit hall and the amazing Hall of Fame Banquet, we are back on track and caught up on our awards, recognition, and our Hall of Fame Inductions. Our AAAA goal is to continue to improve the Cribbins symposium while keeping it intimate and accessible.

A lot was accomplished from the first day National Executive Board and Scholarship Board meetings, to catching up on an unbelievable number of over 60 awards that we had not been able to present in 2020 and 2021 due to the cancellation of our Summits and even the 2020 Cribbins. Two classes of all National Awardees like the Soldier of the Year, Unit of the Year, Aviator of the Year were honored along with two classes of outstanding Hall of

Fame Inductees. It makes us all proud to recognize the accomplishments of all these great Soldiers, civilians, and industry partners. Take a minute and watch the videos of these events, especially the Hall of Fame. The depth of feeling and emotions in that room were truly remarkable.

None of this could have happened without the support of our industry partners. Outstanding Industry participation with over 200 exhibiting companies facilitated critical information sharing amongst the aviation community. Thank you AAAA Corporate members! Special thanks to the entire Six-Pack Plus One who attended as well as our Day One and Two Keynoters, LTG Erik Peterson, Deputy Chief of Staff, G8 and LTG Thomas Todd, Deputy Commander of Army Futures Command. MG Dave Francis, MG Todd Royar, BG Rob Barrie, BG Clair Gill, BG Phil Ryan, and MG Wally Rugen briefed every aspect of the Army Aviation Enterprise from training, to sustainment, acquisition, personnel, special operations and future vertical lift. It was amazing to see all the interactions taking place around the rooms, in the halls and exhibit spaces. Having all of BG Barrie's program managers there every day really put the icing on the cake. I was so proud that AAAA, a professional and neutral platform, can facilitate this kind of opportunity that fosters these kinds of exchanges which ultimately of course benefit all our Soldiers.

Speaking of Soldiers, what a delight it was to visit with all our young awardees and families at the informal Awardee Dinner on Monday evening. I wish you could all have been there to hear their stories and experience their enthusiasm for our Branch, the Army and our great nation.

Enough about Cribbins. Now I would like to update you on a few initiatives that AAAA is doing to improve, revitalize, and grow our professional organization.

As you are all aware, I vowed to visit all our chapters while your president, seeking feedback and ways that we can better support the chapters and foster their growth. Based on the feedback, we are creating portals for each of the chapter officer positions. Just this month, we launched the first chapter officer training for treasurers using our new online learning platform. This will enable chapters to have continuity when transitioning from one officer to another. We look forward to launching a training course for each chapter officer position throughout 2022.

During our National Executive Board (NEB) meeting, we kicked off a pilot program to formalize our awards selection process. COL (Ret.) Scott Schisser did an amazing job putting together a process and a selection board that will ensure proper representation and experience across all compos and aviation specialty areas with the goal of equity and fairness for each award category. We will run this new process for two years and then reevaluate/refine it for implementation/adoption.

Prior to this NEB meeting, we had separate Strategic Planning and Strategic Communications Committee meetings. To ensure continuity of effort and messaging, we sought and were granted approval by the NEB to combine these under the leadership of COL (Ret.) Shelley Yarborough. Shelley is already off and running; we are blessed to have her leadership and energy.

Also during the NEB, we voted to appoint two great logisticians and a

President's Cockpit continued on page 73



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► Army Aviation Branch Chief's Corner

Future Vertical Lift Program Critical to Achieving Strategic Objectives

By MG David J. Francis



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The Future Vertical Lift (FVL) program is a critical component of a much larger endeavor to meet the challenges of the future operational environment.

The design and development of our FARA and FLRAA platforms ensure the Army, as part of the joint force, can rapidly converge effects at the time and place of our choosing across all domains to present multiple dilemmas to our adversaries. Army formations, operating as part of the Joint Force, will focus on the penetration and dis-integration of enemy anti-access and area denial systems, then exploit the resulting freedom of maneuver to achieve tactical and operational objectives.

Aviation is a vital component of Army multi-domain operations and is the reason FVL is among the top six modernization priorities. The requirement for distributed operations, decentralized execution, and operations in complex terrain create an increased reliance on network-enabled responsive aircraft. The capability to integrate with the total Army is being designed into the airframes of the future so we can operate in a combat environment that will require increased speed, range, lethality, survivability, and sustainability. FVL will enable the Joint Force to maneuver from long distances (Operational and Strategic) with the ability to rapidly converge forces to penetrate the multiple layers of stand-off employed by the threat, dis-integrate anti-access, area-denial defenses, and exploit this advantage to

achieve strategic objectives.

The **Future Attack Reconnaissance Aircraft** will provide the commander a capability to extend reconnaissance reach to better see and understand the depth of the battlefield, support operations from relative sanctuary, and reduce the enemy's freedom of action. Filling this critical reconnaissance gap for the Army, FARA and its eco-system (ALE, LRPM) works through a resilient meshed network to provide expedited targeting information for the common operating picture, long range precision fires, and other Joint Forces. The network enables a shortening of the kill chain timeline for effective sensor-to-shooter target prosecution.

Future Long Range Assault Aircraft (FLRAA) formations will provide theater commanders with options to conduct air assaults or air movements at distance to insert key reconnaissance and surveillance assets, secure key terrain and facilities, withdraw light forces from untenable positions, and help sustain the force with the movement of key equipment, supplies, and personnel. FLRAA formations can exploit maneuver opportunities created by penetrations or maneuver outside IADS coverage to areas with little or no enemy forces. This strategic vertical lift capability will provide the Joint Force with additional speed, range, and agility and augment our enduring fleet to supply Joint ground units with a long range and higher speed that will increase survivability.

We are leveraging the U.S. Army Concept for Aviation approved by Army Futures Command as a guide to developing future training and doctrine. Our FM 3.04 is keeping abreast with FM 3.0, capturing these concepts into doctrine and emphasizing the Division as the unit of action. The movement towards modernizing our training both institutionally and



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operationally is well underway to prepare our Soldiers and leaders to operate with the additional speed and agility, advanced integrated multi-use sensors, extended range munitions, and electronic warfare allowing our FVL to generate lethal overmatch.

The future Operating Environment will be more lethal. The detection and observation of our forces will extend well beyond the purely physical into all domains - land, air, maritime, space, and cyberspace - and forces seen in any domain will be at risk. Our FVL aircraft will add lethality, range, speed, payload, survivability, reliability, and reduce the logistical footprint from our present capability. I am excited and proud of the development of our FVL programs and know these aircraft will provide the best capability for our aviators to compete, fight and win in the future.

Above the Best!

MG David J. Francis is the Army Aviation branch chief and commander of the U.S. Army Aviation Center of Excellence and Fort Rucker, AL.

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PEO Aviation is Primed for Open Systems Success

By BG Robert L. Barrie



Within PEO Aviation, I am proud of the focused progress and collaboration underway by teams of talented, motivated people who are creating all of the elements necessary for the services to maximize the value of Modular Open Systems Approaches (MOSA).

Incorporating Open System Architectures (OSA) into defense system architectures continues to gain traction at a rapid pace across DoD and within PEO Aviation and is a significant requirement on all Army platforms and systems.

The DoD 5000 Acquisition MOSA Policy is driving development of multiple open standards and in many cases the standards may overlap each other by instantiating different approaches to standardization of sensor and mission processor systems. PEO Aviation is adopting OSA by leveraging the Sensor Open Systems Architecture (SOSA) Standard and C5ISR/EW Modular Open Suite of Standards (CMOSS) for tactical communications and mission processing.

The on-going convergence of CMOSS and SOSA has driven development of multiple fielded systems and will likely influence the roadmaps of PMs across the DoD as they aim to take

these open systems to the warfighter. The teams from PEO Aviation and Combat Capabilities Development Command (CCDC) C5ISR are working together to maximize collaboration, identify gaps, resolve overlaps, establish verification and validation methodologies, and provide guidance on how to integrate current and future open standards for both air and ground platforms and systems. Another example of constructive inter-organization collaboration is how PEO Aviation, CCDC, PEO C3T, and PEO IEW&S are moving forward with the CMOSS Mounted Form Factor (CMFF) Acquisition IPT.

CMOSS and SOSA Arise – Standard Arising & Merging

We are actively discussing with PEO C3T the standards that include requirements that point to Future Airborne Capability Environment (FACE) Technical Standard,

Vehicular Integration for C4ISR/EW Interoperability (VICTORY), Modular Open RF Architecture (MORA), Open Hardware and many others that establish an architecture inclusive of key interfaces and services. SOSA and CMOSS recently published their first released standard SOSA v1.0 marking a significant milestone where the Tri-Services and a large swath of DoD contractors worked together to develop requirements that can be agreed upon for all aspects of vehicle systems development and design. These two open standard sets have recently taken a huge leap regarding integration now that the VICTORY and MORA standards now fall under the SOSA Technical Working Group eliminating the potential for future overlaps.

VICTORY addresses Ground Vehicle system interoperability. PEO Aviation and the CCDC C5ISR Directorate are aiming to heavily leverage it along with other CMOSS standards for future avionics systems development. These include tactical communication systems such as Blue Force Tracking, Advanced Teaming, Link-16 as well as mission processing programs such as the Aviation Mission Common Server (AMCS) using the C5ISR Modular Open Suite of Standards (CMOSS)



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Mounted Form Factor (CMFF). AMCS prototypes use VICTORY messages for time and position data in a limited implementation, and efforts like this are paving the way for VICTORY adoption in future avionics system development.

In addition to the convergence of open hardware architectures, we are seeing leaders of OSA agree on the need to align the open software standards as a focus for PEO Aviation, PEO C3T, and the CCDC C5ISR Directorate.

Verification & Validation (V&V)

Verification and validation of open standards can be performed at multiple levels, but our teams recognize that it is imperative to establish a baseline on what is acceptable for the organization. PEO Aviation is working to identify the best approach by evaluating the current methodologies and identifying the optimal processes for V&V. Here are some examples of OSA verification and validation that I see as converging on best practices for V&V activities:

- PEO Aviation's MOSA Transformation Office is continuing to develop and refine policy and governance for enforcing conformance for target modularity and openness requirements and standards.

- The Open Group's SOSA consortium is establishing their own SOSA™ Conformance Certification Program where test laboratories are able to become Verification Authorities, and a webinar describing this that can be found at the SOSA website.

- PEO Aviation's Combat Aviation Brigade Aviation Integration Laboratory (CABAIL) is working with all PMs and organizations to test and demonstrate these newly developed technologies in relevant, platform representative environments so that appropriate improvements and enhancements get identified early in the development process.

- Industry is developing various conformance test suites for hardware and software systems throughout the development process.

CMOSS Systems & Events

I, along with MG Collins, PEO C3T, are very pleased with the multiple examples of CMOSS open systems and some are a first of their kind with inclusion of CMOSS OpenVPX, VICTORY, and MORA in an airborne system. Multi-Function Electronic Warfare (MFEW) Air Large recently was flight tested and

utilizes CMOSS to enable rapid cyber/EW technique development and deployment; interoperability of hardware and software across airborne and ground platforms; prompt insertion of new hardware technology; and significant reduction of total ownership costs. As a result, MFEW-AL systems will be able to rapidly adapt to a continuously evolving threat that optimizes support for warfighters.

Other successful testing events include the Network Modernization Exercise (Net Mod X) 2021, which focused on 40 technologies with converged automated and protected communications that enable multi-domain lethality. The convergence of these radio, computing and PNT technologies in a CMOSS form factor on a Stryker platform proves our collective efforts are yielding tangible progress.

PEO Aviation Commitment

As CMOSS and SOSA become requirements on PEO Aviation systems, our organization will seek to evaluate platforms and systems on their adoption by developing targeted OSA focused roadmaps and other grading criteria for each program.

I believe that PEO Aviation and CCDC C5ISR communities will converge on the most impactful consolidated grouping of open standards for hardware, software and integration. PEO Aviation remains resolute in the commitment to modernize all aviation platforms and systems with avionics and mission systems based on these CMOSS, SOSA and FACE standards. Our focus is on all mission systems, but initially the team is working avionics systems that will significantly enhance both voice and digital air to ground communications, greatly enhance the efficacy of the common operating picture systems and enable even greater advanced teaming and networking capabilities than we currently field.

I firmly believe that this is the right approach to pursue for our warfighters from an operations, maintenance and future upgrades perspective. This approach is a path of success that further enhances combat overmatch technologies on schedule and within the increasingly constrained budgets. Will you join us?

BG Robert L. Barrie is the Army Program Executive Officer, Aviation at Redstone Arsenal, AL.

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Innovating for Army Aviation

By CW5 Travis Dixon

The Army is faced with a complex and evolving battle space that is changing in ways that were unimaginable just a few years ago. We face an array of threats from near-peer competitors that have not been seen since before the fall of the Berlin Wall.

Grave threats are appearing in previously unknown or uncontested domains, such as cyber and space. In this environment, there can be no complacency. We must find innovative solutions to successfully meet these threats.

Innovation is at the heart of the Program Executive Office, Aviation's mission. PEO Aviation is leveraging innovation to accelerate the development and delivery of state-of-the-art capabilities into the hands of the Soldiers



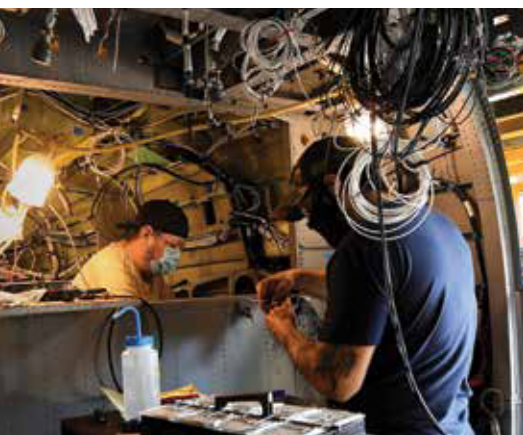
The interior of a UH-60V Black Hawk helicopter on display at a ribbon-cutting ceremony on Oct. 6, 2021, at the Eastern Army National Guard Aviation Training Site at Fort Indiantown Gap, PA. EAATS was the first unit in the Army – active duty, National Guard or Army Reserve – to receive the new variant, which includes an upgraded digital glass cockpit.

and commanders that need them. From digital engineering and testing to implementation of Modular Open Systems Approach standards to additive manufacturing, PEO Aviation is embracing emerging science and technology to change the way we do business in ways we never have before.

As the materiel developer for Army Aviation, the objectives set by BG Rob Barrie will only be successful through innovation. Sometimes the innovation is obvious, such as building the Future Vertical Lift Ecosystem, and sometimes it is not, such as building partner capacity. And in between, innovation is inevitable in keeping the current fleet relevant and ready. Everything about FVL is innovative—the platforms, the manufacturing techniques, the potential capabilities and the acquisition efforts. Innovation will help PEO Aviation bring these new and exciting capabilities to the battlefield.

By utilizing innovative strategies, the Multi-National Aviation Special Project Office and Assistant PEO International continue to grow as force multipliers in supporting our strategic partners and allies with options for rotary wing aircraft. In many cases the innovation lies less in the aircraft, but it is found in the acquisition techniques, delivery methods, training or sustainment and support packages. These relatively small offices help prepare our allies and partner nations for potential future conflict and provide them with the capabilities to respond to natural disasters and other crises.

When we are working to ensure the readiness and relevance of the enduring aviation fleet, the innovation rapidly becomes obvious after even a cursory examination of the newest model of seemingly common aircraft, the UH-60V. The ubiquitous UH-60 Black Hawk helicopter has been in service since the 1980s and there are more than



Corpus Christi Army Depot aviation electricians (left) Mike Lee and (right) Jonathan Lopez, take COVID-19 precautions and wear face masks as they work to install the electrical wiring harness on a UH-60V Black Hawk during reassembly.

2,000 of them currently in the Army inventory plus another 2,000 more flying for our allies and civilian variants worldwide. The innovators in the Utility Helicopter Project Office just fielded the first UH-60V in 2021.

L to V Conversion

The UH-60V was developed as a means to overhaul the UH-60L fleet. The overhaul process recapitalizes a UH-60L by adding a modern digital glass cockpit, converting an analog aircraft to a digital aircraft with similar functions and capabilities as the UH-60M.

The updated cockpit includes a certified GPS RNAV database and advanced flight planning and mission capabilities. This increases the pilot's situational awareness while reducing the workload, resulting in a more capable and safer aviation platform. The UH-60V is also the first Army aircraft to implement an open system architecture.

The UHPO delivered six UH-60Vs to the Pennsylvania Army National Guard, Eastern ARNG Aviation Training Site at Fort Indiantown Gap, PA. EAATS is the first unit equipped and organically assigned with the aircraft.

PEO Aviation collaborated with the

EAATS, National Guard Bureau, Directorate of Evaluations and Standardization, Army Capabilities Manager-Lift, Directorate of Training and Doctrine, and the Army Test and Evaluation Command to develop a holistic training support package that will enable units to conduct local training and qualify aviators to fly the new helicopters.

Corpus Christi Army Depot, Texas is converting the UH-60L aircraft to the UH-60V configuration. This supports the Defense Industrial Base, and the Army is able to deliver a modernized UH-60V for significantly less than the cost of a new aircraft by re-capitalizing the current legacy fleet.

The first tactical unit to be equipped with the UH-60V will be the 1-106th Aviation Regiment, Missouri ARNG, scheduled to be completed by the end of fiscal year 2022.

The Black Hawk will remain in the Army's inventory for the foreseeable future. Even with the Future Long Range Assault Aircraft first unit equipped in 2030 the Black Hawk will be performing its full range of missions. Our Soldiers are counting on us to provide the best possible capabilities for future operations and that is why innovating to make

the Black Hawk ready and relevant for multi-domain operations is so important.

Innovation is at the heart of the PEO Aviation mission. Whether it is for the future fleet, the enduring fleet or providing new capabilities for our partners, we are always looking for innovative ways to resolve the challenges in front of us.

Farewell

On a final note, I want to say farewell and thanks to my battle buddy, SGM Woody Sullivan. We've been around the world working to support the Soldiers in the field. His presence and unique perspective were instrumental in developing solutions for the many challenges that we faced. His persistence in adding NCOs to the PEO staff has been very successful and it has really paid off – both for the PEO and the NCOs.

Woody, I wish you the best in your retirement and I hope that our paths continue to cross in the future.

CW5 Travis Dixon, is the command chief warrant officer for the Program Executive Office Aviation at Redstone Arsenal, AL.



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► Sergeant Major of the Program Executive Office Aviation

Farewell

By SGM R. Woody Sullivan



As I prepare for my final few months with Program Executive Office, Aviation and gather my thoughts on my final article, I reflect on what a tremendous privilege it has been to serve as the first sergeant major of PEO Aviation.

An AH-64E Apache sits outside of a hangar at Hunter Army Airfield, Georgia, March 19. The 3rd Squadron, 17th Cavalry Regiment, 3rd Combat Aviation Brigade, 3rd Infantry Division, received their initial fielding of the new Echo Model helicopters from PEO Aviation's Project Manager Apache.

I am truly humbled and honored for the opportunity given to me to serve aviation Soldiers and our aviation branch the past three and a half years. To be able to take on this role and help place rapidly changing and maturing technologies into the hands of our Soldiers has made this the most gratifying job I have held during my 37 years of service to this great nation.

During my tenure as the sergeant major, I have observed a workforce that has displayed a commitment and excellence in their efforts to professionally field complex weapon systems to our Soldiers. This is reinforced daily by the efforts of every Soldier, civilian and support contractor throughout the entire PEO Aviation organization.

I would like to publicly thank PEO Aviation's non-commissioned officers. Their hard work and dedication have been an important part of the organizations overall success. MSG Sean Bailey, PM AMSA, SFC Richard Sosa, PM Cargo, SFC Jason Prunty, PM UAS, SFC Brandon Vilt, PM UAS, SFC Selwyn James, PM Apache, and SFC Stephen Jackson, PM Utility have each provided superb leadership and technical acumen in the performance of their duties. These outstanding NCOs are value added to our organization as they carry the PEO Aviation mission which is to "serve Soldiers and our nation by designing, developing, delivering and supporting



PEO Aviation's Project Manager Unmanned Aircraft Systems recently fielded RQ-7Bv2 Block III Shadow – Tactical Unmanned Aircraft System to 2-17th Cavalry Squadron, 101st Combat Aviation Brigade.

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► Enlisted Aviation Soldier Spotlight

Each month we will feature a past AAAA National or Functional Enlisted or NCO Award winner as part of our ongoing recognition of the Best of the Best in our Aviation Branch. The CY 2020 National winners were featured in the April/May AAAA Annual State of the Union issue.



Aviation Soldier of the Year, 2018

Sponsored by Bell

SPC Bradley C. Galloway

2nd Battalion, 160th Special Operations
Aviation Regiment (Airborne)
Fort Campbell, Kentucky

SPC Bradley C. Galloway demonstrated outstanding service as an MH-47G maintainer and fully mission qualified (FMQ) crew chief while assigned to Co. A, 2/160th Special Operations Aviation Regiment (SOAR). He was evaluated and earned designation as an FMQ crew chief in only 120 days – six months ahead of normal timelines; and is even more impressive since it came on the heels of his completion of the Army's Survival, Evasion, Resistance, and Escape (SERE) course and the Regiment's Basic Mission Qualification course for MH-47G Non-Rated Crew Members. Further, he won the battalion Soldier of the Year competition and went on to place second in the Regiment competition.

He completed most of his FMQ progression while deployed in support of worldwide contingency operations for a period of 90 days. While at home station, he conducted daily aircraft maintenance and participated in ten unscheduled major maintenance events. His contributions were essential to the company's operational readiness rate of 80% despite a tremendously high operational tempo and enabled a 100% mission success rate both CONUS and OCONUS.

SPC Galloway's selfless service, dedication and work ethic identify him as the 2018 Army Aviation Association of America Soldier of the Year.

of dedicated professionals who play a vital role in providing capability to our Aviation Soldiers.

I would like to express my sincerest appreciation to BG Rob Barrie for allowing me the opportunity to serve as his sergeant major. He embodies the true meaning of leadership and his genuine care and concern for his military personnel, civilians and contractors is extraordinary. BG Barrie, along with Mr. Pat Mason have provided exceptional leadership and support to me during my tenure at PEO Aviation and I am tremendously grateful to have had the privilege to serve with such phenomenal leaders.

Thanks to CW5 Travis Dixon for being the best battle buddy that a person could ask for. He is an extremely talented individual with a willingness to share knowledge and mentor those around him. I have learned so much from him during our time together at PEO AVN and I am very appreciative of his passion for Army Aviation.

I would like to welcome and introduce Command Sergeant Major Carlos Loeza, selected as my replacement earlier this year. CSM Loeza comes to PEO Aviation from 1st Air Cavalry Brigade at Fort Hood, Texas. Carlos will bring a perspective of many years of field experience to the position. He will be able to provide his unique insight to help determine the suitability of future programs intended to support commanders and Soldiers on the ground. I look forward to watching this organization grow under CSM Loeza's leadership, and I wish him the best of luck moving forward.

Please continue to reach out to CSM Loeza or Chief Dixon directly to answer any questions you may have regarding equipment fieldings, new equipment training teams, aircraft modification teams, or any PEO Aviation related capabilities. I wish the entire Aviation Enterprise my very best moving forward.

"One Team"

Woody

SGM R. Woody Sullivan is the sergeant major of the Program Executive Office, Aviation at Redstone Arsenal, AL.

Editor's Note: We at ARMY AVIATION thank SGM Sullivan for his strong support throughout his tenure at PEO Aviation and wish him and his wife, Kim, all the best in the future.

advanced aviation capabilities for operational commanders and our allies."

Providing an NCO's perspective in areas such as logistics, sustainment, training, maintenance and readiness is imperative in the development of essential aviation capabilities. SFC James told me, "I feel that my position provides a direct line for maintainers in the field, a voice at the table when new products are discussed."

Our NCOs play a vital role in equipment fielding teams, new equipment training teams and aircraft modification teams. Their expert advice on things such as Future Vertical Lift programs, Future Tactical Unmanned Aircraft System, CH-47F Block II, AH-64E V6, UH-60V, SCAMP II

and many, many more capabilities provides innovative solutions that meet immediate needs of the warfighter. These NCOs have been tremendous teammates and I wish them all the very best in their future endeavors.

As I prepare to depart PEO Aviation later this winter, I would like to take a moment to express my sincerest appreciation to the entire PEO Aviation workforce. It has been a tremendous honor to serve as your sergeant major the past three and a half years and I find it very difficult to put into words how much respect I have for the job you do each and every day for Army Aviation. I am honored and humbled to have had the pleasure to work in such an outstanding organization, comprised

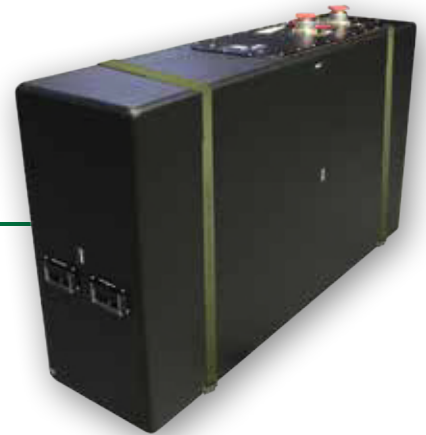
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Optimizing and Modernizing Army National Guard Light Utility Helicopter Capability

By COL Joseph Bishop

Establishing the security and support battalions (SSBN) fifteen years ago, as part of Army Aviation Transformation, and then equipping these battalions with the UH-72A Lakota aircraft has proven incredibly worthwhile for satisfying a niche Light Utility Helicopter (LUH) Army Aviation need.

The intent for the SSBN is to conduct LUH missions such as civil support, counter drug law enforcement support, rescue, medical evacuation, air command and control as well as incident, awareness, and assessment. Although most SSBN missions are conducted under United States Code Title 32 or National Guard State Active Duty, exceptions have been made for missions to support the Army under United States Code Title 10 Active Duty.

The six ARNG SSBNs are currently organized with a battalion headquarters, three standard flight companies of eight aircraft and one aeromedical evacuation company of eight aircraft. The LUH / UH-72A capability, a 212 aircraft fleet (operational / training), resides in 43 States, the District of Columbia, Puerto Rico, the Virgin Islands and Guam.

The integration of the UH-72A into the SSBNs beginning in 2008 allowed the ARNG to fully develop an LUH construct and build foundational expertise in the utilization and operational employment of the aircraft and organizations. Concurrent with aircraft fielding, the ARNG developed a SSBN UH-72A Mission Equipment Package (MEP) that augments the aircraft's capabilities and provides greater aircraft mission flexibility. The MEP development and procurement was a multi-organizational effort between Headquarters Department of the Army, National Guard Bureau, UH-72A Product Office and the States. The ARNG utilized the National Guard Reserve Equipping Appropriations to procure and modify one half of the 212

aircraft fleet with the MEP.

The ARNG conducted a post UH-72A aircraft fielding DOTMLPF (Doctrine, Organization, Training, Materiel, Leadership, Personnel and Facilities) review and identified three primary outcomes; first, modify the SSBN organizational design by adjusting the mix in aeromedical aircraft, second, rebalance the training aircraft footprint, and third, establish a UH-72A maintenance capability within the Theater Aviation Sustainment Maintenance Group (TASMG) organization. Additionally, the DOTMLPF review validated a need for updates to the aging MEP.

To address the three primary DOTMLPF outcomes, the Army approved a SSBN / TASMG Force Design Update (FDU). The FDU, when implemented in 2023, will generate a new SSBN Modified Table of Organization and Equipment (MTOE) with two standard flight companies of ten aircraft each, one standard flight company of eight aircraft and an aeromedical evacuation company with five aircraft. The new SSBN MTOEs allow for greater aircraft utility and now 45 states will possess LUH capability. The FDU will also generate a change to the TASMG MTOE that includes a UH-72A maintenance section. Each TASMG can develop and institute a maintenance strategy for the UH-72A fleet within their respective regions of support. Finally, with the MEP reaching ten years of operational use, the ARNG developed paths forward to determine potential options for updating each of the MEP



MAJ Amanda Schmid and CW4 Brad Kuhn, D/1-376 Security and Support Aviation Battalion, Nebraska ARNG conduct a pre-flight of a UH-72A aircraft in preparation for a training flight in the local training area.

components.

The ARNG, at the Army's request, accelerated the transfer of ten UH-72A aircraft to Ft. Rucker, AL. The plan is to transfer a total of eighteen aircraft to bolster the primary helicopter trainer demands. In turn, the ARNG, will gain 18 UH-72B aircraft to replace the transferred UH-72A aircraft. The UH-72B aircraft will begin arriving to units and the training sites in early 2022. The UH-72B, with enhanced tail rotor, engine and flight controls, will be particularly beneficial for units located in higher and hotter locations and provide the institutional training sites the aircraft needed to meet sustainment training requirements.

With the Large-Scale Combat Operations doctrine in multi-domain environments evolving, and changes to formations on the horizon, the need for LUH capability will remain a factor in any efforts that involve the future of ARNG Aviation.

COL Joseph Bishop is the director of Aviation and Safety for the Army National Guard.



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► Combat Readiness Center Update

Keep Driving Mishaps Down Every Quarter, not just the 4th Quarter!

By LTC Randy James



U.S. ARMY PHOTO BY CHERIE ZACH

Aviation mishaps spike during the fourth quarter most years. From FY15 to FY19, 40 percent of Army Aviation mishaps occurred between July and September, with August alone having 50 percent of mishaps over the quarter.

U.S. Army 1LT Emily Renzi, third from right, with Task Force Viper 1st Battalion, 3rd Attack Reconnaissance Battalion, 12th Combat Aviation Brigade informs during a pre mission briefing for a combined Live Fire Exercise with the 2nd Battalion, 503rd Infantry Regiment, 173rd Airborne Brigade at the 7th Army Training Command's Grafenwoehr Training Area, Germany.

The U.S. Army Combat Readiness Center developed an information awareness campaign in FY19 to address causal factors. Based on this analysis, leaders are enabled to make informed decisions to mitigate these issues that focus on personnel transitions, environment, training, and maintenance. Through a proactive approach, the branch has reversed the trend of the fourth quarter dangers.

So how do we know if we as the Army Aviation Enterprise were successful in addressing this trend? Let's look at the fourth quarter mishaps that occurred since the campaign started. During FY17, there were four mishaps, FY18 also had four, FY19 had five and FY20 had one mishap. In FY21, there was one mishap due to environmental factors (lightning strike). This is the first year since 2014 (seven years) with no Class "A" Aviation mishap during the month of August and only the second time in over 10 years. The fourth quarter spike is all but eliminated; the factors surrounding it are not gone. Commanders are approaching the period differently

through awareness and being proactive.

Now, it's time to address the real crux on how our approach to this time has drastically changed mishap dynamics during the most dangerous part of the year. We are all aware of the challenges, but often individually, we combine the challenges with statistics which provide a different sense of awareness, that "A-Ha" moment. This drove us to craft an action plan to address these challenges in aggregate and in context against our mission. The continued reminder of dangers coupled with a proactive approach led to shared understanding across the Army that impacted our safety culture. Finally, we need to review what we've done to make the organization successful and share it across the enterprise. This is operationalizing the risk management process at its finest on a large scale.

Where do we go from here? This is about applying our lessons learned throughout the entire year to minimize mishaps overall. The fourth quarter was about a proactive approach to transitions in personnel, environment, train-

ing, and maintenance when we know that risk levels rise. While we addressed the fourth quarter, there are major transitions we can apply the same rigor, aircraft fielding/transitions, mobilizations, collective gunnery operations, combat training center rotations and deployment preparations. Combine that with specific nuances of the unit when it comes to personnel and environment to apply mitigations and leadership at the points of highest risk. Then, we need to share our successes and challenges across the Army to help equip our Soldiers with the tools to be successful.

What did your unit do differently that drove mishaps down? What other challenges did you notice that we didn't bring awareness to? What did you see as the highest risk during your time? Please share your lessons learned to the CRC or Flightfax. Continue to drive mishaps down by learning together.

LTC Randy James is the Aviation Division chief at the Combat Readiness Center, Fort Rucker, AL.

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► 128th Aviation Brigade Update

Protecting the Force!

By CW2 Stephen Daniels

The Army Chief of Staff General McConville's first address stated, "People are always my #1 priority" and "Our Army's people are our greatest strength and our most important weapon system."

As COVID-19 emerged in March 2020 and surged again with the introduction of the Delta Variant in the summer of 2021, our operating environment required leaders at all levels to "Protect the Force." This requirement has always been present in every operating environment and the institutional domain has been no exception, whether it involves public health concerns or doctrinal changes for physical fitness assessments. As the Army rapidly implemented COVID-19 mitigation measures, restrictions, and movement-holds for all Soldiers to include trainees departing Fort Eustis, VA, so too the 128th Aviation Brigade (128th AB) developed tactics, techniques, and procedures to continue its critical operations. The leadership of the 128th AB incorporated the latest intergraded multimedia devices to training, continuing to provide instruction and meet annual throughput requirements. Adhering to Department of the Army, TRADOC, The Center of Initial Military Training and USAACE guidance, the 128th AB retained the ability to meet the challenges of continuing the training process and maintaining high caliber rotary-wing MOS training. The core of adapting to the latest operating environment is safety, implemented and emphasized with leaders of presence.

Leadership from 128th AB addressed the problem simply and effectively, empowering leaders at all levels to tackle



Trainees from the 1-222nd Aviation Regiment stand in line to receive their first dose of the COVID-19 vaccine earlier this year.

the mission head on. Every level of leader rose to the challenges presented by COVID-19 restrictions, creatively meeting the requirement for more combat oriented and realistic training, leveraging expertise from all potential sources. While standard daily requirements remained the same for the 128th AB, COVID-19 reduction procedures changed the face of 'normal' in almost every aspect of our Soldier's lives. New battle rhythm events like staggered feeding schedules and separate troop movement plans were implemented to ensure that a single COVID-19 positive did not derail an entire class. When confirmed cases did inevitably arise, the 128th AB responded to the increased risk deliberately and creatively with clustered operations. Trainees were housed in 'cluster groups' for these scenarios, with students being transported as a singular class to and from the hangars for training. Instructors also restricted contact to their homes and their classes, avoiding unnecessary travel and contact with others. These Trainees continued all standard course material while following disinfectant procedures to help mitigate exposure for students using equipment later. The 128th AB also minimized trainee exposure from the local area by restricting Initial Entry Training (IET) Soldiers from leaving the installation. Additional reduction

measures were necessary for physical fitness assessments to ensure Soldiers were trained, assessed, and remained healthy in this increased-risk environment. A detail of Soldiers would implement disinfection procedures throughout an ACFT, for example, allowing trainees to fully focus on individual physical performance. Additionally, standard ACFT-lanes were increased in width, coupled with additional manning which allowed simultaneous execution and a reduction in the risk of exposure from one Soldier to any one of 120 Soldiers participating in the ACFT.

Protecting the force is not an emerging leadership philosophy or a complex statement difficult to understand, "All Soldiers are entitled to outstanding leadership; I will provide that leadership"(NCO Creed). Because of our emphasis on safety and accomplishing the mission, the leadership of the 128th AB has been able to foster an environment for Officers, NCOs, and Soldiers to continue safely training for the current and future missions of U.S. Army Aviation.

"Born Under Fire!"

CW2 Stephen Daniels is the battalion safety officer for 1-222nd Aviation Regiment, 128th Aviation Brigade, Joint Base Langley-Eustis, VA.

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Risk of Potential Adverse Effects on Radio Altimeters

By Mr. David Cripps

This Tech Talk article is a little different than others have been. Rather than explaining the technical details of a subject of interest, this one is part of a wide communication strategy intended to help Army aircrews better understand an emerging situation that may adversely affect flight operations.

The Issue

Worldwide demand for increased and improved mobile voice and data communications has resulted in national authorities responsible for electromagnetic spectrum management licensing portions of the C-band for fifth generation (5G) use. Within the United States, the Federal Communications Commission has licensed the 3.7-3.98 GHz band to telecom companies, with operations permitted as soon as 5 December 2021. Many other nations have also licensed this band. A nearby frequency band (4.2-4.4 GHz) is reserved for exclusive use by radar altimeters (RADALTs) and other affiliated aviation safety systems. Numerous studies conducted by aerospace, avionics companies, and academia have warned of the potential for 5G emitters in the lower C-band to adversely impact RADALTs, possibly causing disruption of function and erroneous altitude output. In some nations where portions of the C-band are already in use for 5G telecommunications, anecdotal incidents have been reported by civil operators ranging from intermittent loss of RADALT function to erroneous RADALT indications. These incidents have resulted in disruption of other functions that are enabled by RADALT output, such as auto-land on commercial airliners, annunciation of decision height for precision approaches, terrain and altitude warning systems, and others. These incidents remain under investigation. Rotorcraft, which often operate at much lower altitudes than fixed wing aircraft, are thought to be at increased risk of adverse impact, potentially affecting terrain and obstacle warning functionality, hover hold, and other flight control modes.

On-going Actions

Civil aviation authorities across the globe have begun issuing alert bulletins about the situation. On 2 November 2021, the Federal Aviation Administration issued Special Airworthiness Information Bulletin SAIB-AIR-21-18, Subject: Risk of Potential Adverse Effects on Radio Altimeters ([https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/dc7bd4f27e5f107486257221005f069d/27ffcb45e6157e9862587810044ad19/\\$FILE/AIR-21-18.pdf](https://rgl.faa.gov/Regulatory_and_Guidance_Library/rgSAIB.nsf/dc7bd4f27e5f107486257221005f069d/27ffcb45e6157e9862587810044ad19/$FILE/AIR-21-18.pdf)).

New standards are rapidly being developed to ensure new RADALTs are not susceptible to 5G emissions. Aircraft manufacturers and integrators are being advised to develop system solutions to negate the potential for adverse impacts when integrating RADALTs onto their platforms. Additionally, aircrew are being cautioned to maintain awareness of the situation and to not solely depend on correctly functioning RADALTs and other systems enabled by RADALTs.

The Department of Defense has established a joint/interagency working group to address the issue. The Joint/Interagency-Five G Radar Altimeter Interference Quick Reaction Test (JI-FRAI QRT) has initiated bench level testing of RADALTs and flight testing at a test range with 5G emitters, scheduled through August 2022. The intent of the testing is to gain empirical knowledge of any interference, and if detected, inform possible materiel solutions to negate it. If testing indicates the need for modification or replacement of current RADALTs, it will be a multi-year process until all affected Army aircraft are appropriately reconfigured.

In the meantime, aircrew should be



aware that there is a possibility that beginning in early December, your RADALT may not operate as expected. It might experience temporary interruption of service or provide erroneous altitude output, particularly when operating below 2500' AGL. The proliferation of cell towers will make it very difficult to identify particular areas where you may be more at risk of these anomalies. Additionally, active 5G mobile devices aboard your aircraft may also contribute to the anomalies.

Mitigate the Risk

So, what can you do to minimize the potential impact?

- Consider your RADALT as a situational awareness instrument. Recognize it could possibly either be momentarily inoperative or provide erroneous height-above-ground indications.
- Fully understand all RADALT-enabled functions in your aircraft (e.g., hover hold), and discuss with your flight standardization experts, strategies to recognize and mitigate any interference.
- Exercise good flight planning, recognizing phases of flight with increased reliance on RADALT and anticipating actions you may be required to take if you experience an anomaly.
- Ensure all 5G-enabled mobile devices aboard your aircraft are set to a non-transmitting mode or are unpowered/off.
- Report any incidents of RADALT anomalies (reporting process will be published via official message).

Mr. David Cripps is the Chief Airworthiness Engineer, DEVCOM AvMC Systems Readiness Directorate at Redstone Arsenal, AL.

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► Ask the Flight Surgeon

Atrial Fibrillation

By CPT (Dr.) R. John Paul Gingerich

Q: My brother was diagnosed with atrial fibrillation. What do you know about atrial fibrillation and what could it mean for me if I was diagnosed with it?

FS: Atrial fibrillation (AF) is a common heart problem which affects the rhythm of the heart. Commonly referred to as “A. Fib,” it affects over 2 million people in the United States. In 2019, nearly 150 cases of AF were diagnosed in Active-Duty service members.

What causes Atrial Fibrillation?

The heart has four chambers: two atria and two ventricles, which are sometimes referred to as the “upper” and “lower” chambers, respectively. The chambers normally squeeze in series, first the upper, then the lower. The heart is essentially a pump with four moving parts.

The heart normally works by sending electrical signals from the top of the heart to the bottom in a very specific time and route, this is what causes the rhythmic pumping function of the heart. With AF, the signals are not sent properly, causing abnormal movement of the heart. Unlike the rhythmic effective pumping, the atria quiver with little to no movement, as a whole. This results in decreased amount of blood pumped through the heart to the body.

Although AF can happen to anyone, there are some recognized risk factors which make it more likely to occur. Among the most common risk factors are genetic predisposition, uncontrolled high blood pressure, older age, male gender, and European ancestry.

Why is Atrial Fibrillation a Problem?

The decreased pump efficiency results in turbulent flow of blood or stagnant blood, likely allowing blood to clot. If a clot is dislodged and allowed to travel, it could block the blood flow to various organs. Although many organs are susceptible, most notable organ is the brain. A stroke occurs when the blood clot blocks an artery which supplies part of the brain, depleting oxygen supply. A stroke is a catastrophic event for anyone, let alone an aviator in flight.

The second concern is the rapid heart rate which AF can cause. At the very least, it can be frightening to the individual,

but at worst it can cause instability of the blood flow from the heart and even cause death.

Symptoms

The symptoms differ from person to person, and it is possible to have no symptoms at all. While many cases of AF are found incidentally on an electrocardiogram (ECG), common symptoms are fast heartbeat while resting, dizziness, fatigue, or even mild chest pain.

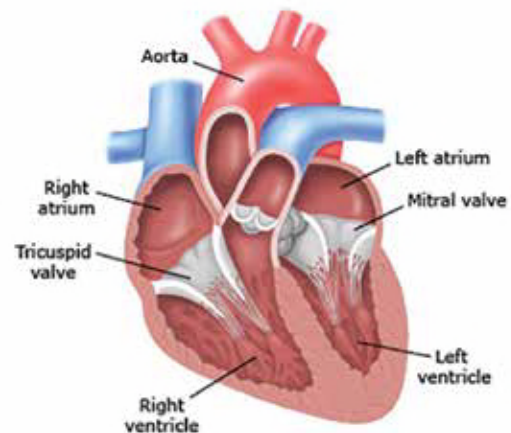
Treatment

There are several options for treating atrial fibrillation. Anticoagulants or “blood thinners” are used to prevent the clots from forming in the heart, which decreases the chance of stroke. Other medicines can control the heart rate by slowing it down. If medicines do not work, a routine procedure which very precisely burn (called radio ablation) small areas of the heart which are thought to cause AF could be performed. Finally, if other methods fail, some people with AF require a pacemaker to control the rate of their heart. A pacemaker is a small device implanted under the skin which sends electrical signals to the heart, regulating the pace. With specific and proper treatment for atrial fibrillation, many people live effective lives with little limitations.

What are the Army Regulations Regarding Atrial Fibrillation?

Army Regulation 40-501: paragraph 3-14b supraventricular tachyarrhythmias states that a Soldier with AF should be referred to the Disability Evaluation System (DES), but not necessarily discharged from the Army.

The primary concern regarding Aviation duties is the risk that AF poses for sudden incapacitation in the form of a stroke, a catastrophic event, especially under the circumstances of Aviation. AR 40-501, paragraph 4-12b(10) lists atrial fibrillation among conditions that do not meet the standards of medical fitness for flying duty. The Aeromedical Policy



U.S. ARMY GRAPHIC

Letters (APL) states that waivers may be considered for those who have undergone the radio ablation. Six months after successful treatment with radio ablation, a waiver may be applied for. However, it should be noted that those with other underlying conditions such as coronary artery disease (CAD), and in those who have a recurrence of the atrial fibrillation, it is highly unlikely that a waiver will be granted.

Question for the Flight Surgeon?

If you have a question you would like addressed, email it to AskFS@quad-a.org; we will try to address it in the future. See your unit flight surgeon for your personal health issues.

The views and opinions offered are those of the author and researchers and should not be construed as an official Department of the Army position unless otherwise stated.

Dr. (CPT) R. John Paul Gingerich is a flight surgeon and Resident in Aerospace Medicine at the U.S. Army School of Aviation Medicine at Fort Rucker, AL.



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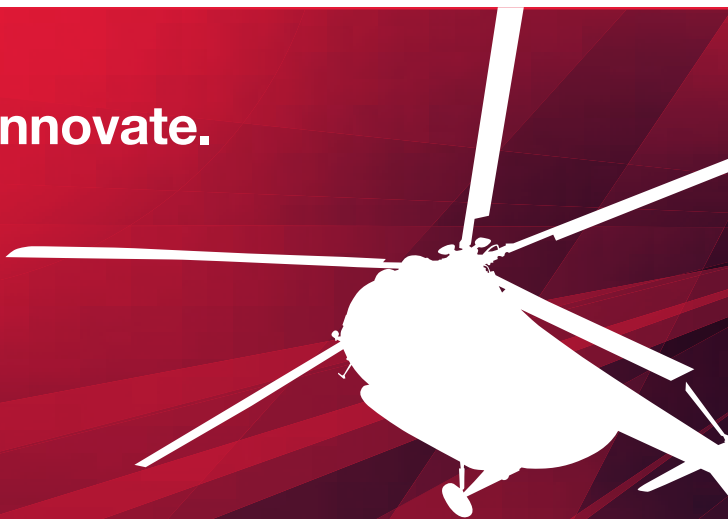
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Dependable Power for Speed and Range to Support Future Vertical Lift

By Mr. George H. McLaren



Speed and range have never been more important for supporting the warfighter across the globe. With over 1 million engine flight hours, the Rolls-Royce AE 1107 engine brings a wealth of reliable, global service to the table for Army modernization. As a member of Bell's Team Valor, Rolls-Royce has developed an integrated propulsion system featuring the combat-proven AE 1107 turboshaft engine for the V-280 aircraft.

Rolls-Royce, a world-class aerospace leader and longtime Bell partner, will supply the engines and propulsion system to power the Bell V-280, the only weapons system with the flight-proven agility, speed, range and endurance for Army modernization. Bell is competing with the V-280 Valor for the Army's Future Long Range Assault Aircraft program and has assembled an outstanding group of companies to join Team Valor.

Combat Proven

The Rolls-Royce AE 1107 engine for the V-280 has proven itself in combat around the globe, powering all V-22 aircraft in service with the U.S. Marine Corps, Air Force and Navy. A naval version of the engine also powers the Navy's

Rolls-Royce is a proud member of Team Valor and will design the propulsion system for the Bell V-280 aircraft for Army modernization.

Ship-to-Shore Connector (SSC).

The AE 1107 offers a low-risk, ready-now propulsion solution. The engine is the latest variant of the highly successful Rolls-Royce AE engine family. All told, Rolls-Royce has delivered over 7,000 AE engines, accumulating over 82 million engine flight hours across military and commercial fleets. That strong history of operation brings a wealth of experience to the Army, and offers confidence through a long history of demonstrated reliability. The AE 1107F supports enhanced speed and range, as well as affordability throughout the life cycle of the engine.

The AE 1107F engine is very similar to the proven V-22 engines, and also offers enhanced reliability with some minor improvements gained from learning lessons in V-22 operations.

Rolls-Royce, and its predecessor company, Allison, have supported Army rotorcraft programs for decades with engines manufactured at its Indianapolis, IN, facilities. An early gas turbine engine, the Allison 250, powered early Army helicopters dating to the early 1960s. The engine family, now known as the Rolls-Royce M250, powers the Army's Little Bird helicopters, as well as the OH-6 and OH-58 fleets in the past.

Team Valor

Rolls-Royce stands ready to support Army modernization and is excited and proud to be a member of Team Valor - the right team, the right tech, right now. Rolls-Royce has partnered with Bell for decades on rotorcraft applications, including the V-22. As a member of Team Valor for nearly four years, Rolls-Royce has been working hard with Bell to design a fully integrated propulsion system for the V-280, from the inlet to the infrared suppressor. The companies have collaborated to create an outstanding design and have already completed extensive risk reduction to support Army modernization. The infrared suppressor, for example, features an advanced design to enhance survivability.



The Rolls-Royce AE 1107 engine powers the V-22 aircraft and will power the Bell V-280 aircraft competing for the Army's FLRAA program.

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Ultra-Modern Facilities

Just as all prior Rolls-Royce AE engines were, the AE 1107F will be designed, manufactured, assembled, and tested in the company's recently upgraded facilities in Indianapolis. The company just completed a \$600 million modernization program at its

facilities, creating a premier, world-class advanced manufacturing campus.

The ultra-modern facilities expanded manufacturing capability, while reducing footprint – resulting in an efficient facility second-to-none, supported by a highly skilled American workforce. The digital design capabilities and robotized

The primary manufacturing facilities for Rolls-Royce North America are located in Indianapolis, IN, with over 3,000 employees working on engines and propulsion systems for the U.S. Department of Defense, including the AE 1107 engines.

workstations are industry-leading and will benefit the Department of Defense and all customers.

The AE 1107F and other engine programs are supported by Rolls-Royce LibertyWorks, an advanced technology research and development unit, also located in Indianapolis. In addition to the infrared suppression system for the V-280, LibertyWorks has also developed advanced technology for Directed Energy systems, creating a unique integrated power and thermal management solution that provides endless magazine capability. The company's system, known as ColdFire, has been lab and field tested in collaboration with Lockheed Martin.

Rolls-Royce has also been working to meet de-carbonization goals, committing to Net Zero carbon emissions in operations by 2030. The company is also focused on reducing environmental impacts through a variety of technologies, recently claiming an airspeed world record by a battery-powered aircraft, hitting 387 mph in the Rolls-Royce Spirit of Innovation airplane.

Mr. George H. McLaren is Vice President for Marketing & Communications, Defense North America, at Rolls Royce.

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Future of Fixed Wing Aviation & The Bridge to Get There

By Dr. Eldon "Pete" Franks

Blackhawk Aerospace is an affiliation of four small businesses that provide 37 engine upgrade Supplemental Type Certificates (STCs), management of Maintenance, Repair, & Overhaul (MRO) of aircraft subsystems, 32 avionics upgrade STCs, composite components, and aircraft modifications. Blackhawk has over 22 years of stellar past performance providing world-class program management with innovative solutions, MROs functions, and aircraft and avionics performance upgrades. When Blackhawk considers an upgrade, we look at how to enhance performance, save the customer money via an upgrade versus long-term maintenance, and how this upgrade will fit the market. As the world's third largest buyer of PT6A engines from Pratt & Whitney Canada (P&WC), Blackhawk enjoys a special relationship with the OEM. This relationship affords BAS competitive pricing exclusive in the market for PT6 engines, both for maintenance and upgrade packages, as well as greater insight into the market's trajectory.

Blackhawk foresees a strong push by the world's governments to eliminate combustion engines, so Aviation will be zero emissions/low carbon by 2050. To meet this demand, engine developers will have to find innovative solutions to expand limited range capabilities and find an alternative Sustainable Aviation Fuel. This process to research and develop a new Sustainable Aviation Fuel, whether it be hydrogen, blended fuels, batteries, or something else entirely, may take 15 to 25 years before the new line of engines are assembled and put into the market. Meanwhile, government and industry leaders will have to consider the infrastructure changes to make this a viable market.

Assessing the Current Turboprop Fleets

As Blackhawk looks at the current military turboprop fleets, particularly the C-12, we see a fleet that is currently 30 years old with very little technology insertion for lifecycle extension. The Future Utility Aircraft was supposed

to solve this issue, but its cancellation means the lifecycle extension remains a problem. As an aircraft gets older, it grows heavier. The avionics are now so old that many of the aircraft need waivers to even fly into the high-density traffic control areas, and the cost of maintenance is going up significantly. Blackhawk believes Army Aviation needs a bridge to extend the current C-12 fleet to 2050. It is important to note that the C-12/B200 airframes from Textron do not have a 30,000-hour life limit on the airframes that the older 200/A200 models had, so the C-12 fleet is capable of being extended for another 20 to 25 years. This bridge will provide the Army time to plan and prepare for a suitable and affordable replacement program for the C-12.

The most economical solution for extending the life of the C-12 fleet is through an engine and avionics upgrade. The military's PT6A-42 engine fleet is going through its third to fifth overhaul, which is a common point where many of these engines become uneconomical to



Blackhawk's XR Endurance Kit installed on the King Air 350.

IMAGERY BY BLACKHAWK SCOTT SLODIA AEROMARKETING GROUP



repair and it is cheaper to buy a new engine. Unfortunately, the PT6A-42 is not in standard production. Furthermore, the engine is based on 1960's technology and does not have the performance capabilities. A PT6A-52 upgrade, however, would provide an engine that began production in the 1990s, is currently on the assembly line, and provides the power to fully support the aircraft through climbs to FL300 (Flight Level) or ~30,000'. With this engine model, if the user flies 365 hours per year, then the user will save approximately \$45,000 in operation costs and save \$120,000 on average over a third or fourth overhaul of the current engines. These new factory engines come with a warranty and the first two overhauls are the cheapest in the life of an engine. Beyond its incredible cost savings for operations, by coupling the PT6A-52 with a 5-bladed composite prop the available power enhances the climb rate by 25% and cruise performance by 20+ knots, as well as making the cabin quiet enough to have a conversation at normal voice levels.

Avionics

The original avionics layout and even the part of the fleet that got a version of the ProLine21 are either obsolete or in jeopardy of being out of date by not being authorized to fly into Class B and Restricted airspace locations. The current glass cockpit systems are clean and intuitive avionic systems. The OEMs have put the effort into integrating the military transponder and HF radio, allowing for seamless operations. An example is the G1000NXi which reduces the workload for the pilots significantly when ATC provides enroute changes, weighs about 200 pounds less, will be compatible with current and future airspace requirements, and is significantly cheaper.

Performance

During a recent demonstration of the PT6A-52 equipped aircraft, several guest participants were amazed with its performance. One commentator described how "the aircraft was able to have a 1,900 or greater [climb rate] up to FL260, which is much better than our current C-12s." Another participant relished how "the cockpit noise level was quiet enough that the passengers were able to have a conversation at a normal level with the aircraft at max takeoff power." With these and other added performance enhancements, like greater acceleration than the current C-12, steady propeller engagement during taxi, better cruise speed, and more, this upgrade provides the military the necessary performance, mission operational readiness, and safety margins to continue to fly the C-12 fleet throughout the upcoming market turbulence. By the time users complete the first overhaul for a set of PT6A-52 engines, the cost savings will reach almost \$1,000,000

compared to a set of current engines.

With the Mission Enhancement Kit installed on the 350ER fleet, Blackhawk has proven how an engine and propeller upgrade is an excellent way to improve the operational capabilities for current airframes, improves safety margins, and lowers operation costs. These aircraft can take-off in High/Hot conditions at max gross weight (MGW). Blackhawk even created an upgrade kit for the King Air 350 that would take it to 16,500 lb. MGW with longer duration times that can take off in High/Hot conditions and climb straight to operating altitude for the Contractor Owned Contractor Operated (COCO) market that we call the XR. This upgraded aircraft allows operators to perform missions up to 35,000 MSL (Mean Sea Level), increases the scope for monitoring, improves station time, and provides better survivability.

Blackhawk has delivered over 1,000 turboprop engine upgrades and is the world leader in delivering these upgrades for the global market. Blackhawk Composites is building many components for unmanned aerial vehicles, ISR equipment pods, aircraft winglets, and other items in the composite market for multiple defense primes. Blackhawk believes there is going to be a disruptive period of technological innovation to reach the world's governments goals by 2050. To help the military transition through this phase, Blackhawk believes that providing a bridge for the legacy fleet will make the transition affordable and give the military and industrial leaders a chance to evaluate the best options of the new aircraft offering.

Dr. Eldon "Pete" Franks is the President of Blackhawk Aerospace Solutions in Huntsville, AL.



Garmin G1000 NXi installed in a King Air.

IMAGE PROVIDED BY GARMIN VIA BLACKHAWK

The Eagle Has Landed

By Scott Emerine

The Eagle has landed," is a phrase synonymous with mission success and great achievement. This fall, the Eagle landed at AEM Corporation with their acquisition of the Audio Division from Eagle Copters, Ltd., and the distribution agreement with Dallas Avionics. AEM acquired the audio line because of its mission critical capabilities and natural fit with their engineering and production capabilities.

Current analog and other audio systems that serve the United States Military do not have the same capabilities as the highly-touted AEM P139-HD Digital Audio System. The system expands the capabilities of radios to perform mission critical communication simultaneously. The P139-HD supports up to 18 headsets, 30 transceivers, and 36 control panels.

"This audio system would be a critical upgrade to the LUH fleet," said Dallas Avionics Technical Support and Sales for Government Programs Scott Hurst. "Because the system can handle so many transceivers it allows for seamless simultaneous communication. The pilot can be in communication with ground crews, the crew can be in communication with troops and medical teams, and the co-pilot can also be communicating with other aircraft, base or other necessary operation team members."

"We are pleased to partner with Dallas Avionics on the distribution of this game changing digital audio system," said Steve Broderick, Distribution and Business Development for AEM. "Dallas has an extensive sales team, a proven reputation of supplying radios and other products to the United States Military and extensive knowledge of radios, audio systems, public address systems and other devices."

Currently the LUH Lakota aircraft are equipped with audio systems that do not allow for full simultaneous utilization of all tactical radios. They also currently have numerous tactical radios that don't match today's P25



Dallas Avionics' AEM P139-HD Digital Audio System

DALLAS AVIONICS, INC.

system requirements. The combination of the AEM P139-HD Digital Audio System and TDFM 9000 would increase the capabilities of the communication mission package and meet today's present standards.

"The TDFM 9000 is capable of handling multiple channels, but the audio system they are connected to is critical. The AEM P139-HD allows the TDFM 9000 series radios to be used to their maximum capability. Now pilots and crew can use multiple transceivers on the TDFM simultaneously instead of being limited," said Hurst.

The AEM P139-HD also is programmable and customizable, allowing the end user to configure it exactly for current and future requirements. "Our audio systems can be customized to meet the pilot and crew needs. You can have five transceivers; you can have 30 transceivers, or you can have anything in between. The audio panels are NVIS compatible, can be custom engraved, and programmed to specifications. This gives the audio systems full customization capabilities. We have both the G13116 eight transceiver control panel and the G13115 with 16 transceiver control panels," said Broderick.

Dallas Avionics supplies the full

line of AEM audio products, public address systems, Technisonic Radios, and other mission critical avionics and communication gear. Dallas Avionics currently supplies equipment for the H-60 and CH-47.

"Since 1973, Dallas Avionics has provided equipment to help the United States military as a trusted partner," said Dallas Avionics Vice President of Sales Scott Davis. "We are always looking to distribute and sell products that will enable our troops to have every advantage possible. Whether they are performing peace-time maneuvers, defending our freedom on foreign soil, or aiding citizens during natural disasters, they need the best communications devices available. We believe the Technisonic radios coupled with the AEM P139-HD is a game changer. The industry has demanded simultaneous communication options and we have the solution."

For more information about the radio capabilities, and other mission critical devices visit <https://www.dallasavionics.com> or call (214) 320-9770.

Scott Emerine is the communications and public relations manager for Dallas Avionics.

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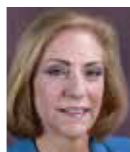
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It Is A Great Time To Be In Army Aviation!

By Mr. Jeffery Langhout



Now is an awesome time to be working the next generation aviation technologies as we support our Army and thinking about how 2035 and beyond will look to our nation.

In the here and now for aviation technology demonstration and experimentation, it's all about EDGE and Project Convergence. Taking technologies that are mature enough to experiment with and using that intersection of maturing technologies with live experimentation to inform realistic, and realizable requirements, makes for a lot of fun, and great and important debate. We are experimenting with new launchers, Air Launched Effects (ALE), advanced teaming between ALEs, some very nasty guns, and longer-range missiles. All this while on the Program of Record side of the house, Army aviation is moving forward at best pace with new aircraft chock-full of new technologies and architectures.

In the midterm, it's about really understanding what can be transitioned over the next 10 years and ensuring that it does transition. I think you will see a ton of effort in autonomy, smart swarming, coordinated attacks, artificial intelligence, and generally looking for "common" solutions that can

support all the aviation platforms, as well as the technologies discussed above to ensure they are in the plan of our customer's Programs of Record acquisition strategy.

In the longer term, that's for the brilliant dreamers – our friends at Army Research Lab and our university partners – to really get to things like materiel deception (it's not the Star Trek cloaking device but makes me wonder just how far away we might be), or new materials, strength of materials, and super lightweight armor, which are all things our future aviation enterprise will need. As important as artificial intelligence and autonomy are to our future, I think major breakthroughs in material sciences are an equally critical path, as we must find ways to reduce weight and increase survivability, while being cost-effective across the lifecycle.

One area where we are not dreaming, but beginning serious work to determine requirements, is in *electric propulsion* for our vertical lift assets. We often talk about 10X better lethality or survivability, but how about 10X reduction in flight hour costs or a 10X reduction in maintenance burden? Working with our partners at the AFWERX, we are investing now to not study the problem, but do the detailed airworthiness

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assessments on electric propulsion, thus identifying gaps which will drive where we need to put resources to drive technology maturity, and thus delivery of an airworthy product for our Army.

Air Launched Effects seemed to be barely in anyone's vernacular just five years ago – today it's all about ALE. How ALE fits into the battlefield of tomorrow seems to only be limited by human imagination. Thus, I expect to see ALE everywhere, and then the challenge will become airspace congestion, not just de-confliction. More interesting problems, the engineers and scientists will get to solve.

Much like Tesla, which is much more than a car/clean energy company, but a data company that just happens to produce neat automobiles, Army aviation of the future *will be flying data*, using billions of labels, and creating billions of labels to further artificial intelligence that will be used across the battlefield. I expect significant energy into figuring out how to label as many "things" as we can so we can teach the algorithms, and thus give us some of the leap ahead capabilities that we need to frankly just keep up with our peer competitors.

Existing Assets

And while all this fun and attention to new stuff is ongoing, we have existing assets that will be in the field for many more years. Those incremental improvements to those weapon systems must continue. So why not expect or plan to essentially have cockpits that get their software updates as easily as the app on your phone? Modular Open Systems Approach (MOSA) et al. are all philosophies, if not rules/standards, that have a chance to get us there -- but will we be disciplined to stay the course? Model Based Systems Engineering, auto generated code, so many great processes and tools are there and ready for use today. But being the 58-year-old guy that I am with the experiences that have shaped me, will we be disciplined? Will we be dogged with our configuration managers and systems engineers to ensure we stay true to the digital designs, or will the disasters of the moment and schedule and cost pressures drive us away from the expectation that the as-built airplane is perfectly depicted in the models/digits? I am hopeful, if not confident, our chief engineers and product managers will be true to the

digital designs and be strong advocates for configuration control.

In the meantime, wow! It is the greatest of times to be in Army aviation, no matter where you sit in the lifecycle. I am excited about the new technology side. I am excited about our programs of record, and the important new helicopters and UAS on the near horizon, and the important incremental upgrades to the existing fleets. I am excited about what ALE can bring to the fight. And I am excited about the sustainment and how we are helping the least alluring, but most critical part of the lifecycle with advanced manufacturing, digitization of the existing fleet, implementing new maintenance philosophies and just finding ways to reduce burden on the aviation maintainer. All of this points to the most important part of our jobs, and that is delivering affordable combat power to our nation and being there to support Soldiers on the ground on their terms.

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Mr. Jeffery Langhout is the Director, DEVCOM AvMC at Redstone Arsenal, Alabama.

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Army Aviation S&T – Forging the Future through Collaboration & Integration

By Mr. Carvil E.T. Chalk

Before the first spark ignites the engine, and before the rotor system produces its first pound of lift, the U.S. Army Combat Capabilities Development Command Aviation & Missile Center is sparking the imagination and producing the next generation of rotorcraft scientists and engineers through its Vertical Lift Research Centers of Excellence (VLRCoE) program.

This continuing partnership between the Army, Navy and NASA ensures students are effectively trained to develop, evaluate, demonstrate and test advanced vertical lift technologies. Three multi-university teams include faculty and students from institutions across the United States. The Georgia Institute of Technology, the Pennsylvania State University and the University of Maryland have collectively teamed with a dozen other academic institutions to execute more than 30 technical projects over the next five years. Projects span the gamut from performance, acoustics and vibrations of coaxial, tilt-rotors, compounds and other

Above left: NASA Langley Research Center (LaRC) 14- x 22-ft wind tunnel

Above right: RASCAL in flight over the National Full Scale Aerodynamic Complex (NFAC) at Moffett Federal Airfield/ NASA Ames Research Center.

advanced multirotor configurations to measurement and modeling of aircraft operating in complex flow environments such as confined spaces and in ground effect.

What sets this program apart from other innovative basic research grants is its sustained, long-term investment in university centers built around robust multi-disciplinary graduate education programs. This critical mass of vertical lift expertise in a highly collaborative research environment incubates the next generation workforce. Government subject matter experts remain actively involved over the entire life of the research projects to ensure alignment with our broad science and technology (S&T) goals. And these close collaborations provide a natural conduit for technology

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Project "Insight" is our effort to produce experimental data for a compound helicopter configuration through scale model tests at the NASA Langley Research Center (LaRC) 14- x 22-ft wind tunnel. Employing powered main and tail rotors, as well as fuselage, wings and tail surfaces, we will "fly" at operationally relevant speeds. Data from these experiments will validate our Helios tool, making it an authoritative source to inform design decisions and reduce program risk. To quicken the pace at which we can assess the novel vehicle configurations needed in the future operating environment, we partner with the DoD High Performance Computing Modernization Program to streamline the code for execution in the parallel computing environment. We also take these model characteristics and employ them to drive simulations of novel concepts to gain pilot feedback.

Our flight controls and human systems interface teams are doing just that at the NASA Ames Research Center (ARC) Vertical Motion Simulator (VMS) to investigate and refine the use of FVL-relevant configurations and technologies. In this independent, Government owned-and-operated, simulation environment for advanced rotorcraft configurations, we are executing a series of piloted simulations under the moniker of **Advanced Rotorcraft Configurations Testing of Increased Capabilities (ARCTIC)**.

During this structured series of investigations through spring 2022, experimental test pilots and operational pilots will conduct mission scenarios and provide feedback on available design trades for FVL systems, such as collective versus thrust control lever, active sidestick controllers, and specialized cockpit displays. They will also explore critical handling qualities requirements and investigate cognitive workload benefits of higher levels of flight controls augmentation and autonomy. The Army-developed flight-dynamics models and advanced full-flight envelope flight controls form the core of the FVL simulation environment. Combined with high-fidelity out-the-window scenery and the world-class motion capabilities of the VMS facility, this effort will help designers and program managers hone in on the optimum solutions.

MOSA

Of course, flight controls and human systems interface are not the only advancements required for FVL success; a long-standing goal for Army aviation has been a Modular Open Systems Approach (MOSA) for mission systems software. And now, that goal is about to take flight!



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Integrated Mission Equipment (IME) is leading the way to make MOSA a reality for FVL. Our Architecture Verification Environment (AVE) is already being used to validate whether MOSA requirements are being met by proposed solutions from across the FVL enterprise. Its accompanying digital backbone lab will soon provide an environment where real components can be integrated and verified prior to final acquisition decisions. This combination of automated processes and tools in a ground test setting for software, hardware, and architecture integration is a game-changer for versatile technology assessment and program risk reduction, just as MOSA itself is a revolutionary tactic for rapid capability improvement and deployment – ensuring our warfighters always have the edge.

IME is also building a **Mission Systems Flying Testbed (MSFTB)** that will be used as a tool for evaluating and maturing MOSA enabled technologies in a realistic flight environment. Ground and flight test demonstrations in the coming year will show how innovative integration will enable rapid changes based on mission need. Later demonstrations in the MSFTB will verify MOSA conformance and assess these technologies. And, since our flying test bed will have not only the digital backbone but will also include our **Rotorcraft Aircrew System Concepts Airborne Laboratory (RASCAL)** fly-by-wire flight control system, we will lead the way in reducing risk for complex systems integration aboard FVL platforms.

Aircraft and Aircrew Protection

Lastly, I want to highlight a unique area of development in structures, our Aircraft and Aircrew Protection (A&AP) program. We often highlight aircraft performance improvements, but we are also working to enhance crew protection through structures. Two A&AP efforts – Full Spectrum Crashworthiness and Platform Situational Awareness – are undergoing demonstration testing.

Full Spectrum Crashworthiness seeks to improve the overall crash performance through energy-attenuating and load-limiting components, rapidly deployable landing gear, and external airbags. The load-limiting and energy-attenuating components include main rotor gearbox energy attenuating struts and a frangible gun mount, both of which are undergoing demonstration testing at the NASA Landing and Impact Research Facility (LaRC).

The **Platform Situational Awareness** area leverages full-authority flight controls to achieve multi-spectral signature reduction, adaptation to aircraft damage, automated crash detection and mitigation systems, terrain avoidance, and landing assistance. Preliminary testing of these technologies is underway and should conclude by the end of 2021.

Despite the challenges we face, our DEVCOM AvMC Aviation S&T team continues to engage on all fronts, and we still effectively execute the mission and partner across the rotorcraft community. From modeling and simulation to open-air flight test, we advance the state of the art to give our Soldiers the advantage wherever duty calls them. Forge the Future!

Mr. Carvil E.T. Chalk is the Deputy Director for Aviation Technology at the Technology Development Directorate, DEVCOM Aviation & Missile Center, located at Redstone Arsenal, AL.

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The Changing Face of Risk

By Mr. Chris Hodges and Mr. Dave Cripps



It is an exciting time to support the Army Aviation materiel enterprise. We have just come through two decades of nearly constant capability improvements on our enduring fleet of Chinook, Black Hawk, and Apache helicopters. This same period saw the development and fielding of a host of unmanned aircraft systems, which were rapidly integrated into the Army's warfighting formations, bringing with them diverse capability in intelligence, surveillance, and reconnaissance. Innovative technical advancements saw the integration of a wide array of sensors onto commercial derivative fixed wing aircraft, adding unique capability to the fight. During this time, the aircraft and the aircrew who operate them faced challenging missions with high OPTEMPO in austere environments but performed magnificently. Developing, qualifying, fielding, and supporting this wide variety of airborne capability took the combined efforts of the entire Army Aviation materiel enterprise, both industry and Government, all of whom contributed immensely to the hard-earned successes enjoyed by the brave Soldiers who employed the systems in our nation's longest war.

As impressive as these last twenty years have been, the next several years will usher in a new era of warfighting capability that will ensure the US Army remains the dominant land power in the world, and Army Aviation will feature prominently in this modernization. Two new aircraft, the Future Attack Reconnaissance Aircraft (FARA) and the Future Long Range Assault Aircraft (FLRAA), are being developed under the leadership of the Program Executive Office for Aviation. These two aircraft will bring unprecedented advances in speed and capability to warfighting commanders. Two additional complementary capabilities will support FARA and FLRAA, those being Future Tactical Unmanned Aircraft System (FTUAS) and Modular Open Systems Approach (MOSA). FTUAS will introduce new configurations of unmanned air vehicles and

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Remote (D)	Serious	Medium	Medium	Low
Improbable (E)	Medium	Medium	Medium	Low
Eliminated (F)	Eliminated			

means to control them, among which will be Air Launched Effects (ALE), a mission-configurable unmanned aircraft system capable of launch from FARA and FLRAA with a variety of payloads tailored to the combat effect needed by the operational commander. MOSA will bring Army Aviation into the world of plug-and-play in both hardware and software applications. Together, these new programs will significantly enhance the capability of Army Aviation and its contribution to the Joint fight.

New Set of Challenges

But along with new capability often comes a new set of challenges, and these modernization efforts are no exception. All these efforts are highly complex, and the standard set of development and qualification tools used for decades were themselves developed at a time when systems had much less complexity. As a result, applying these conventional tools to contemporary programs often drives long development and qualification timelines and significant cost to assure the required levels of confidence and reliability. And some emerging technologies that offer significant capability enhancement are simply not compatible with conventional qualification and certification methods.

Quantifying the required levels of confidence and reliability is central to

the method of risk assessment and acceptance the Department of Defense has utilized for many decades and with which leaders at all levels are familiar and comfortable. MIL-STD 882E, System Safety, establishes risk levels based on two factors – probability of occurrence of a particular potential hazard and the severity of consequence should that hazard occur. Many analytical and empirical methods have been refined over the years to numerically quantify the probability, and extensive utilization and improvement has occurred to the point that there is very high confidence in the resultant numbers. And the confidence in the quantification of probability of occurrence has driven a wide variety of mitigation strategies to prevent the event from occurring, including the establishment of inspection intervals, component overhaul intervals, and component retirement lives. The combined outcome of an effective materiel risk assessment and mitigation strategy has been exceptionally low materiel failure mishap rates across all model aircraft in the active inventory.

But as we move into a realm of much greater complexity, the use of conventional methods becomes excessively time-consuming and costly. This complexity is largely driven by the integration of advanced functions via software, and while the functionality brings promising new warfighting capability, it

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also results in massive increases in the size of software (typically measured in source lines of code, or SLOC) and in the interdependence of a myriad of sensors and processors. Numerous studies have shown that increases in software size and complexity nearly always result in disproportionate increases in the time and cost to certify the software for use, and even greater impact on the cost to maintain the software over time.

Adding to this challenge is the emergence of technology that is non-deterministic, meaning that the behavior of the system does not result in the exact same outcome each time it is in a given situation. Artificial intelligence enabled systems, including autonomous behaviors, are designed to continually “learn” from their experiences, applying that learning to all new situations the system encounters. This continual adaptation is not compatible with the conventional view of emphasizing certainty of outcome in any given scenario.

New Assessment Methods

The dual challenges of ever-expanding complexity and greater use of non-deterministic capabilities have driven the Army Aviation materiel enterprise to explore alternative methods to gain

confidence that the overall level of safety of a materiel system is comparable to the very high level of overall materiel system safety that has evolved in the last half century. These include System Theoretic Process Analysis (STPA, pioneered by Dr. Nancy Leveson of MIT), model-based systems engineering, creative application of stochastic methods such as novel use of Monte Carlo simulations, and others. Each of these methods affords a view of the performance of the system, as opposed to focusing on individual components or subsets of the system like previous methods have taken. Several of these techniques are being applied in unison and compared with conventional approaches to gain more confidence that they can augment or perhaps even supplant some of the conventional approaches.

After many decades using the familiar *probability vs. severity* risk assessment code construct and the resultant extremely high levels of materiel safety experienced in Army Aviation, risk accepting officials and other senior leaders will need to recognize that there will be a fundamental shift away from what they have become accustomed to and with which they have grown comfortable. As opposed to quantification of risk prob-

abilities being informed by familiar empirical and analytical methods (meaning we *know* that the particular system actually demonstrated performance confirming the probability of failure was no greater than the RAC level assigned), the shift will be to knowing the developmental path followed to yield the product conformed to trusted processes, inferring that the resultant product is highly reliable and that the probability of hazardous conditions has been minimized to acceptable levels. Undoubtedly this transition will require time for everyone involved to understand and to become comfortable with the outcomes. As the materiel development community gains experience with this new approach, certainly there will be learning and adjustment. And as the operational community gains experience with systems developed using this approach, the capability improvements brought about will well serve Army Aviation for many years into the future.

Mr. Chris Hodges is the Deputy Director for Airworthiness and Dave Cripps is Chief Airworthiness Engineer at the DEVCOM Aviation & Missile Center Systems Requirements Directorate located at Redstone Arsenal, AL.



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Powering Flight: The Aviation Turbine Engines Project Office Update

By COL Roger D. Kuykendall & Cindy Mitchell

Every Soldier relying on an Army Aviation helicopter shares a common denominator: dependence on the systems powering their aircraft. That is where the Aviation Turbine Engines (ATE) Project Office steps in to ensure power systems are meeting performance requirements today and in the future as the central management office for Army Aviation propulsion and Electrical Power Systems (EPS).

The ATE Project Office portfolio is comprised of primarily turbine engine power generation, which is a mature technology that offers unmatched, reliable power production. However, recent advancements in hybrid and all-electric technologies are opening new possibilities in commercial aviation that can be acquired and leveraged into military aircraft. As emerging technologies, hybrid and all-electric power options offer increasingly greater power availability without the logistical burden of fossil-fuel based engines. As the touchpoint for current and future power systems for Army Aviation, the ATE Project Office continues to explore, design, develop, deliver and support enduring and emerging power solutions.

Turbine Engine Power

As a tier two modernization priority for Army Aviation and the designated engine for the Future Attack Reconnaissance Aircraft (FARA), the Improved Turbine Engine (ITE) / T901 is a state-of-the-art turbine engine offering next generation power, fuel efficiency, and reliability while simultaneously offering simplified integration to replace the enduring T700 engine with its form fit design. An Acquisition Category IC program and critical modernization priority, the ITE will provide next-generation power to FARA, Black Hawk H-60M/V and MH-60M fleets, and Apache AH-64E fleets with a 3,000 shaft horsepower class engine. The inte-

gration of the more powerful ITE will enhance Army Aviation's Reach and Lethality in Multi-Domain Operations (MDO) with increased range and payload in high-hot flight conditions while offering reduced fuel consumption and decreased maintenance.

The technology behind such revolutionary steps in engine performance is due in large part to the employment of Additive Manufacturing (AM) for complex components of the engine, previously built from cast or machined parts. AM application is endless and uses digital modeling to produce three-dimensional objects from powdered metals to form a complex, finished product. For the ITE / T901, AM has enabled a dramatic reduction in the quantity of engine parts from the enduring T700: replacing ~435 individual parts with 11 geometrically complex parts. This reduction in parts decreases the engine's weight and has additional benefits, such as increased performance (range, endurance, and payload) and improvements in reliability and maintainability.

In the past 12 months, the ITEP continues to execute rigorous component testing in preparation for the next critical milestone, First Engine to Test (FETT) in 2QFY22. For FETT, all subcomponents will be assembled, instrumented, and the engine will be started for the first time, undergoing hundreds of hours of run time. FETT

will begin the testing required for a Preliminary Flight Rating (PFR) which will enable the FARA Competitive Prototypes (CP) to conduct their first flights and will initiate the Apache and Black Hawk Developmental Testing. Following Apache and Utility integration and full qualifications, the program will seek a Milestone C, initiating the Production and Deployment (PD) phase of ITEP in late FY24.

As the ITEP progresses, the ATE Project Office continues to manage the T700 and T55 engine programs. With four decades of service, 50 million flight hours, six major performance upgrades and integration into multiple premier helicopter platforms, the T700 is the foremost military turbine engine. In 2020, the T700 engine program oversaw a five year international repair and overhaul program, completed two Component Improvement Program (CIP) events, continued fielding the redesigned P09 Enhanced Digital Engine Control Units (EDECUs) and continued qualification of an enhanced durability configuration for the Stage 1 Blisk. The T700 Program is inching closer to having a single configuration of engine in both the AH-64 and UH-60 fleets and expects to obsolete the -701C configuration by the end of the year leaving a pure fleet of nearly 6,000 x 701D engines. The T55 engine has reached 12 million hours of operation powering the Chi-



Figure 1: Increasing power capability gaps will impact future readiness if not addressed.

GRAPHIC BY ATE PROJECT OFFICE AND GE AVIATION, 2020

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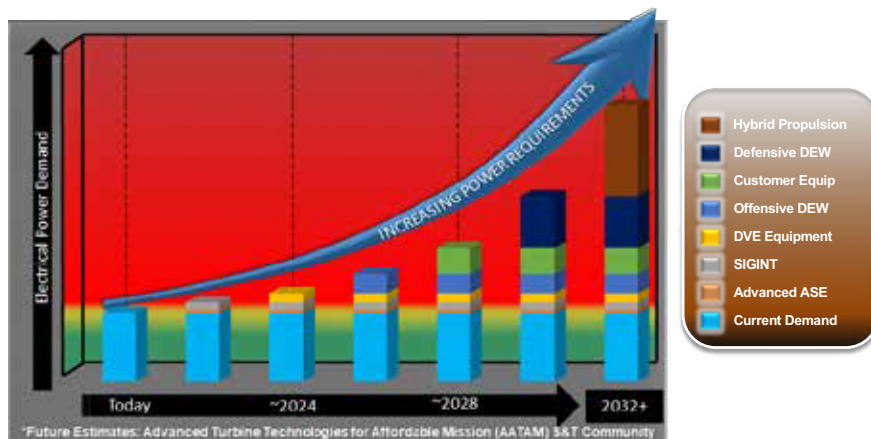


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EPS Problem Statement



Aviation Platforms Have Electrical Power Capability Gaps Today and Are Not Postured for Future Multi-Domain Operations

Figure 2: Increasing power capability gaps will impact future readiness if not addressed.

nook CH-47F and MH-47G helicopters. The T55 engine program completed a successful T55 Program Management Review and is actively evaluating future power requirements and solutions for the heavy lift fleet.

Electrical Power Systems

The Electrical Power Systems (EPS) team was founded by the ATE Project Office to address the increasingly widening gap between current aircraft electrical power capability and demand caused by a continued reliance on 1970s and 1980s technology. By utilizing the enduring platforms as technology incubators, the EPS team will inform FVL

requirements, reduce future risk and streamline technology integration of common systems for FVL and enduring fleets. EPS initiative is a tier two modernization priority effort for the development of a Modular Open Systems Approach (MOSA) compliant electrical systems architecture of smart power systems, to address current electrical power gaps and to meet future power requirements holistically. Integration of smart power systems into aircraft requires better management of the power being generated, which offers opportunity to increase the power available to an aircraft with existing technologies, and to ensure future integration of systems by

embedding the MOSA design.

At the recent Association of the U.S. Army's conference in Washington, D.C., BG Robert Barrie, PEO, Aviation, touched on the MOSA methodology as the antithesis of past programs' stovepipe processes that "[W]ill no longer work." The MOSA compliant electrical systems open architecture of smart power systems allows efficient utilization of power sources (APU/SPU, generator, batteries) by incorporating systems that can communicate and allocate needed capabilities precisely where they are needed and in real time.

The Future

Fighting and winning a conflict against a near peer competitor will require more than just talented and trained pilots. It necessitates designing, developing and delivering the most capable aircraft in the world in addition to the power systems from which the aircraft relies on. As the T700 and T55 continues to provide those reliable power solutions today, and ITEP on the horizon, soon, this discussion will include more than just fossil fuel based power generation as hybrid / all electric solutions become more feasible.

COL Roger Kuykendall is the Aviation Turbine Engines Project Manager within the Program Executive Office for Aviation, Redstone Arsenal, AL; Cindy Mitchell is an Avion employee supporting the ATE PO for strategic communications.

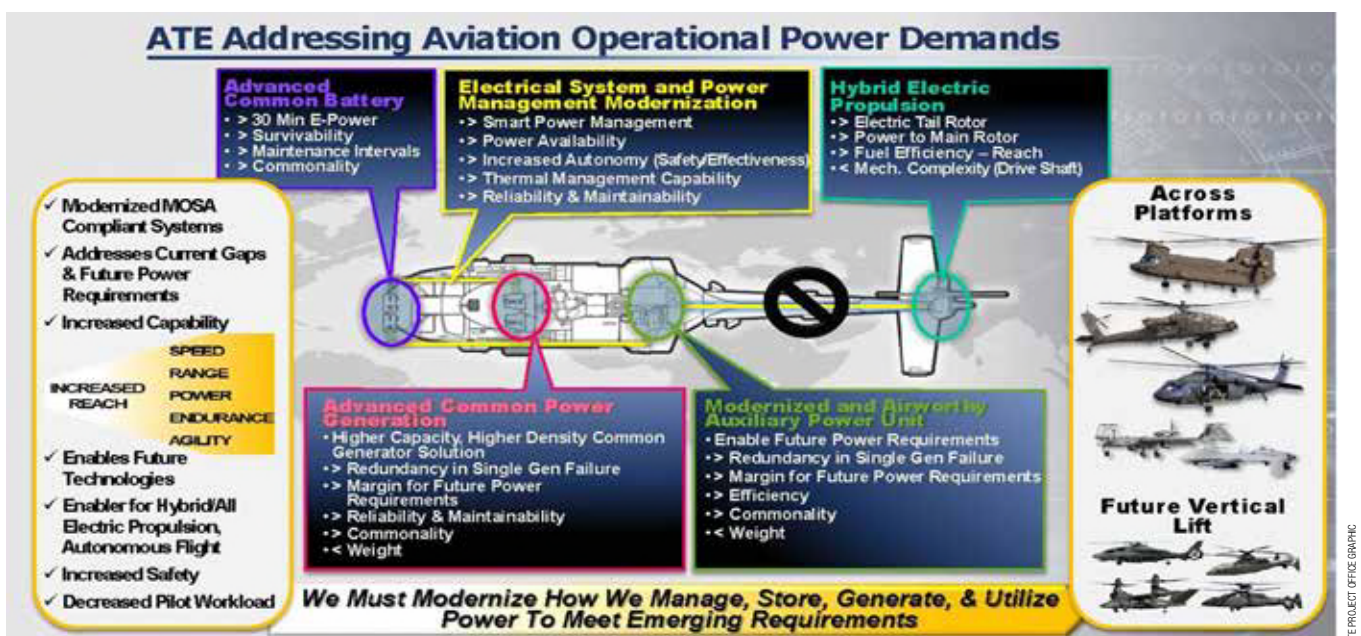


Figure 3: Holistic approach to meeting growing operational power demands to posture enduring and future fleets for dominance in MDO.



former Branch Chief to Emeritus status on our standing board—LTG (Ret.) Jim Pillsbury and MG (Ret.) Jim Myles, and MG (Ret.) Rudy Ostovich. Welcome aboard, gentlemen.

Announced at the NEB were two new National Executive Board Vice Presidents. As I looked across the spectrum of our aviation family, there are many professionals in industry and many professional Department of the Army Civilians that share the same passion for Army Aviation that we all do. For that reason, I have created a VP for Industry and a VP for Army Civilians, and to fill those positions, I searched for and found career professionals. Cole Hedden

has agreed to serve as our VP Industry and Ray Sellers will serve as our VP for Army Civilians. Welcome to you both.

Lastly, from the NEB, an issue carried over from previous NEBs was to conduct a holistic review of the Hall of Fame process. Very soon, we will be appointing a team of Hall of Fame members to conduct this review. We will be seeking advice and counsel from across our professional organization to ensure we get this right. More to follow on this sensitive and critical endeavor.

Your AAAA National Executive Board, a total board of volunteers, is working diligently to help make the chapters better and stronger. That said,

the chapters are our lifeline and the reason we exist. I encourage you all to get out and support your local chapters. What makes us so special in aviation is our passion and the relationships we build over our careers. Reach out and mentor the young soldiers, warrant officers, officers, industry, and civilians, showing them the value of being part of this unique professional team. They won't see it and appreciate it if we don't demonstrate it. They have to see value, and AAAA is supposed to be fun!!!

*MG Tim Crosby, U.S. Army Retired
35th President, AAAA
tcrosby@quad-a.org*

► News Spotlight

Aviator's AI Flight Training Enhancement Device Wins Dragon's Lair Challenge

Army 1LT Mahdi Al-Husseini, a Black Hawk pilot and platoon leader with Company C, 3rd Battalion, 25th Combat Aviation Brigade, in Hawaii won the Dragon's Lair Episode 5 Innovation Challenge conducted by XVIII Airborne Corps on September 27 at Fort Bragg, NC.

His Aura device, which includes a camera and a touch screen tablet with algorithms and software that he and his project partner, hometown friend and fellow Georgia Institute of Technology alumnus Joshua Barnett, created, basically uses the camera to capture, record and scrape the gauge information from not only the Black Hawk but any aircraft. This allows a pilot to see virtually any weaknesses or strengths in executing maneuvers and how to adjust for an objectively better outcome. The data would be available over the course of a pilot's career, monitoring performance over time. Trainers could also compare pilot data on the same platforms across the Army and spot areas to focus on for training, remediation or even technological improvements.

Al-Husseini started serious work on the project in October 2020, and since then, 64 aviators and 17 civilian pilots have used it during his tests. Al-Husseini already has a patent pending on the device, and a side company with his friend Barnett to develop it for civilian use and intend to provide an irrevocable license for military use, if selected by the Army or DoD.

Al-Husseini is the first non-Corps Soldier to win the Challenge which is focused on encouraging creative thinking across the U.S. Army and solicits ideas from Soldiers of any career field or background, and their families, in order to spur innovation to better quality of life and improve the service as a whole.



U.S. Army 1LT Mahdi Al-Husseini, pitches his presentation on artificial intelligence (AI) pilot performance feedback.



U.S. ARMY PHOTOS BY SGT MARGHAN BARNES, 82D ABN DIV PUBLIC AFFAIRS

Future Ecosystem thru Partnerships, Technology Maturity and Experimentation

By Mr. Dan Bailey



A UH-60 serves as a surrogate for the Future Attack Reconnaissance Aircraft (FARA) demonstrating a prototype Modular Effects Launcher at Project Convergence 2021, Yuma Proving Ground, AZ.

Future Vertical Lift (FVL) is poised to provide an ecosystem that enables transformational maneuver and tempo for the Joint Force Commander thru domination of the lower tier of the air domain and accelerated joint kill chain through decision dominance. Over the past year, the FVL Cross-Functional Team (CFT) continued to expand partnerships and synchronize outcome-oriented technology maturity and experimentation to produce the FVL ecosystem. Establishing the *Experimental Demonstration Gateway Event (EDGE)* in May 2021 at Dugway Proving Ground, Utah, provided an opportunity to focus on FVL-enabled capabilities and technologies to be demonstrated as part of the larger Army Futures Command (AFC) *Project Convergence (PC)* in October-November 2021 at White Sands Missile Range, New Mexico, and Yuma Proving Ground, Arizona.

There is no better way to develop and maintain disciplined, knowledge-based requirements and acquisition plans than experimentation in a relevant environment with operational forces and joint and coalition partners. Operationally-based use cases allow users to 'play in the dirt' with developing technology to advance interoperability and mature

the adaptive network. Ecosystem level Modular Open Systems Approach (MOSA) coupled with increased reach, survivability and lethality enables dominance. Such an ecosystem-level MOSA requires each entity within the system as well as the connections and interactions between the entities to embody the attributes of openness. This complex system engineering problem set is being exercised throughout the experiments. The EDGE and PC experiments will remain the primary path of informing and developing the FVL ecosystem. In future events, the FVL CFT intends to expand coalition and joint partnership involvement, execute theater realism, and expand network resiliency.

A Complement of Partnerships

The FVL CFT partnered with the CFTs for Soldier Lethality, Synthetic Training Environment, Long Range Precision Fires, Network, and Assured Positioning, Navigation and Timing (APNT); four separate technology laboratories across AFC; DoD Strategic Capabilities Office; more than 30 industry partners; Special Operations Command (SOCOM); and the 82nd Airborne Division during EDGE 21. Two operationally-based use cases demonstrated

fundamental technologies required to improve interoperability and the Army and Joint kill chain. Both use cases were executed by the onsite 82nd Division Tactical Command Post (DTAC). Utilizing Air Launched Effects (ALE), a surrogate Future Attack Reconnaissance Aircraft (FARA) with Full Spectrum Targeting and Aided Target Recognition capabilities, SOCOM unmanned aircraft systems, an Army strategic intelligence asset, and the 82nd DTAC, a joint fires use case demonstrated efficient kill chains from strategic to tactical levels across the division area. This required cross-domain (classification levels) data sharing across multiple frequencies and waveforms to populate a Common Operating Picture (COP) for swift fires decision making. On a surrogate Future Long Range Assault Aircraft (FLRAA), the 82nd executed an Integrated Visual Augmentation System (IVAS)-enabled air assault. This demonstrated for the first time ALE performing route and objective reconnaissance ahead of the assault force to provide the ground force commander real-time threat information on the IVAS and connectivity between his forces on multiple aircraft to adjust last minute tactical plans prior to landing. Ground forces were able to seamlessly transition from the airborne-mounted connectivity to their organic radios upon landing and take control of the ALE for further mission requirements via the Army Tactical Assault Kit handheld device. At the conclusion of EDGE 21, there were 56 first-time events spanning multiple technologies and MOSA principles including lethal and non-lethal effectors and advanced teaming behaviors.

Expanding the Scope

At PC21, FVL expanded the scope of advancing interoperability across the Army and Joint forces though involvement in five of seven use cases with additional partners like the Defense Advanced Research Projects Agency, U.S. Army Intelligence & Security Command, and Artificial Intelligence & Integration Center. Added use cases beyond EDGE involved an unmanned aerial resupply, network thickening via long distance relay, simultaneous control of multiple ALE from ground and airborne operators using Scalable Control Interface, collaborative ALE threat detection and identification, electronic warfare systems, exercise of up to eight waveforms, and advanced medical evacuation (MEDEVAC) capabilities. Munition and ALE launches from the new Modular Effects Launcher (MEL) showcased MOSA between the platform and launchable subsystems. Along with the MEL, live fire demonstration of the new XM915 20mm cannon being integrated to FARA indicates tangible technology on pace to produce the envisioned FVL lethality and adaptability. FVL also participated in APNT CFT's Positioning, Navigation, and Timing

Assessment Exercise (PNTAX). FVL flew multiple APNT solutions and Visual-Based Navigation systems within a threat based contested area with great success. Overall, this effort involved 70 technical objectives with 17 distinct FVL capabilities and an additional 21 first-time events.

The length of this article does not allow discussion of the technology advancement taking place and being exercised. It only scratches the surface of what FVL will bring to the warfighter, and FVL is continually looking for additional opportunities and gaps. This year the FVL CFT established a new priority and thrust area for its Science & Technology (S&T) portfolio and partners – electrification. It is time to go green, and FVL will lead the way in rotorcraft electrification. The commercial Vertical Takeoff and Landing community focus is on fully-electric platforms, which still have limited utility. The FVL thrust will be to use electrification in optimum ways, such as a hybrid configuration. Outside the numerous benefits a hybrid electric configuration can provide, technologies are now available to take advantage of such a configuration. A comprehensive roadmap is being developed.

Funding

Lastly, this year marked the first year of funding projections for the S&T portfolio that will be beyond Increment 1 fielding of FARA, FLRAA, ALE, and the ecosystem. Therefore, the Army Aviation enterprise is working on an updated Aviation S&T Strategic Plan (ASSP), shifting this version of the ASSP from functionally aligned investment to use-inspired investment. This framework provides focus on future problem areas and forces early stakeholder alignment for transition. The final plan will be Army Aviation enterprise informed, supported, and approved with intent to share with industry, so that internal research and develop funding can be aligned to the roadmaps.

The future of Army Aviation could not be more exciting as it continues to successfully progress toward a family of next generation of rotorcraft enabled by state-of-the-art reach, survivability, and lethality.

Mr. Dan Bailey is the Deputy Director for Plans, Programs, and Execution for the Future Vertical Lift Cross-Functional Team at Redstone Arsenal, AL. He is a member of the Pennsylvania National Guard.



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CCAD Embraces Additive Manufacturing – A New Pipeline For Parts

By Ms. Kathleen Pettaway-Clarke



Above: Ronnie Cervania, a mechanical engineer at CCAD, displays a shop aid.

Left: Tool engineer Mark Mireles displays several 3D printed shop aids at CCAD.

additive manufacturing. Utilizing laser scanners, probes, and SolidWorks 3D computer-aided drafting software, CCAD has mastered 3D scanning of support parts. The artisans upload those models into the additive manufacturing machine and immediately print the items on the spot. As Original Equipment Manufacturer (OEM) transitions fully toward modeling instead of blueprints, the opportunity to exploit this technology has increased exponentially, and CCAD stands ready to take advantage.

What is AM

Additive manufacturing (AD) is a methodology new to Army aviation applications, but not the aircraft industry. By way of 3D printing, the AD process joins various materials to construct a solitary part, unlike the subtractive manufacturing process. Like chiseling a work-of-art, subtractive manufacturing removes unwanted material. While in contrast, additive manufacturing utilizes computer-aided machines to form a part layer-by-layer. The process lends itself to produce parts of intricate geometry that would be extremely difficult or even impossible to manufacture using subtractive methods.

There are seven categories of AD processes: powder bed fusion, binder jetting, direct energy deposition, extrusion, jetting, sheet lamination, and vat photo-polymerization. The specific advanced manufacturing technologies at CCAD engages in additive manufacturing, including cold spray

The Corpus Christi Army Depot (CCAD) and U.S. Army Combat Capabilities Development Command (DEVCOM) have projects to help define the role of advanced manufacturing in Army readiness. Shortly, units throughout Army aviation will be able to choose and print replacement parts in the field from a database, thus helping solve a supply challenge.

For decades, the Directorate of Manufacturing and Process Production, Tool & Die Branch has worked with

and 3D polymer printing. “Additive manufacturing can be used to reduce weight, minimize waste, and optimize design stress points that can be prone to failure,” said Kevin Rees, DEVCOM Aviation & Missile Center (AvMC) Chief of the Maintenance Airworthiness Engineering Division.

Additive manufacturing is considered a transformative, game-changing approach for the Army. It is catapulting CCAD, an organic enterprise, closer to its modernization goals of aircraft production and supporting the future vertical lift aircraft by migrating older systems into the digital future. As a result of modernization momentum, the Manufacturing Engineering Branch (MEB), in partnership with the Aviation & Missile Center (AvMC), Prototype Integration Facility (PIF), has developed the Advanced Manufacturing Engineering Lab (AMEL). AMEL currently has Blue Light Scanning (BLS) and reverse engineering capabilities.

“In a way, this is a new era of engineering for Army aviation, and so we all feed off each other’s ideas and problems,” said Rees.

Blue Light Scanning

BLS is a technology that allows CCAD to capture the schematics of an asset and use that data in conjunction with existing technical information to reverse engineer the part. This will enable CCAD to develop tooling for the manufacturing of the element itself.

This technology is advantageous for repairs on aircraft that no longer match the original manufacturer’s print. For example, an aircraft could require new parts after rough landings because a damage is sustained to parts, varying their actual dimensions. The blue light can scan a sample part of the aircraft so that a manufactured blueprint can be provided to fabricate a new element to fit the aircraft. With this technology, the blue light can take us into a whole new dimension of capabilities at CCAD to provide the warfighter with what they need.

Electronic files for modern aircraft production, to support the modern-day warfighter, are preferred over paper schematics. The U.S. Army Aviation and Missile Command collaborate with Wichita State University to develop a virtual model of the UH-60L Black Hawk using 3D scanning technologies.

According to 3D-engineering.net, “Blue Light is a version of a structured light scanning technology. It operates by combining a projector, camera, and lens system to allow data collection. The projector creates a pattern of light and dark areas on the object being measured.”

Advantages

The advantage of this technology is shortening the wait-time for OEM parts. More importantly, additive manufacturing balances the benefits of cost, program production, and safety regarding logistical challenges like fit, form, and functional replacement to existing end items or replacement. DEVCOM and CCAD are fostering a cohesive understanding of terminology, which will affect the enterprise — for example, the differentiation between ground-based and aviation assets.

The local manufacturing department has utilized BLS technology towards Apache tail-cone skin, which usually has over a year lead time to purchase. The fabrication of fixtures for aircraft skins numbers in the hundreds. The blue-light

scanning technology captures data points of the aircraft and is stored in the Computer Numerical Control (CNC).

The Depot used the data points to manufacture precise molding fixtures for fuselage parts in addition to the skins. Scanned dimensions of original fixtures are imperative when assets are lost or are damaged. Within hours equipment schematics can be retrieved from CNC equipment and manufactured. Also, this technology performs the First Article Inspect to ensure the dimensions are correct for the aircraft.

“Our engineers design replacement parts for these helicopters that the machinist inserts into the aircraft. Additive manufacturing is quicker to make a mold than to use non-dimensional drawings. It’s an evolving technology with many applications.” Clarence Hitchings, Chief Liaison Engineering Branch, DEVCOM AvMC.

Applications

Blue light technology has many applications. Rees continued, “Being proactive, CCAD and DEVCOM personnel keep track of the projects performed in the field so that there is a repository of lessons learned.”

The two organizations work in unison with one another. The ability to manufacture complex 3D forms directly from digital data can eliminate the need for complex tooling and specialized work tool motions. This allows for reduced manufacturing lead times and possible localized production, contributing towards more efficient supply chain systems.

“The new technology would have a 50% cycle reduction to our conventional processes,” said Leonel Narvaez, CCAD.

“Each part has its mold and associated costs,” said Patrick Thomas, DEVCOM AvMC aerospace engineer. “That cost versus the cost of one machine capable of producing is in low numbers. Once you reach 100,000 of these parts, traditional manufacturing methods are often more cost-effective.”

Additive manufacturing is quickly becoming a priority for the U.S. Army Materiel Command since utilizing a 3D printer aids in the warfighters’ readiness to receive aircraft parts faster.

What Does That Mean Exactly?

According to the article “U.S. Army and WSU creating a digital twin of Black Hawk Helicopter” by Tess Boissonneault, “In the scanning process, a part will be completely disassembled so that the component can be captured and stored as a digital twin. An accessible virtual database of these parts will make it easier to source replacement parts.”

“In sustainment engineering, we have much older weapon systems to maintain, and CCAD’s artisans play an important part in this,” said CCAD liaison engineering branch chief Clarence Hitchings. “The technology is transformational across Army aviation, which provides better mechanical efficiency, less material wastage, shorter design cycles, and less manufacturing lead times.”

Evolution takes time, but CCAD is committed to supporting the warfighter into the 21st century.

Ms. Kathleen “Kat” Pettaway-Clarke is the lead public affairs officer at Corpus Christi Army Depot, TX. Mr. Roland Delafuente and Mr. Ernest L. Forney contributed to the article.

First Live AAAA Symposium Since 2019!

By CW5 Adam Jarvis



APR PHOTOS BY KEVIN BEHRENS/KON, AUBREY CANDLES, DAVE HULTON

The Army Aviation Association of America sponsored a restructured and expanded Annual Joseph P. Cribbins Training, Equipping and Sustainment Symposium 15-17 November 2021 at the Von Braun Center in Huntsville, AL. This is the first in-person event that AAAA has sponsored since the 2019 Annual Summit in Nashville due to the COVID-19 outbreak and the challenges that it caused. This opportunity allowed both Army Aviation and industry to regroup after so much time apart and to discuss the current state of Army Aviation and the future focus.

The Aviation community was out in full force with more than 2,100 attendees on-hand over three days to witness two years of unit and individual award presentations and two classes of inductees into the Army Aviation Hall of Fame.

MG (Ret.) Tim Crosby, the current AAAA president, opened the event with a warm welcome to all the friends and partners in Army Aviation who have been unable to collaborate over the past two years. His message of AAAA's support to "you and your family" focused on the Association's commitment to the soldier-family team.

LTG Eric Peterson delivered the keynote address for the first full day

and congratulated the winners of the 2019 and 2020 AAAA National Individual and Unit Awards together with the Aviation Branch Chief, MG David Francis. NOTE: The January 2022 issue will have the full coverage of the 2019 and 2020 National Awards as well as the Hall of Fame Classes of 2020 and 2021.

MG Francis, and BG Claire Gill, the director of Army Aviation, gave detailed updates about where we are and where we are going in Army Aviation. The theme of "Synchronizing Across the Army Enterprise" was evident to the capacity crowd who attended the morning's presentations.

The afternoon breakout sessions were attended in numbers unexpected for this event. The Aviation community was keen to hear the functional leaders' thoughts in the areas of Army Aviation's virtual training and simulations, chaired by LTC (Ret.) Jan Drabczuk. The interface discussions with the project managers from the Attack Helicopter, Future Attack Reconnaissance Aircraft, Unmanned Aircraft Systems, and Aviation Mission Systems and Architecture project offices, their industry counterparts, and the Recon/Attack Capability Manager, moderated by MG (Ret.) Walter Davis, and the discussions moderated by MG (Ret.) Walter Golden with PMs

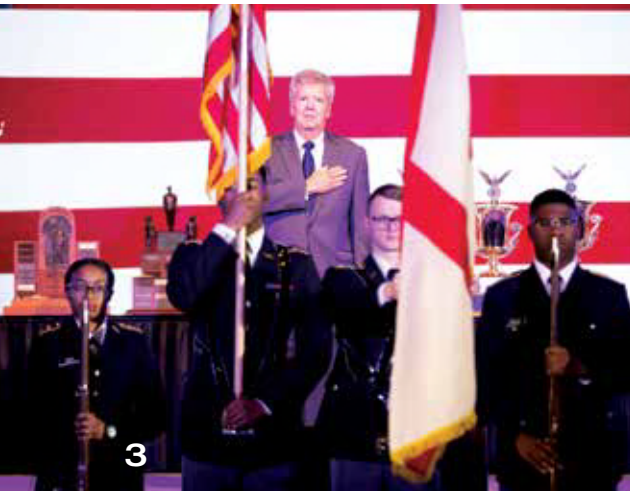
Utility Helicopter, Cargo Helicopter, Future Long-Range Assault Aircraft, and Fixed Wing project offices and their industry representatives and ACM Lift were all standing room only.

That same evening, six exceptional Aviation soldiers were inducted into the Army Aviation Hall of Fame – LTC Ace Cozzalio (deceased), CW5 Douglas Englen and SGM Gregory Chambers for 2020 and CPT (Ret.) James Stein, CW5 (Ret.) Daniel Jollota and CSM (Ret.) Todd Glidewell. Each one of these inductees made a lasting and indelible mark on Army Aviation.

LTG Thomas Todd III, the deputy commanding general for Acquisition and System Management at Army Futures Command delivered the keynote address Wednesday morning and congratulated the 2020 and 2021 AAAA National Functional Award winners together with MG Todd Royar, the CG of Aviation and Missile Command.

Following the awards, Royar gave the crowd a look at current and future sustainment with updates by BG Robert Barrie, PEO Aviation, BG Phil Ryan, Army Special Operations Aviation Command, and MG Wally Rugen, director of the Future Vertical Lift Cross-Functional Team rounding out the morning.

Once again, the breakout sessions



were standing room only for panels on Predictive Prognostic Maintenance, moderated by MG (Ret.) Jim Myles; the Digital Engineering Environment, moderated by BG (Ret.) Steve Mundt; and Advancing Air to Ground Communications, with Dr. Bill Lewis moderating MG Wally Rugen, BG Jeth Rey, director of the Network CFT, and LTC Jonathan Mulder, the chief of Systems Integration Management for ARSOAC.

The AAAAA Scholarship Foundation and Army Aviation Museum Foundation held a luncheon for their donors which resulted in more than 25 companies making donations.

During the Early Bird reception on Monday afternoon, the AAAAA Tennessee

see Valley Chapter presented their Mission Area awards to eight individuals for their outstanding support to the PEO Aviation project offices.

With the largest participation ever, more than 111 exhibitors and over 2,100 attendees, this new format for Cribbins was a great success and will be used going forward. Mark your calendars now for 14-16 November 2022!

1. More than 2,100 people attended the Cribbins Symposium... the largest crowd in the history of the event.

2. AAAAA Sr. Vice President, MG (Ret.) Walt Davis (far left) moderates one of six working groups at the 2021 Cribbins Symposium

3. AAAAA President, MG (Ret.) Tim Crosby presides over the opening ceremony.

4. The 2021 Cribbins Symposium held the largest number of exhibits in its history!

5. MG (Ret.) Crosby and MG Francis cut the ribbon officially opening the exhibits at the 2021 Joseph P. Cribbins Training, Equipping and Sustainment Symposium.

6. AAAAA Scholarship Foundation, Inc. industry donors pose for a group photo with Foundation President, BG (Ret.) Mike Flowers (far left) following a donation luncheon on Nov. 17 during the Cribbins Symposium.



7



9

7. Unique procedures were followed for the health and safety of all in attendance beginning with the badge pick-up process.
8. LTG Thomas Todd delivers the keynote address on day two.
9. Army Aviation Branch Chief, MG David J. Francis, provides attendees with a look into the future



8



10



11



12

- of the Aviation Enterprise from his vantage point at the U.S. Army Aviation Center of Excellence.
10. LTG Eric Peterson delivers the opening day keynote address.
11. Army Aviation Museum Foundation, Inc. industry donors pose for a group photo with Foundation Chairman, LTG (Ret.) Mark Curran (center left) and Leah Dunkel, Foundation Manager, following a donation luncheon on Nov. 17 during the Cribbins Symposium.
12. Although she could not attend, Alabama Governor Kay Ivey sent a video greeting to the attendees wearing the Knight of the Order of St. Michael medallion she received the previous month from AAAA President, MG (Ret.) Crosby.

13. Some of the more than 110 exhibits at the 2021 Cribbins Symposium.
14. AAAA Tennessee Valley Chapter Mission Area Award winners following the awards presentation at the AAAA booth during the opening of the exhibits at the Cribbins Symposium. From left to right: Mr. Jimmy Downs (for Stephanie Crosby), Ms. Wendy Wilson, Mr. Derryn Jones, Ms. Sofia Bledsoe, Ms. Jennifer Rusak (for Elise Garrison), Ms. Meghan Murphy-Ruddick, Ms. Kristi Vowell
15. Breakout sessions such as this one on Prognostic and Predictive Maintenance (PPMx), chaired by MG (Ret.) Jim Myles, were extremely popular.



13



14



15

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NSA '47 and Army Aviation, Part II

By Mark Albertson

Editor's Note: This is the second article in a four part series.

MAXIM LVII:

When a nation is without establishments and a military system, it is very difficult to organize an army. . .

Napoleon Bonaparte¹

Centralized Control II

Early in 1943, General Eisenhower's command responsibilities took in being theater commander for Allied forces in North Africa; this included Montgomery's Eighth Army which was pushing Rommel west across the North African desert and, the combined Anglo-American air assets in theater which became known as the Mediterranean Air Command. Mediterranean Air Command was commanded by Air Chief Marshal Sir Arthur Tedder, who enjoyed equal status among the forces contained under the umbrella of Eisenhower's command. Within this structure, no one service enjoyed prominence over the others.²

General Carl A. Spaatz commanded the Northwest African Air Forces. As theater commander, Spaatz commanded Anglo-American air units within this theater; a responsibility which included Air Vice Marshal Sir Arthur Coningham's command, of the Anglo-American Northwest African Tactical Air Force. Coningham was a proponent of the control of air assets remaining with the air commander, not the ground commander. He also believed that before aerial assets were committed to the support of ground forces, air superiority over enemy airpower had to be established.



General Eisenhower, commander of North African Allied Forces in 1943, believed in control of aircraft by aircraft commanders; but even as overall Allied commander, he was commander of the ground forces; hence, Army ground forces, in the end, held primacy over the use of military assets within the total Allied effort.

It is important to understand, though, the effect on command responsibilities and interaction that was posed by the U.S. Army's defeat at Kasserine Pass in February 1943. Deputy commander of the Northwest African Tactical Air Force, Brigadier General Laurence Kuter, conducted a study on the battle; which resulted in a change of policy. Eisenhower, in essence, agreed with the airman's doctrine on the employment of airpower. And as policy, this was reflected in the July 21, 1943, FM 100-20.³

By mid-1943, the course toward an independent air arm within the postwar American armed forces was pushed, prodded, channeled and, even assured as it was by the rapidly growing sophistication and expansion



General Laurence S. Kuter, as deputy commander of the North African Tactical Air Force, conducted a study of the U.S. Army defeat at Kasserine Pass, February 1943. This study translated into the tactical use of airpower and distribution of command between ground and air, with War Department Field Manual 100-20: Command and Employment of Air Power, July 21, 1943. A West Point graduate, General Kuter began his Army career with the Field Artillery before transferring to the Army Air Corps. He concluded his military career with the United States Air Force in 1962 after 35 years of military service.

of modern war. And for the United States, American invention, innovation and specialization of tasks fostered the reality that the growing sophistication of airpower was beyond the prowess of ground forces officers. Well-educated and well-trained personnel were required to properly employ airpower in modern war.

Yet there remained requirements of an aerial variety and of a tactical sort which could still be handled with assets organic to the Ground Forces; especially those of the most rudimentary nature. The aerial direction of artillery fire being one such example; as was courier service, low-level observation and reconnaissance, light transportation, etc. But even here, and history will bear this out, the growing sophistication of

war on the tactical level would require Army Aviation to improve and upgrade training to handle more sophisticated aircraft and equipment.

This, of course, would be viewed by the Air Force as a threat to its interpretation of Roles and Missions among the armed forces. Thus ensued the following attempts to smooth the organization of the armed forces following 1945; in addition to establishing a clear understanding of the roles and missions of each of the services. This, of course, was the National Security Act of 1947.

Such will be the focus of Part III, "NSA '47 and Army Aviation."

ENDNOTES:

1 – See page 80, MAXIM LVII, Napoleon's Art of War, translated from the French by Lieutenant General Sir G.C. D'Aguilar, C.B.

2 – "In practice, the service 'equality of Eisenhower's command was attenuated somewhat by the fact that while Tedder was responsible for airpower within the command, Eisenhower himself served as his own army component commander, giving the land forces a measure of priority; this was a practice that Eisenhower was to continue as Supreme

Commander in Europe," See page 6, Chapter 1, "The Doctrinal Background," Interservice Rivalry and Airpower in the Vietnam War, by Dr. Ian Horwood.

3 – See pages 1 and 2, War Department, Field Service Regulations, Command and Employment of Air Power, FM 100-20, July 21, 1943:

"1) Relationship of Forces.—Land Power and Air Power are co-equal and interdependent forces; neither is an auxiliary of the other.

"2) Doctrine of Employment.—The gaining of air superiority is the first requirement for the success of any major land operation. Air forces may be employed against enemy sea power, land power and air power. However, land forces operating without air superiority must take such extensive security measures against hostile air attack that their mobility and ability to defeat the enemy land forces are greatly reduced. Therefore, air forces must be employed primarily against the enemy's air forces until air superiority is obtained. In this way only can destructive and demoralizing air attacks against land forces be minimized and the inherent mobility of modern land and air forces be exploited to the fullest.

"3) Command of the Air.—The inherent flexibility of air power is its greatest asset. This flexibility makes it possible to employ the whole weight of the available air power against selected areas in turn; such concentrated use of the air striking forces is a battle-winning factor of the first importance. Control of available air power must be exercised through the air force commander if this inherent flexibility and ability to deliver a decisive blow are to be fully exploited. Therefore, the command of air and ground forces in a theater of operations will be vested in the superior commander charged with the actual conduct of operations in the theater, who will exercise command of air forces through the air force commander and command of ground forces through the ground force commander. The superior commander will not attach Army Air Forces to units of the Ground Forces under his command except when such Ground Force units are operating independently or are isolated by distance or lack of communication."

Mark Albertson is the award-winning Army Aviation Publications Historian and a contributing editor to ARMY AVIATION magazine.

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AAAA Chapter Affairs

By LTC (Ret.) Jan Drabczuk

I greatly appreciate the support from Col (Ret) Andy Doebring, the Gold Standard Chapter President for authoring and sharing this information to our membership.

The Gold Standard Chapter

The Gold Standard Chapter traces its history back to 1991 when AAAA approved the establishment of the Flying Tigers Chapter, headquartered at Fort Knox, KY. Since then, the chapter promoted all aspects of Army Aviation and supported their local Aviation Soldiers, Civilians and Family Members.



In 2017 the name was changed to the Gold Standard Chapter to provide better representation to the larger Army Aviation footprint at Fort Knox. This growth has expanded from members primarily affiliated with 8-229th Aviation Regiment (AHB) to the Army Reserve Aviation Command (ARAC), Human Resources Command Aviation Branch Personnel Management (Officer, Warrant Officer, NCO and Enlisted), 244th Expeditionary Combat Aviation Brigade, 1st Theater Support Command, 5th Corps, Aviation Support Facility – Fort Knox, and C Co (TAC), 6-52nd Aviation Regiment (TAB), C Co (Medevac) & F Co (ATS), 5-159th Aviation Regiment (GSAB).

With the chapter renaming action a need arose to also change the chapter logo. Fort Knox is known as the home of the United States Bullion Depository which served as an inspiration for the name change to Gold Standard and seemed appropriate for a new logo which depicts two (999.9 pure) gold bars.

Membership

Operating from the Fort Knox, KY area, the chapter supports the Central Kentucky and Southern Indiana regions. Current membership sits at 190 personnel, which is consistent with monthly 2021 numbers. In May of 2020, the Gold Standard Chapter had increased its membership to above 150 and was added to the AAAA National Executive Board. The goal for the remainder of 2021 and 2022 is to increase to a 200+ member chapter.

Scholarship Program

The annual scholarship program is one activity the Gold Standard Chapter continues to support. Two \$1,000 scholarships are awarded each year. The Gold Standard Chapter Scholarship awardee for 2021 was Miss Van-Anh N. Le of Louisville, KY, while The Extortion 17 Crewmember Memorial Scholarship awardee was Miss Elisa A. Budny of Danville, IN. The chapter awards these as perpetual matching scholarships with the goal of adding another one and/or increasing the awarded amount for next year.

Activities

Throughout the year the chapter supports and hosts various activities on Fort Knox. These include Right Arm Night, Chapter Meetings, Unit Family Day Activities, Hail & Farewells, and the ARAC Leadership Summit. Additionally, various fundraising activities are conducted to raise funds for scholarships and other requirements.

The chapter takes the opportunity at many of these events to recognize and present approved AAAA awards to deserving individuals demonstrating significant contributions to Army Aviation. Outstanding Army Aviation Soldiers, Civilians and Family Members are continually nominated and recognized with the Order of St. Michael, Knight Order of St. Michael, and Our Lady of Loreto awards. Another enduring award effort within the chapter is the recognition of both the Soldier and NCO of the Month.

Moving Forward

The Gold Standard Chapter is poised to continue its outstanding support to the Army Aviation community around Fort Knox, KY. As activities increase and emerge from the pandemic, the chapter plans to increase opportunities to bring everyone together. High upon the list is a primary fundraiser to greatly increase overall support to the scholarship program and chapter events. Feel free to stay up on all planned activities by following the Gold Standard Chapter Facebook page found at @GoldStandardChapterAAAA. As always, we encourage anyone who is interested in joining or volunteering to help this great chapter to contact any of the chapter officers. President, COL(Ret) Andrew D. Doebring at andyinbalad@aol.com, Senior VP, CW5(Ret) Chris James at misterusa47@gmail.com, VP Operations, MAJ Steve Kramer at cosmo6kramer@icloud.com, VP Scholarships, CW3 Tim Dailey at tim.alan.dailey@gmail.com, or VP Chapter Activities, MAJ Azizi Wesmiller at azizi.v.wesmiller.mil@army.mil

Support

Feel free to contact me if you need help for your Chapter, Executive Board support, would like your Chapter featured in the AAAA magazine or to obtain clarification of National procedures. I can be reached at jan.drabczuk@quad-a.org.

LTC (Ret.) Jan S. Drabczuk
AAAA VP for Chapter Affairs



AAAA Chapter News

Savannah Chapter Golf Tourney



CHAPTER COURTESY PHOTOS

The Savannah Chapter held their annual golf tournament on November 11 with over 140 players. They raised \$12,600 for the scholarship fund. Gulfstream Aerospace donated \$5,000 and has stated that they are locked in for an annual donation at the tournament each year. Pictured (left to right) are CSM Quentin Fenderson, 3rd Infantry Division senior NCO; BG (Ret.) Michael Flowers, AAAA Scholarship Foundation President; Davis Purdom, Gulfstream Military Recruiting



Specialist; COL (Ret.) Michael McFadden, Chapter President; Dennis Boatright, Gulfstream Human Resources Business Partner Director; and MSG Chris Cashell, Chapter VP of Events, Awards, and Treasurer. The chapter Soldier, NCO and Aviator of the Month for October were recognized at the same event. Chapter President, COL (Ret.) McFadden is pictured above shaking hands with (left to right) Soldier of the Month, SPC Rafael Morales, HHC, 3/160th Special Operations Aviation Regiment (Airborne); NCO of the Month, SGT Nickky Otero, A Co, 4-3d Assault Helicopter Battalion; and Aviator of the Month, CW2 Ryan Hoeffer, B Co, 4-3d AHB.

ORDER OF ST. MICHAEL INDUCTEES

Keystone Chapter



CHAPTER PHOTO BY CPT TRAVIS MUELLER

COL Howard R. Lloyd, 28th Expeditionary Combat Aviation Brigade commander, is inducted into the Silver Honorable Order of St. Michael by Keystone Chapter president, LTC Michael Gross, at Fort Indiantown Gap, PA on November 5, 2021. A Master Army Aviator, Lloyd was recognized for his over 30 years of service to Army Aviation, to include a deployment to Iraq and multiple battalion commands, as well as overseeing the transition of the brigade from a heavy CAB to an ECAB. Also pictured is ECAB CSM Sean Livolsi.

UPCOMING EVENTS

JANUARY 2022

- 1 Submission deadline National Awards
- 14 ARMY AVIATION Magazine 2021 Photo Contest Deadline

Narragansett Bay Chapter

COL (Ret.) Paul Peltier

is inducted into the Bronze Honorable Order of Saint Michael by COL John MacDonald, the Narragansett Bay AAAA Chapter President on November 11th during the Infantry Lodge Associates Annual Armistice Day Celebration at the Squantum Association located in East Providence, RI on Narragansett Bay. COL Peltier was recognized for his lifetime of service and his impact to Rhode Island Army Aviation while serving as the State Army Aviation Officer.



CHAPTER PHOTO BY 1SG JOSHUA GAY

ShowMe Chapter

CSM David C. Gail

1107th Aviation Group senior NCO, is inducted into the Bronze Honorable Order of St. Michael, by Group commander, COL Andrew Schulte during a November 6, 2021 ceremony at the Missouri Aviation Classification Repair Activity Depot (AVCRAD) in Springfield, MO. Gail was recognized for his dedicated support to Army Aviation over the past 35 years.



CHAPTER COURTESY PHOTO

OSMs continued on page 89



AAAA Membership Update

By CW4 Becki Chambers

The Membership Corner



U.S. ARMY PHOTO

Last year, I had the privilege of writing about CW5 Mike Behrendt and his wife Lymi. That article was published in the December 2020 issue of our magazine. Mike retired this past October 2021, and I was able to attend the ceremony.

The event started with the Change of Responsibility for the Command Chief Warrant Officer of The Army Aviation Brigade, with Mike relinquishing the position to CW5 Scott Nalley. After a short break, the retirement ceremony started with The Old Guard Fife & Drum Corps marching into the hangar, providing the musical prelude. They are amazing and it was a spectacular way to start the ceremony!

But then something even more special happened during the ceremony. Mike asked for the ceremony to pause for a few minutes so he could right a wrong that had been bothering him for several years. Mike knew that when CW5 Rex Finley had retired after 31 years of service, he had never received the Order of St. Michael award. Mike worked with the leadership of the Washington-Potomac Chapter to rectify this situation. Here is a small part of the write-up for Rex's award:

"CW5 Rex Finley has served with distinction as not only a professional aviator and leader, but as a superior warfighter for over 31 plus years which culminated in his service as the Command Chief Warrant Officer and Flight Standardization Officer for The

U.S. Army Aviation Brigade (TAAB), Joint Force Headquarters National Capital Region and the Military District of Washington (JFHQ NCR/MDW). A technical and tactical expert, CW5 Finley clearly distinguished himself as not only a leader, but also as a Master Army Aviator where he led from the front as both a rotary and fixed-wing aviator flying over 8,500 hours across seven combat deployments, three overseas tours and countless high-profile missions. CW5 Finley also provided critical advice, mentorship, and guidance to not only subordinates but the Command Teams under which he served. CW5 Finley holds the respect of our most senior Army leadership and is a standard bearer for the Army Aviation Branch. Rex's contributions have made a strong and lasting impact on not only the Army, but also the Army Warrant Officer Corps and Army Aviation Branch."

Why am I sharing this story with you? To show that it is never too late to recognize a worthy Soldier. Recognition is one of our 4 pillars – Network, Recognition, Voice, Support. If you know someone that is worthy of the Order of St. Michael, reach out to your local Chapter and work with them to make it happen.



U.S. ARMY PHOTO

Above left photo: From left to right: CW5 (Ret.) Rex Finley, CW5 Mike Zanders, CW4 LoFranco, CW5 "Kit" Parkin, CW5 Aaron Nance, CW5 Scott Nalley, CW5 Mike Behrendt, CW5 Dave Van Vechten, CW5 Chuck Leikam, CW5 Bill Kearns, and CW5 Pat Curran.

Above Right Photo: CW5 (Ret.) Rex Finley and CW5 Mike Behrendt.

And remember about the Order of Our Lady of Loreto. There are spouses out there doing amazing things in support of Army Aviation and they deserve to be recognized. In addition, there is the Knight of the Order of St. Michael for our non-Army Aviation personnel who also deserve recognition.

Be sure to look closely at the picture. That's TEN CW5s, and one CW4, all at the same location! After much debate, it was determined that a grouping of CW5s shall be called a Legion. Credit for the name goes to CW5 Dave Van Vechten.

Please feel free to reach out to me if you have a story to share about one of our members.

CW4 Becki Chambers
AAAA Vice President for Membership



New AAAA Life Members

Aviation Center Chapter
CW4 Clarke Barber
Central Florida Chapter
CW2 Robert Masterson
Colonial Virginia Chapter
CW4 Jesse Dize
Cowboy Chapter
CSM James Swingholm
Frontier Army Chapter
Ronald Swanson
Great Lakes Chapter
James Alford
LTC Gabriel L. Hudson, Ret.
Keystone Chapter
Jeremy Chauvin
Mid-Atlantic Chapter
COL Richard Ferguson
Phantom Corps Chapter
Donald MacWillie
Tennessee Valley Chapter
Laurence E. Thomas, Jr. Ret.
Utah Chapter
CAPT Robert Palmer
Volunteer Chapter
CW4 Brian E. Fields, Ret.

New AAAA Members

Air Assault Chapter
CPT Mansour Albarrak
Rebecca Hangge
Jennifer Hines
Aloha Chapter
Paul Morris
Arizona Chapter
Ray Barry
David Binnarr
Samantha Byers
John Doyel
Tom Hamilton
David Huston
Michael Iacobucci
MAJ Shannon Lancaster
Noel Lasure
Gary Lorton
Wade Schmidt
Mark Spicer
Victoria Swanson
Aviation Center Chapter
CW4 Clarke Barber
Joshua Bryan
Charles Chamberlain
Bill Cooper
CPT Matthew Cooper
COL Thomas Green
Jason Seifert
Badger Chapter
George Gruebling
Battle Born Chapter
Tim Harper
Bluegrass Chapter
CPT Jerome Debord
Cedar Rapids Chapter
Missy Andrews
Les Arnold
Michael Bowling
Chris Cargin

Christine Davis
Jeff Dixon
Mike Flender
Andrew Friend
Brandon Ganey
Kate Helle
Alan High
Chad Hutchinson
Greg Johnson
Tedde Jones
Zach Kuehl
Bill Maly
Todd Prouty
Brian Rinehart
Jim Shaw
Kathy Willett
Central Florida Chapter
Kristy Dixon
Mark Mahaffey
CW2 Robert Masterson
Colonial Virginia Chapter
CW4 Jesse Dize
CPT Samuel Lowell
Julianne Miranda
Connecticut Chapter
Robert M. Swisher
CAPT Thomas Uznanski
Corpus Christi Chapter
Donna Kraidy
Lauro Moya
Kat Pettaway-Clarke
Arnulfo (Arnold) Ponce
Jose Zepeda
Cowboy Chapter
CSM James Swingholm
Empire Chapter
Eric Hathaway
Flint Hills Chapter
LTC Bradley Gates
Follow Me Chapter
Shawn Hoban
Frontier Army Chapter
Ronald Swanson
Gold Standard Chapter
CW4 Justin Powers
CAPT Louis Sinor
Greater Atlanta Chapter
Will Collier
Karl Gardner
Dwight James
Bryce Kammeyer
William McBride
Jason Meade
LTC Neil Paxson
Ryan Stille
Iron Mike Chapter
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Keystone Chapter
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Robert W. Semelsberger
Lindbergh Chapter
Eric Bennett
Lonestar Chapter
SMSgt Shelby Clay

CW3 Jacy Gerald, Ret.
Matthew Mannette
Brian Utermahlen
MacArthur Chapter
Doug Johnstone
Oliver Liu
Tommaso Pusateri
Carlton Rubio
Magnolia Chapter
LTC Merlyn Dungey
Barron Goff
Mid-Atlantic Chapter
Jamie Cole
Kris Knopp
Jeanine Matthews
Joseph A. Oagaro
James Ryan
Abigail Verille
Minuteman Chapter
SSG Jason Dufour
Vickie Stagliola
Jason Voas
Mount Rainier Chapter
Julianne Butler
Gregg Downing
Jun Iida
Mark Kienstra
Penelope Konrad
Kristin Lund
Kevin McNulty
Becky Olson
SPC Idali Rodriguez
Jordan Silva
Paul Szulborski
Heather Ulrich
North Country Chapter
Kirk A. Avery
North Texas Chapter
Sean Bond
Rob Burchett
Aaron-Paul Camele
CW4 William Campbell
Robyn Gillespie
Jason Hudson
Robert Leal
Mary Mallory
CW2 Wesley Moore
Dean Nelson
Ajit Purandare
Brad Reeves
Jason Reynolds
Sally Riley
Marc A. Schmidt
Oregon Trail Chapter
Kayla Foulk
Mike Hamilton
David Jackson
Christy Kelleher
CW4 Dan McMahon
Jeff Ratcliffe
Heather Sorensen
Jedidiah Van Den Bosch
Phantom Corps Chapter
Robert Farmer
Robbie Guy
Colin Hudson
SFC Daniel Hurtado
Robert Middleton
WO1 Jake Michael Miller
John Sims

Troy Snook
1LT Nicholas Tachias
Sarah Tachias
Pikes Peak Chapter
Bryce Anderson
CW2 Allen Banek
Nathaniel Bechtold
Carl Riedlin
Jason Roberts
Ragin' Cajun Chapter
CW4 Brian A. Degrafenread
Rio Grande Chapter
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SSG Brandon Houtz
Rising Sun Chapter
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Jordan Faulkner
Kevin Folette
Stephen French
CW4 Michael Fresenburg
Jeffrey Gaddes
Todd Gangl
CW4 Don Harp
Cindy Harris
Lane Harris
Scott Henry
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SGM Jessica Houppert
James Hunt
Jonathan Johnson
Whitney Lakes
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Kirk McCauley
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Madeleine Miller
Cindy Mitchell
LTC Roger Moore, Ret.
Steven Noe
Shane Plott
Lee Potts
Mike Rasco
Melisa Restrepo Rios
Chantaine Rhoe-Bulluck
Tony Rice
Jonniann Ridelzski
Eric Rose
Jake Sarinana
Candace Sledge
LTC Ellis Smith, Ret.
Kevin Spradley
Joseph Summers
Wendy Tarkowski
Christi Taylor
Laurence E. Thomas Jr. Ret.
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Roark Washington
Ben Wayne
LTC David Worthy
Tony Wright
Jeff Zelena
Thunderbird Chapter
Ryan Darrow
Utah Chapter
Richard S. Lund
CAPT Robert Palmer
Volunteer Chapter
Miss Mackenzie Watson
Washington-Potomac Chapter
Michael Bentley
COL Richard Black
Kevin Cody
Brian Flood
Christine Fuentes
Michael Hahn
Mike Harris
Carol Harrity-Tun
CPT Kevin Higuchi
Tom Jarboe
Tom Kirkland
Todd Leskoski
Jacob Librizzi
Brock Lowell
COL David Morgan
Susan Nachtigall
Javier Rodriguez
Michael Roscoe
James Sadler
Jay Voorhees
Jim Williams
LTC Elizabeth Womble
Wright Brothers Chapter
Jason Berry
Maria Conley
Ian Herron
Catherine Kastelic
Alex Margolin
Joe Nook
Rowdy Oxford
Daniel Piltz
Jim Rowell
Dave West

New Members continued



AAAA Family Forum

Suicide Is A National Tragedy. We All Need To Help Stop It!

By Judy Konitzer and MG Jeff Schlosser, U.S. Army Retired

We have another epidemic on our hands between mental health issues and especially suicides.

During the second quarter of this year, 139 Active Duty, National Guard, and Reserve Military Soldiers took their lives. An estimate by Brown University Costs of War Project, shows 30,177 vets and active-duty personnel have died by suicide since 9/11, while 7,057 have died while deployed and engaged in the wars. Also alarming is suicide among teenagers and college students.

Suicide is a reaction which involves voluntarily taking one's life and is rarely the result of just one conversation or event but involves multiple complex factors. Those who die may have believed they were a burden to the people they loved and thought their families would be better off without them. We know this to be untrue as they just could not see beyond the fog of their emotional pain.

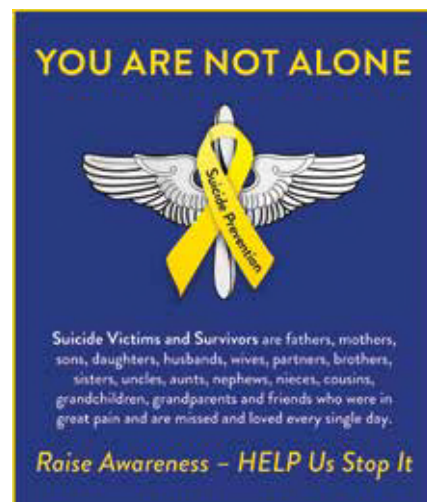
Some suicidal risk factors involve intense feelings of depression, loneliness, worthlessness, hopelessness, bullying, family history of mental health or substance abuse, alcoholism, domestic violence, child neglect or abuse, and financial insecurity. Another major risk factor is the availability and use of firearms.

Past AAAA President MG (Ret.) Jeff Schlosser in a recent Facebook page provided some valuable insights. "Confront reality: We veterans, our active-duty comrades, and our families have a serious problem. Suicide. We are killing ourselves at a horrific rate. We owe it to ourselves, those that love us, and America to do more to help those in need before they make an attempt, and for those that survive an attempted suicide, we must help them better than we are now doing. It's one thing to talk about the issue. But what should we do?"

First, as most things in life, we must understand the WHY? Why is suicide an option at all? We don't need more think tank studies. Instead, let's ask the survivors of suicide attempts. Listen, then listen more to them and those that love them. This is not a simple contractor-led endeavor with focused groups from the VA. This must be a 'getting hands dirty' intense maneuver into the homeless camps, into the VA centers where we have pushed those with multiple indicators (PTSD, substance abuse, depression, divorce, TBI, etc.) into the units where survivors cling to dignity and sufferers try to deal with their future. And this is likely most important, talk to the families - the loved ones - of those who have killed themselves and those who have sought to do so. They know things we don't.

Second, give the survivors and those who thought they might try, a voice and a mission: help your comrades. Most of all give them reason to not quit. Most likely what we would find would help us mitigate, and in some cases stop the pain, anger, and loss of control from trauma that feeds suicide ideation. It may help us become more creative before it comes to a suicide attempt, and more supportive after an attempt." MG Schlosser concluded with "I do know for sure that it would demonstrate a level of leadership and concern that we need soonest, before the situation gets even more dire."

People who die by suicide sometimes give some warning of their intent - even if subtle - like talking, writing, or even joking about suicide or death, an increase in destructive or violent behavior, social withdrawal, pessimism, anger, anxiety, or hopelessness, or using words such as



GRAPHIC BY MEGHAN HUITTO

"Life isn't worth living."

If someone you know is showing signs of suicidal thoughts or you suspect is considering suicide, please take it seriously and be willing to listen and let them know you are concerned and persuade them to seek professional help. Don't assume the situation will correct itself. Please call the National Suicide Prevention Lifeline at **1-800-273-TALK (8255)**, a free 24-hour hotline; or in the case of a life-threatening emergency call 911 or visit your nearest emergency room.

Although there was no way that you would have known it was going to happen on that day or that moment and you can't control the actions of others, The Tragedy Assistance Program (TAPS) offers survivors postvention support with resources and programs. Contact their National Military Survivor Helpline 24/7 at **1-800-959-8277**.

Judy Konitzer is the family forum editor for ARMY AVIATION; questions and suggestions can be directed to her at judy@quad-a.org.

MG (Ret.) Jeff Schlosser is a past AAAA president and author of "Marathon War: Leadership in Combat in Afghanistan."



U.S. ARMY PHOTO BY JERRY COBURN, AMCOM PUBLIC AFFAIRS



OSMs Continued

Tennessee Valley Chapter

MSG (Ret.) Michael Underwood, Aviation Logistics Assistant Program Manager for Enterprise Aviation (EAVN) Global Combat Support System-Army (GCSS-A), Program Executive Office Enterprise Information Systems is inducted into the Silver Honorable Order of St. Michael by AMCOM Commanding General, MG Todd Royar (not pictured), and Tennessee Valley Chapter VP Veterans Affairs, CSM (Ret.) Tod Glidewell on October 28, 2021 at Redstone Arsenal, AL. Underwood was recognized for his outstanding contributions to Army Aviation as both an Army Aviation Soldier and an Army Civilian for over 28 years to include his most recent achievements in developing a business solution for Army Aviation syndicating data from the Aircraft Notebook (ACN) into the Enterprise data systems.

New AAAAA Members

continued

Yellowhammer Chapter

Robert Marlin

No Chapter Affiliation

Brig. James Allen

Curtis Anderegg

Selim Bencuya

Paul Boilard

Dr. Graham Brew

Sue Brooks

Kent Catesi

Patrick Champagne

Tyler Coles

Tawnya Danis

Eustace Denton

Jerry D. Denton

Adrien Dillard

Eric Fuller

Carl Godkin

Sean Goodwin

Seth Gyr

Heath Hannes

Timothy Justyn

CPT Christopher Kegley

Dave Kingma

Brian Lamonde

Tracy Mashiotta

Jeff McKay

Jay Mosley

Brad Nolen

Su Pak

Arthur Paradis

Krysta Paradis

Tamara Paradis

Larry Parker

Ken Phillips

Jamie Porter

Armando Prado

Jim Ramsey

Penelope Raquinio

Jesse Rubin

William Ruppert

Christopher Ryan

William Sasser

Quinn Smith

Matt Tarczynski

Shaun Taylor

MAJ JamesTomillo, USAR Ret.

Bruce True

Edward Yin

AAAAA AIR ASSAULT CHAPTER

2022 Golf Tournament

WHERE: Gaylord Springs Golf Links . 18 Springhouse Lane,
Nashville, TN 37214 . <http://www.gaylordsprings.com/>

WHEN: Saturday, April 2, 2022; Shotgun start 0730 (morning) and 1330 (afternoon)

COST: \$115 per player, total 144 golfers for morning and 144 golfers for afternoon. Cost covers green fees, cart with GPS system, breakfast, lunch, hors d'oeuvres and all standard golf amenities including range balls, club cleaning and bag handling. Accepting team and individual registration (including handicap), first paid 288 responses accepted on a first come, first filled basis. Rental clubs available. Paid registration due by March 18, 2022. All cards accepted, except American Express.

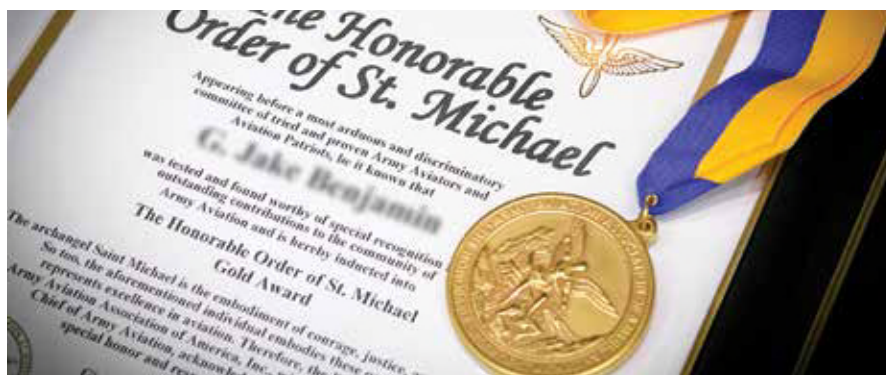
FORMAT: 4 Person Scramble

REGISTRATION: Visit <http://2022aaaagolftournament.ezregister.com> to register as an individual golfer, a foursome, or select a sponsorship level

SAT **APRIL**
2nd

<http://2022aaaagolftournament.ezregister.com>

AAAA Awards



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CSM Billy D. Webb

SILVER

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L TC Michael P. Roder
Empire Chapter
COL Michael F. Charnley
Keystone Chapter
COL Howard R Lloyd Jr.
CW5 James E Williams
Lindbergh Chapter
LTC Roger J. Sulzer, Ret.
Morning Calm Chapter
CSM Jerramy L. Wood
Mount Rainier Chapter
CW5 Jesse W. Lee
CW4 Raphael E. Lopez
North Star Chapter
CW5 Paul T. Adamson
CW5 David M. O'Brien
CW4 Stephen S. Schiffli
Phantom Corps Chapter
CSM Carlos Loeza
Tennessee Valley Chapter
COL Kevin S. Chaney
Washington-Potomac Chapter
CW5 Michael G. Behrendt
CW5 Rex A. Finley, Ret.

BRONZE

Air Assault Chapter
CW3 Dusty W. Hodges
CSM George Martinez
SFC Brian M. Mckaskle
Lance Clayborn Peeler
CPT Richard St. Onge
SGM Aaron L. Stephens
Colonial Virginia Chapter
MSG Clay W. Bronson

LTC James R. Chapman, Ret.
CW3 Timothy McCauley
CW3 Gilberto Perez
Delaware Valley Chapter
SFC Ramiro J. Magallanez
High Desert Chapter
CPT Olin H. Kennedy
Iron Mike Chapter
CW4 Kevin Bearden
CW5 William B. Lindell
Jack H. Dibrell/Alamo Chapter
MAJ Cody A. Anfinson
LTC Juan Bedia
CW4 Kenneth C. Bouldin
CW4 Franklin M. Cox
SFC Matthew T. Curry
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SGM James R. McChristian
CW2 Elaine Mejia
MSG Deadrick Ramirez
CW2 Michael Reddick
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MAJ David Sullivan
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Mount Rainier Chapter
CW4 Adam M. Erickson
MAJ Steve Sanford
North Star Chapter
1SG Daniel Berberich
CW3 Brian Bottolene
LTC Richard Brummond
CW4 Aaron Caswell
CW2 Austin Corbine
CW2 Fred "Sean" Debruzzi
CW3 Andrew Dutton
CW4 Owen Kelsch
MAJ Shaun Meling
CPT Jesse Pope
MAJ Marc Rassler
CPT Zackary Taylor-Warren
MAJ David Wagner
MAJ Bernie Williamson
Phantom Corps Chapter

SFC Johnathan Fisher
Thunder Mountain Chapter
MSG Brian I. Gagliano
SFC John L. Green Jr.
CW4 Kevin F. Rice
Thunderbird Chapter
CW4 Brian P. Wright
Washington-Potomac Chapter
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CW3 Cameron Peterson
Winged Warriors Chapter
SSG William J. Clark
SFC Christopher M. Durkovic
CW4 Kenneth W. Kimber
CW3 David J. Miller
No Chapter Affiliation
SFC Jerry Clagett
MSG Christopher Lingo



Honorable Knight Inductees

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MSG Johnny RiveraMolina
Colonial Virginia Chapter
John Evans, USN Ret.
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North Star Chapter
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MSG Stacy Lanou
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CH(MAJ) Daryl Thul



Our Lady of Loreto Inductees

Mount Rainier Chapter
Jessie Rose
Emilie Sanford



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Presented at the Annual Army Aviation Mission Solutions Summit
Suspense: January 1

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- James H. McClellan Aviation Safety
- Henry Q. Dunn Crew Chief of the Year
- Gary W. Wetzel Army Aviation Soldier of the Year
- Rodney J.T. Yano NCO of the Year
- Michael J. Novosel Army Aviator of the Year
- Robert M. Leich Award
- Army Reserve Aviation Unit of the Year
- John J. Stanko Army National Guard Aviation Unit of the Year
- Active Army Aviation Unit of the Year
- Outstanding Army Aviation Unit of the Year

AAAA Hall of Fame Inductions

Presented at the Annual Army Aviation Mission Solutions Summit
Suspense: June 1

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Collins Aerospace

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Size of Company: Large 1,000 Employees and Up

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AAAA recognizes the generosity of the following individuals, chapters and organizations that have donated to the Scholarship Foundation, Inc. from October 2020 through October 2021. The list includes donations received for all scholarships, as well as the General Fund which provides funding to enable the chapter, corporate, heritage and individual matching fund programs as well as national grants. **Every penny donated to the Scholarship Foundation goes directly to a grant as a result of the Army Aviation Association of America subsidizing all administrative costs (minus investment brokerage fees).**

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Industry News

Announcements Related to Army Aviation Matters

Editor's note: Companies can send their Army Aviation related news releases and information to editor@quad-a.org.

More Chinooks for SOCOM



THE BOEING COMPANY PHOTO

Boeing will build six more MH-47G Block II Chinooks for the U.S. Army Special Operations Aviation Command as part of a \$246.48 million contract. Delivery of these aircraft are scheduled to start in 2023. With this additional order, Boeing is now under contract for 30 MH-47G Block II Chinooks, four of which have been delivered to date. These aircraft will be the first to include the new Active Parallel Actuator Subsystem (APAS), a mission system that helps pilots execute more difficult maneuvers while improving safety and reliability of flight. It also features improved structure and weight reduction initiatives like new lighter weight fuel pods that increase performance and efficiency.

Textron Awarded TUAS NET Contract



TEXTRON SYSTEMS PHOTO

Textron Systems Corporation announced on Nov. 9 that it has been awarded a Task Order valued up to \$9.7 million for the RQ-7Bv2 Block 3 Shadow®. New Equipment Training. This effort is under the Tactical Unmanned Aircraft System (TUAS) Technical Services Field Support (TSAFS) Indefinite Delivery, Indefinite Quantity (IDIQ) with the United States Army's Program Executive Office – Aviation. As part of the larger initiative, the award facilitates the fielding and training of all 33 combat aviation brigade Shadow platoons. This improved Shadow system incorporates significant upgrades including – 60 percent reduction in acoustic signature,

environmentally hardened for flight in heavy rain (2 in/hr.), greater standoff with modern high-definition EO/IR/LD payloads, a new state of the art dual processor mission computer, a highly reliable water-cooled engine with increased engine power (24 percent) and advanced communications relays including a two channel Voice Over IP (VOIP) (air/ground).

Contracts – (From various sources. An "*" by a company name indicates a small business contract / "***" indicates a woman-owned small business)

General Atomics Aeronautical Systems Inc.,* Poway, CA, was awarded a \$14,214,413 cost-plus fixed-fee contract for engineering and technical services for the Joint System Integration Laboratory; work will be performed in Poway, with an estimated completion date of March 20, 2023.

Jo-Kell Inc.,** Chesapeake, VA, has been awarded a maximum \$11,103,552 indefinite-quantity, firm-fixed-price long-term contract for UH-60A helicopter special purpose electrical cable assembly spare parts. This is a five-year contract with no option periods; work will be performed in Virginia with a completion date of Nov. 29, 2026.

Kampi Components Co., Inc., Fairless Hills, PA, has been awarded a maximum \$9,672,817 fixed-price, indefinite-delivery/indefinite-quantity contract for hose

assemblies supporting the Army AH-64 D & E Longbow helicopter. This is a three-year contract with no option periods; work will be performed in Arizona and Pennsylvania with a completion date of Nov. 9, 2024.

Olgoonik Logistics LLC,* Anchorage, AK, was awarded a \$49,900,000 firm-fixed-price contract for sustainment, restoration and modernization projects at Fort Stewart/Hunter Army Airfield; work locations and funding will be determined with each order, with an estimated completion date of Sept. 22, 2026.

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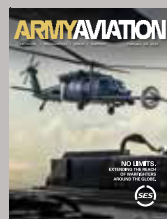
AIRBUS Helicopters	1
Akima	69
Astronics Test Systems	27
Angelus	63
Army Aviation Museum Foundation	83
Bell Helicopter Textron Inc.	5
Blackhawk Aerospace	36, 37
Breeze-Eastern	33
CATI	12
CMC Electronics	33
Coastal Seat Cushions, Inc.	33
Collins Aerospace	31
Crestwood Technology Group (CTG)	29
Dallas Avionics	41
FlightSafety International	9
General Atomics Aeronautical Systems, Inc.	43
Helibasket	13, 61
Kennon Products	65
L-3 Harria IMS Wescam	7
Lockheed Martin	100
Meggitt	76
Meggitt Defense Systems	15
Phantom Products, Inc.	17
Pilatus Business Aircraft	59
Robertson Fuel Systems, L.L.C.	23
S3, Systems Studies & Simulation	60
Science and Engineering Services, SES, Inc.	2
SKEDCO, Inc.	16
Strata-G Solutions Inc.	67
Summit Aviation Inc.	19
Textron Systems	25
Torch Technologies	12
Tyonek	21
Vertex Aerospace LLC	35
Viasat, Inc.	71
Vinnell Arabia	64
Yulista Holdings LLC	11

ARMY AVIATION

Upcoming Special Focus



January 2022
Aviation Maintenance
/Sustainment



February 2022
Rotary Wing Project
Managers Update
Army Capability
Managers
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Contact: **Bob Lachowski** or
Erika Burgess
AAAAindustry@quad-a.org
203. 268.2450
ARMYAVIATIONmagazine.com



AAAA Legislative Report

By LTC Kevin Cochie, Retired
AAAA Representative to the Military Coalition (TMC)
kevin.cochie@quad-a.org

Bah Humbug for Defense Legislation

At the time of this writing, Congress had made little progress on the FY22 defense authorization act nor the defense appropriation act. We continue to operate in a continuing resolution situation that we've often discussed and has damaging effects on defense readiness, modernization and sustainment. Will this edition hit your mailbox around Christmas along with an NDAA and appropriations legislation wrapped in a big red bow? Likely not, as Senate debate on the House passed infrastructure bill will consume Capitol Hill politics in the weeks leading up to the Christmas holiday. Congress has a long track record of passing the NDAA (policy bill) by the end of each calendar year and the ball is largely in the Senate's court to get this done. Defense appropriations is a whole different story and it's likely we will be in Continuing resolution well into 2022.

Army Aviation Acquisition Processes and Congress

Aligned with this month's Industry Partner edition and Acquisition Process and absent of developing congressional budget updates, we will focus on a discussion of how deeply intertwined our Army Aviation acquisition processes are with our Congressional champions on Capitol Hill. Whether it's a crew chief turning wrenches on the flight line or staff officers serving in Army Futures Command and PEO Aviation, acquisition processes drive funding and policy legislation that effects everyone in our enterprise. At the end of the day, congressional policy and funding serves the mission of our warfighters in our combat aviation brigades. Army Aviation Acquisition is the arm of the Army that follows title 10 law on how we procure aviation weapon

systems and services. Aviation is expensive, so you can imagine that congressional oversight committees scrutinize our wish lists very closely due to the large amount of taxpayer funding that flows to aviation systems and sustainment. There are many open-source articles on Army Aviation programs and most today are focused on future vertical lift platforms. There was once a day when Army Aviation acquisition had a poor reputation of failing with new programs. Comanche helicopter is one example where requirements led industry to build a highly sophisticated machine and the developmental program that was ultimately cancelled. Why is FVL different and why we have rarely seen any negative press on both the FARA and FLRRA programs?

The difference today versus yesterday lies in several areas. We learned from the past and our Aviation leaders work with Congressional stakeholders to foster a path for FVL's success. We put the right leaders in the right positions spanning over 5-10 years to set this program up for success. First, when it comes to Army Aviation acquisition, our PEO Aviation, BG Rob Barrie, is a seasoned program manager and knows the statutory processes inside and out. Now consider our highest-ranking acquisition officer in the Army, the Military Deputy to the Army Acquisition Executive, LTG Bob Marion. He is an Army Aviator, former PEO Aviation and has spent a decade fostering trusting relationships with our congressional oversight committees. Then there is Army G8 that programs funding and sets priorities year over year. The Director of Force Development in the Army G8 is BG Mac McCurry. BG McCurry is another example of continuity within our senior leader ranks when it comes to Congressional engagement and building trust with Members of Congress and staff. As if this has not set the condition for success, the Army G8 is also an Army

Aviator, LTG Erik Peterson. LTG Peterson has also spent years developing relationships with Congressional stakeholders. And finally, when it comes to setting the benchmark with developing Congressional relationships, MG Wally Rugen, the director of the FVL Cross-Functional Team in Army Futures Command is no stranger to Capitol Hill. The common theme here is trust and transparency which historically has not been printed in the same sentence with the words "Acquisition Processes." The success Army Aviation has enjoyed on Capitol Hill for a decade is not by happenstance. Our leaders are working with Congress daily to ensure we have a healthy and modernized force for the future, and this is largely due to the thoughtful placement of key general officers to serve in positions that can build trust with Congressional decision makers that have the ultimate responsibility to appropriate large amounts of taxpayer funding. In summary, Acquisition processes are complex and are often associated only with acquisition professionals, but the success of acquisition programs with Capitol Hill relies on a concerted effort from a team of Army Aviation senior leaders that build trusting relationships with Congress. This is one of the main reasons we do not see negative press on our current development programs.

The Military Coalition

This past month AAAA supported a Military Coalition effort advocating for legislation that would address an inequity between Tricare and most civilian insurance programs where dependents up to the age of 26 lose coverage unless they are a college student. The Health Care Fairness for Military Families Act alleviates the financial burden on families by allowing dependents up to the age of 26 to remain covered by their parents' TRICARE benefit regardless of being in school or not.



People On The Move

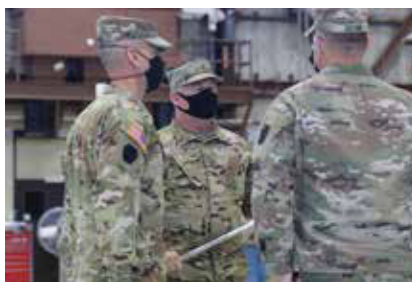
Changes of Command/Responsibility

28th ECAB Welcomes Girvin and Adams



U.S. ARMY PHOTOS BY CPT TRAVIS MUELLER FOR NATIONAL GUARD

U.S. Army LTC Michael Girvin, incoming commander of the 28th Expeditionary Combat Aviation Brigade, receives the brigade colors from 28th Infantry Division Commanding General, MG Mark McCormack (left) during a change of command ceremony at Muir Army Airfield, Annville, PA. Girvin, who served as the CAB's executive officer, takes over for outgoing commander COL Howard Lloyd who is retiring after nearly 40 years of service.



Following the change of command, CW5 Rich Adams (holding a field officer saber), assumed responsibility as the 28th CAB command chief warrant officer from CW5 Chuck Doyno. Adams was previously the brigade's aviation mission survivability officer.

Awards Night Stalker Inducted Into the ROTC Hall of Fame



The family of CPT Keith Lucas, an Army ROTC graduate of Washington University – St. Louis, represents Lucas during the Army ROTC Hall of Fame Induction Ceremony at the AUSA



U.S. ARMY PHOTO BY PAUL CHAMBERLAIN FOR AUSA

Conference in Washington, Oct. 11, 2021. On October 25, 1983 CPT Lucas became the first Night Stalker combat fatality while piloting his Black Hawk in an attempt to insert troops at the Richmond Hill prison in support of Operation Urgent Fury in Grenada. In his short, yet distinguished, military career he earned the Distinguished Flying Cross, Purple Heart, Army Aviator Badge and Air Assault Badge. Major General Johnny K. Davis (left), commanding general, and CSM Jeremiah E. Gan, senior NCO of U.S. Army Cadet Command conducted the induction.

Flight School Graduates

AAAA provides standard aviator wings to all graduates and sterling silver aviator wings to the distinguished graduates of each flight class ... another example of AAAA's SUPPORT for the U.S. Army Aviation Soldier and Family.



AAAA congratulates the following officers graduating from Flight School XXI at the U.S. Army Aviation Center of Excellence, Fort Rucker, AL.

46 Officers October 7, 2021 Commissioned Officers

2LT Ellington, Jacob T. - DG
2LT Kimmich, Ryan M. * - HG
2LT Van Wert, Brandon S. - HG
2LT Chavez, Maria I.
2LT Cox, Lee R. *
2LT Darst, Adam T.
2LT Frasier, Emma R.
2LT Hilby, Isaac W.
2LT Lee, Sang H.
CPT Murphy, Ronald R., Jr.
2LT Norris, Joshua R.
2LT Perinon, Bailey G.
2LT Posey, Judson S.
2LT Prado, Daniel E.
2LT Turner, Justin H.

Warrant Officers

WO1 Kelley, Jonathan S. - DG
WO1 Goodwin, Taylor S. - HG
WO1 Hendrickson, Patrick M. - HG
CW2 Nabavi, Patrick R. - HG
WO1 Roberts, Jeremy B. - HG
WO1 Beck, Aaron S.



FSXXI Class 21-024

WO1 Berniard, Joseph A., III
WO1 Bickerstaff, Kody B.
WO1 Boik, Brandon W.
WO1 Brown, Hunter J.
WO1 Burns, Jessica L.
WO1 Clark, Harrison T.
WO1 Clark, Joel A.
WO1 Collins, Matthew P.
CW2 Decker, Justin M.

WO1 Diaz, Dylan M. *
WO1 DiRocco, Dylan A.
WO1 Farley, Robert L., Jr.
WO1 Good, Daryl L.
WO1 Hanks, Justin L.
WO1 Kinney, Johnathan H.
WO1 Kormos, Aaron S.
CW2 Lunsford, Steven R.
WO1 Mauro, Christopher R.

WO1 Mercier, Dylan M.
WO1 Merola, Zachary R.
WO1 Oliver, Tyler A.
WO1 Sills, Stephanie N.
WO1 Sturgis, Christopher J.
WO1 Widenhouse, Lucas H.
WO1 Wilson, Tanner W.

Continued Next Page

People On The Move

Flight School Graduates *Continued* 45 Officers October 21, 2021 **Commissioned Officers**

2LT Bennett, Justice C. - DG
 CPT Jones, Hannah M. - HG
 2LT Loffert, Stephen C. - HG
 2LT Strother, Nathaniel T. - HG
 2LT Bayles, Wesley R. * - HG
 2LT Beauchamp, Robert W., Jr.
 2LT Bohrer, Zachary K.
 2LT Commerford, Jacob E.
 2LT Ford, Garrett J.
 1LT Gonzalez, Grant D.
 1LT Hall, Matthew T., Jr.
 1LT Kauffman, Darian A.
 1LT Le, Van
 2LT Mayer, Justin J.
 1LT Morton, Megan R.
 1LT Norman, Jeremiah E.
 2LT Paolucci, Lia M. *
 2LT Schlagel, Sean R. *
 2LT Telleria, Roberto A.
 2LT Vasina, Melanie N.
 2LT Vitols, Christopher M.
 2LT Weaver, Kenneth A.
 2LT Wescott, Patrick B.



FSXXI Class 21-025

Warrant Officers

W01 Morris, Steven E. - DG
 W01 Dandeneau, Dana J. - HG
 W01 McKeeman, Connor M. - HG
 W01 Salvi, Michael F. - HG
 W01 Bryant, Kenneth G.
 W01 Chattler, Jordan A.
 W01 Crossett, McCulley C.
 W01 Curry, Jacob G.

W01 Davilaolmos, Jonas
 W01 Emerson-Smith, Blake E.
 W01 Gumeniuc, Vitalie
 W01 Jackson, Bryan J.
 W01 Kirker, Derrick S.
 W01 Lacombe, Derrick G.
 W01 Lehman, Evan K.
 W01 Mitchell, Donyae T.
 W01 Perkins, James E., II

W01 Petty, William C.
 W01 Spradlin, Walker P.
 W01 Staples-Bloom, Emmanuel S.
 W01 Trimmer, Dustin J.
 W01 Weyrich, Tyler Z.

-DG: Distinguished Graduate

-HG: Honor Graduate

* = AAAA Member

ADVANCED INDIVIDUAL TRAINING (AIT) GRADUATIONS

AAAA congratulates the following Army graduates of the indicated Advanced Individual Training (AIT) courses at the 128th Aviation Brigade, Joint Base Langley-Eustis, VA and the U.S. Army Aviation Center of Excellence, Ft. Rucker, AL.

AH-64 Attack Helicopter Repairer (15R)

Class 036-21
 PV2 Connor Kevin Lee * - DG
 PV2 Nolan Christopher Bain
 SPC Robert W. Harriswebster
 CPL Christopher Luke Kiser
 PV2 Jorge G. Ordazamezcua
 SPC Matthew Steve Ordonez
 PV1 Elijah Gabriel Turner
 PFC Brandon Anthony Wilson
 PV2 Charles L. Zimmer
Class 037-21
 PFC Tue The Tran * - DG
 PV2 Darryl E. Hampton Jr
 PFC Kyle B Jones
 PV2 Abel Augustine Ramos
 PV2 Kevin Dashaun Ravenell
Class 039-21
 PV1 Pearl Desi Vargas * - DG
 SPC Bernard Niiadjei Akporh
 PV1 Luke Adam Benavides
 PV2 Tyler Evan Lee
 PV2 Omar Ali Lopezreyes
 SPC Johnston P. McCorkle
 SPC Andres li Perez
 PFC Alphonso Shairo Ross

PV1 Petejohn G. Sannicolas
 PV1 Vladimir Tamayoaja
 PV2 Colby Marie White
 Class 041-21
 PV2 Dakota S. Stewart * - DG
 SPC Denzel Antonio Carter
 PV1 Damian J. Gonzalez
 CPL Alex Lasu
 PV2 Joseph Aaron Montoya
 SPC Victor M Rodriguez, Jr

CH-47 Medium Helicopter Repairer (15U)

Class 029-21
 PV2 John W. Boldin
 SPC Wesley Antonio Defaria *
 SPC Addison Tyler Emerson
 SPC Jacob Tyler Hess
 SPC Michael Andrew Rowe
 PV2 Tristen Scott Surber
Class 030-21
 PV2 Samantha M. Stott * - DG
 PV2 Rachelle Noel Burgoyne
 PV1 Chase Edison Martin
 PV2 Jahaziel A. Martinezmuniz
 PFC Joseph Bayne Rogers
 PFC Jakeb F. Shumway
 SPC Angel Michael Silva
 PV2 Bailey Angel Troy
Class 031-21
 SPC Brett M. Leonard * - DG
 PFC Jamario Unjuantay Craft
 PFC Darrell Richard Farrell
 PFC Daniel Mark Holbrook
 PV2 Jeremy David Mulinix
 PFC Sage Katsuo Stillwaugh
 PFC Madelynn R. Thompson

SPC Yuriy Urazov
 PV2 Jacob N. Younger

UH-60 Helicopter Repairer (15T)

Class 065-21
 PV2 Dalton Lee Hill * - DG
 PV2 Jason Ryan Alekseyenko
 PV2 Ethan Kyleryan Bostwick
 PFC Dean Christian Carlton
 PV2 Robert Terrell Conyers
 SPC Noah Jack Fitzpatrick, V
 PFC Johnathon M. Holgate
 PFC Drew James Killam
 PFC Dawson A. Loooper
 SGT Laken Lindsay Mccoy
 SPC Cassidy Jean Mullen
 SPC Jessica Velero
Class 066-21
 PV2 Owen H. Linder * - DG
 SGT Michael Stephen Clonts
 SPC Omar Deleon
 PV2 Colton Law Kennedy
 PV2 Dustin Cody Ladd
 PFC Lincoln Macabe Lynn
 PFC Mason Keith Miller *
 PV2 Calvin Michael Pang
 PV2 Ekzavier M. Pinkert
 SPC Ivan D. Ramirezquintero
 PV2 Byron Mario Reffalt
 PFC Joseph Michael Srofe Jr
Class 067-21
 PFC Rylan J. Maxwell * - DG
 PFC Shawn Michael Church
 PFC Jacine Tyler Crosby
 PFC River Glen Feltner
 PFC Robert Dean Glenn
 PV2 Gerardo D Gonzalez
 PV2 Jorge Davi

Gonzalezpalomino
 PV2 Nicholas R. Halley Jr
 PFC Christian A. Kerwin
 PV2 Alexander James Kivell
 PFC Daniel Cak Littao
 SPC Luke Davison Mclean
Class 068-21
 PFC Tegan J. Renken * - DG
 SPC Alan Bradley Atwell
 SGT Gage Tylor Fontanez
 SGT Patrick Ellis Mccrann
 PFC John Eric Montgomery
 PFC Andrei Mario Natale
 SPC Aaron N. Oseiamoah
 PV2 Mason Thomas Reynolds
 PV2 Cameron R. Saddler
 SPC Christopher S. Simons
 PV2 Aldi Gabriel Vinalay
 PV2 Cody Ryan Youngblood
Class 069-21
 SPC Kendall L. Wandel * - DG
 PFC Daniel Enrique Aguirre
 PV2 Dmitriy Chopko
 SPC Brennan Von Delacruz
 PV1 Keillie Jannae Keyworth
 PV2 Robert Matthew Maring
 SPC Jacob Anthony Rivera
 PV2 Carlos Jose Silva
 PV2 Joseph Daniel Spear
 PFC Zachary Taylor Wood
 PFC Dmitriy Carrier, Jr.
Class 070-21
 SPC Collin J. Beckham * - DG
 SPC Zachary Caleb Beisel
 PFC Marshall L. Blaser
 PV2 Crimson Allen Booth
 PV2 Casey Daniel Bradshaw
 PV2 Caden John Evanson
 SPC Rolando A. F. Guzman

PFC Austin James Hardman
 PV2 Clinton Lloyd Hunter
 PV2 Shane Peter Mendoza
 PFC Hamilton Zane Ratliff
 SSG Xavier Soto
Class 071-21
 PFC Wyatt McClellan Fox * - DG
 SPC Brett Joseph Black
 PFC Pablo A. Burgos-Milan
 PFC Franklin Saulie Cottrell, II
 PFC Trevor Cameron Deal
 SPC Cameron Judge-Becker
 PFC Louis Daniel Miranda
 PV2 Jorge U. Moore
 PV2 Maxwell S. Mortimer
 PV2 Eli Kristopher S. Navarro
 PFC William Emil Thompson
 PFC Ian Andrew Vickers
Class 072-21
 PV2 Beau C. Westergaard * - DG
 PFC Yair Rangel Alvarez
 PFC Daniel Alfonso Arguelles
 PFC Kacie Joseph Austin
 SPC Ryan Edward Bandy
 PFC Matthew Adam Bell
 PV2 Kaleb Ryan Buster
 PFC Brett Jarom Ende
 PV2 Eli Kristopher S. Navarro
 PFC Aaron Austin Parker
 PFC Andrew Joseph Reichert
 SGT Daniel Scott Wilkinson, II
Class 073-21
 AB Zachary T. Neighoff * - DG
 AB Joseph Barreramattzer
 AB Elijah Campbell
 A1C Jared Estevez
 AB Jorge Inzunza
 AB Vincent Meno
 AB Felipe Mermella



People On The Move

AB Christopher Riebe
A1C Denyveas Wright
Class 074-21
PV2 John Samuel Stivers* - DG
PFC Tyler Paul Carter
PV2 Rocky A. Dickinson, Jr
SGT David Austin Dorrell
PV1 Cameron Lewis Evanoff
PFC Chase Thomas Fletcher
PFC Caleb Eastwood Harden
PV2 Laquintin S. Jones
SGT Jake Storm Mitchell
SPC Andrew Joseph Pruett
SPC Richard Quaicoe

Aircraft Powerplant Repairer (15B)

Class 015-21
PV2 Jeffrey A. Krieger* - DG
PFC Leo Michelli Alfieri
PFC Dustin Roe Ayers
PVT William Chester Carroll
PFC Ashton T. Feddersen
PFC Christian M. Grimaldo
PV2 Nicholas Tyler Lucey
PVT Reed Kevin Manning
PV2 Brandon Ray Napier
PFC Moises Ramirez-Sanchez

PFC Giovanni Michael Savala
PV2 Kalysta Monique Silva
PV2 Arthur Cruz Souza
SPC Shaibu Tambro
PV2 Christopher X. Vasquez

Aircraft Powertrain Repairer (15D)

Class 010-21
PV2 Nickolas R. Gutowsky* - DG
SPC Bassam Alshaha
PV2 Lane C. Crutchfield
PV2 Francesco J. Dagostino
PFC Zachary Darell Davidson
SPC Dexter Anthony Derouen
PV2 Ryan Jacob Fiveland
SPC Joe Matthew Gabbard
SPC Ngai Hang Li*
PV2 Andrew L. Raghunanan
PFC Logan Lee Swoyer-Heinz

Aircraft Electrician (15F)

Class 013-21
PV2 Tyler L. Messer* - DG
SPC Daniel Jacob Castille
PFC Jasier Aviles Flores
PFC Henry Calvin Hyder

PFC Brennon Seth Langley
SPC Miguel Angel Nino
PV2 Alexander A. Reece
Class 014-21
PV2 Matthew L. Thornton* - DG
SPC Oluwale E. Alesinloye
PFC Dylan Carter Smith
PV2 Xavier Javon Webber

Aircraft Structural Repairer (15G)

Class 011-21
PFC Joseph V. Watson* - DG
PVT Shailesh Kumar Gyawali
PV2 Blake Lamar Harris
PVT Christopher L. Mayberry
PVT Kaden Ian Mcmanus
SPC Kenny Ray Siegler
PV2 Benjamin Ross Snow
SGT Jason Alan Williamson

Aircraft Hydraulics Repairer (15H)

Class 014-21
PV2 Dominic Jurell Baccay* - DG
PFC John Anthony Caldera
PVT Clayton Trevor Jones
PFC Quang Duy Le

PVT Juan Carlos Muniz Rojas
PFC Harley Alan Wuesthoff

Avionic Repairer (15N)

Class 015-21
PFC Nicholas A. Plasse* - DG
PV2 Kaleigh Renee Cohron
PFC Savannah Faith Garrett
SPC Jyusef Orlando Hall
PV2 Richaad O. Johnson
SPC Darwin Mark Lorraine
PFC Timothy J. Patterson
PV2 Lynesha Denise Raeford
Class 016-21
SPC Cody O. Cunningham
PFC Trevor Sanders Dalley
SPC Andrew Mitchel Herd
SPC Jacob Lee Rath
PV2 Matthew T. Robinson
PFC Julian Alexis Sotelo

AH-64 Armament/Electrical/Avionic Systems Repairer (15Y)

Class 015-21
SPC Makenzie Thomas* - DG
PV2 Rachel Bigbee

PV1 Jordan Dawes
PV1 Steven Fleming
PV2 Antoine Fletcher
PFC Tajohn Gilchrist
PV1 Cyril Hill
PV1 Alexander Holman
PV1 Taiief Lanier
PFC Jessica Mejia
Class 016-21
PV2 David Leitner* - DG
PV1 Kenny Albert
PV1 Josiah Brown
PFC James Holst, Jr
PFC Griffin McCaffery
PV2 Austin Parker
PV2 John Phillips
SPC Brady Rupe
PV1 Silas Sanchez
PV2 Eddie Simmons

- DG: Distinguished Graduate
- HG: Honor Graduate
* = AAAA Member

Unmanned Aircraft Systems (UAS) Graduations

AAAA congratulates the following Army graduates of the Tactical Unmanned Aircraft Systems Operations Warrant Officer Technician Course, MOS 150U, at Fort Huachuca, AZ.

Tactical Unmanned Aircraft Systems Operations Warrant Officer Technician Course

11 Graduates, 22 September 21
WO1 Hector Cartagena - HG
WO1 Andrew Couser - HG
WO1 Emilio Bonner
WO1 James Clyde
WO1 John Crutcher
WO1 Sean Fuqua
WO1 Matthew Hedges
WO1 Aric Petersen
WO1 William Scott*
WO1 Anthony Silva
WO1 Christopher Woods

UAS REPAIRER

AAAA congratulates the following Army graduates of the Shadow Unmanned Aircraft Systems Repairer Course, MOS 15E, at Fort Huachuca, AZ.

3 Graduates, 5 October 2021
PFC Matthew Benson

PFC Kristian Etsby
PV2 Eric White
PVT Dylan Swenson

UAS OPERATOR

AAAA congratulates the following Army graduates of the Unmanned Aircraft Systems Operator Course, MOS 15W, at Fort Huachuca, AZ.

Shadow UAS Operator Course

24 Graduates, 23 September 21
SGT Igor Kirdanov - DG
SPC John Gang - HG
SGT Jill Akpekou
SGT Sekou Benjamin
SGT Lance Lanzaderas
SGT Garrett Morgan
SGT Lauren Thompson
CPL Pedro Gonzalez
CPL Austin Setzer
SPC Nicholas Allen*
SPC Sergio Arizpeyado
SPC Samuel Britton
SPC Astacio Campos
SPC Samuel Castro
SPC Patricia Conlow
SPC Ricardo Cruz Moreno
SPC Daemon Gamble-Howard
SPC Garrett Jones*
SPC Bryson Lee
SPC Marcos Martinez
SPC Rodolfo Paulino
SPC Jason Potts

SPC Raymond Radovicz
SPC Michael Sanchez

23 Graduates, 13 October 21

PFC Andrew Hughel - DG
PFC Thomas Anderson - HG
SPC Colton Evans
SPC Ashton Ledee
SPC Cameron Luke
PFC Trevor Betzen
PFC Cody Dreblow
PFC Michael George
PV2 Gabriel Bauer
PV2 Cole Boone
PV2 Jacob Coleman
PV2 Josuf Dewshap
PV2 Justin Echeverria
PV2 Timothy Hall
PV2 Gavin Holt
PV2 Zhavon Howell

PV2 Noah Jordan
PV2 Dustin King
PV2 Marcus Martinez
PV2 Wyatt McBride
PV2 Timothy McElrath
PV2 Hunter Prince
PV2 Stephanie Rodriguez

Gray Eagle UAS Operator Course

9 Graduates, 28 September 21
SPC Isabella Eduardo
SPC Brooke Scott
SPC Benjamin Wilkinson
PFC Joseph Manzoni
PFC Martin Morales
PV2 Cameron Baker
PV2 Marleigh Birdzell

PVT Lance Vreeland
PVT Austin Wilmot
12 Graduates, 12 October 21
PV2 Trevor Trump - HG
PFC Andrew Bates
PFC Brendon Crispin
PFC Alexander Garrido
PFC Lennon Gust
PFC Joshua Johnston
PFC Matthew McCreary
PFC Patrick Mcnamara
PFC Chance Murphy
PFC Isaac Schuessler
PV2 Anthony Cosiano
PV2 Austin Lemke

DG - Distinguished Graduate
HG - Honor Graduate

* = AAAA Member

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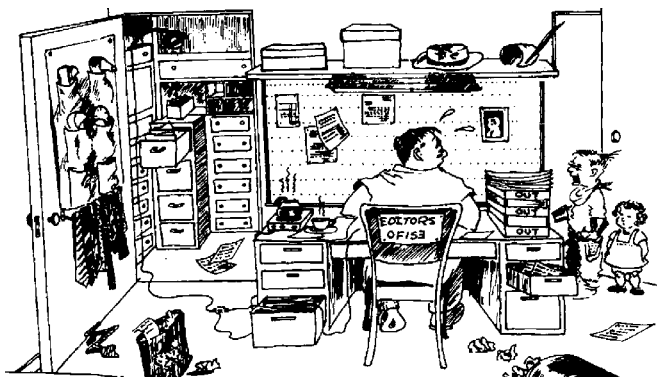
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Art's Attic

By Mark Albertson

Art's Attic is a look back each month 25 years ago and 50 years ago to see what was going on in ARMY AVIATION Magazine. Art Kesten was our founder and first publisher from 1953 to 1987. He was also the founder of the AAAA in 1957 and served as its Executive Vice President. Each month contributing editor Mark Albertson selects a few key items from each historic issue. The cartoon, right, was done back in 1953 by LT Joe Gayhart, a friend of Art's and an Army Aviator, showing the chaos of his apartment-office in New York City where it all began.



25 Years Ago December 31, 1996

The Crane is Almost Extinct*

"The crane is almost extinct. This bird no longer flies in its Army colors, and it now only takes wing in a few isolated areas wearing its civilian plumage. Known as the Tarhe, the Wyandot Indian name meaning 'Crane,' the CH-54 is universally known as the Skycrane or simply as the Crane. In Vietnam . . . the Crane was credited with retrieving more than 380 damaged aircraft, involving \$210 million in estimated savings."

* "The Crane is Almost Extinct," by LTC Paul J. Fardink, pages



38-43, Army Aviation, December 31, 1996 issue.

All Army Rugby Team

MG Daniel J. Petrosky, Aviation Branch Chief and CG USAAVNC and Fort Rucker, Alabama, poses with the Aviation ruggers of the All Army Rugby Team. MG Petrosky presented the championship cup to the All Army team, following their 28 to 5 victory over the All Navy team, the third consecutive year the Army team has won the championship. Pictured from



left to right: Captain Larry Borkowski, 1LT Jim Chinn, 1LT Mike Johnson, Captain Vinnie 'Hoorah' Torza, 1LT Chip Curtis and Captain Brian Shoemaker.



50 Years Ago December 31, 1971

Submariner/Aviator

Shown climbing into a UH-1 is CW2 Robert H. Taylor. Adorning his flight suit are two insignias:

Aviator wings and a submarine dolphin. CW2 Taylor, a flight instructor at USAAVNS served in the Navy submarine service for eight years. He joined the Army in 1969 and, is thought to be the sole Army pilot to wear an unusual set of insignias.



General Maddox at the Controls

BG William J. Maddox, Jr., Director of Army Aviation recently flew a new OH-6C, at the Aircraft Division plant of the Hughes Tool Company, in Culver City, California. The helicopter features a 400 hp engine with noise dampening features, with



five main rotor blades, four tail rotor blades and a 'T' tail. Seated in the cockpit is General Maddox, with John Kerr (left), Director of the Military Helicopter Division and Thomas R. Stuelpnagel, Vice President (right).

Command & Staff

James F. Atkins, to President, Bell Helicopter Company, Fort Worth, Texas.

Colonel Benjamin S. Silver, an ADC, 1st Cavalry Division (Airmobile), Fort Hood, Texas, 76544.



Atkins



Silver

"AAAA Excursion to Spain"

Some eighty AAAA members and their wives and families have joined the February 28-March 13 Anniversary flight to Europe. The Pan-Am 707 flight will follow NY-Lisbon-Malaga-Madrid-Frankfurt-Munich routing with stopovers in Lisbon and Madrid. Tour participants will also take in the three-day USAREUR Region AAAA Convention at Garmisch, Germany.



The Army Aviation Hall of Fame, sponsored by the Army Aviation Association of America, Inc., recognizes those individuals who have made an outstanding contribution to Army Aviation.

The actual Hall of Fame is located in the Army Aviation Museum, Fort Rucker, Ala.

The deadline for nominations for the 2023 induction is June 1, 2022

Contact the AAAA National Office for details and nomination forms at (203) 268-2450 or visit www.quad-a.org

Army Aviation Hall of Fame

Colonel Richard L. Long

Army Aviation Hall of Fame 1989 Induction - Atlanta, GA



Few Hall of Fame nominees have pursued three separate, consecutive careers – in the military, civilian and government sectors – that have brought them in contact with so many elements that make up Army Aviation or have served in an outstanding manner in almost every job that characterizes this segment of our society.

COL Richard L. “Dick” Long was such a person. He had 37 years of federal service, each year of which involved direct aviation-related activities impacting on Army aviation and those who serve in the Combat Arms today.

From his first days as an artillery 2LT undergoing L-Pilot training in November 1942, until later in life, Long’s day-in and day-out duties were devoted to Army aviation.

Long flew combat flight tours in North Africa; Sicily, Italy; and Southern France during World War II. Following the war he served as the Seventh Army aviation officer; and in his post-war career as a maintenance officer, test pilot, an Army Staff officer, and eventually in an assignment as a Senior Executive Service Department of the Army Civilian.

A special inductee, Long performed in an outstanding manner for almost four decades in three separate careers-- an Army officer, an aerospace industry executive, and as an Army civilian.

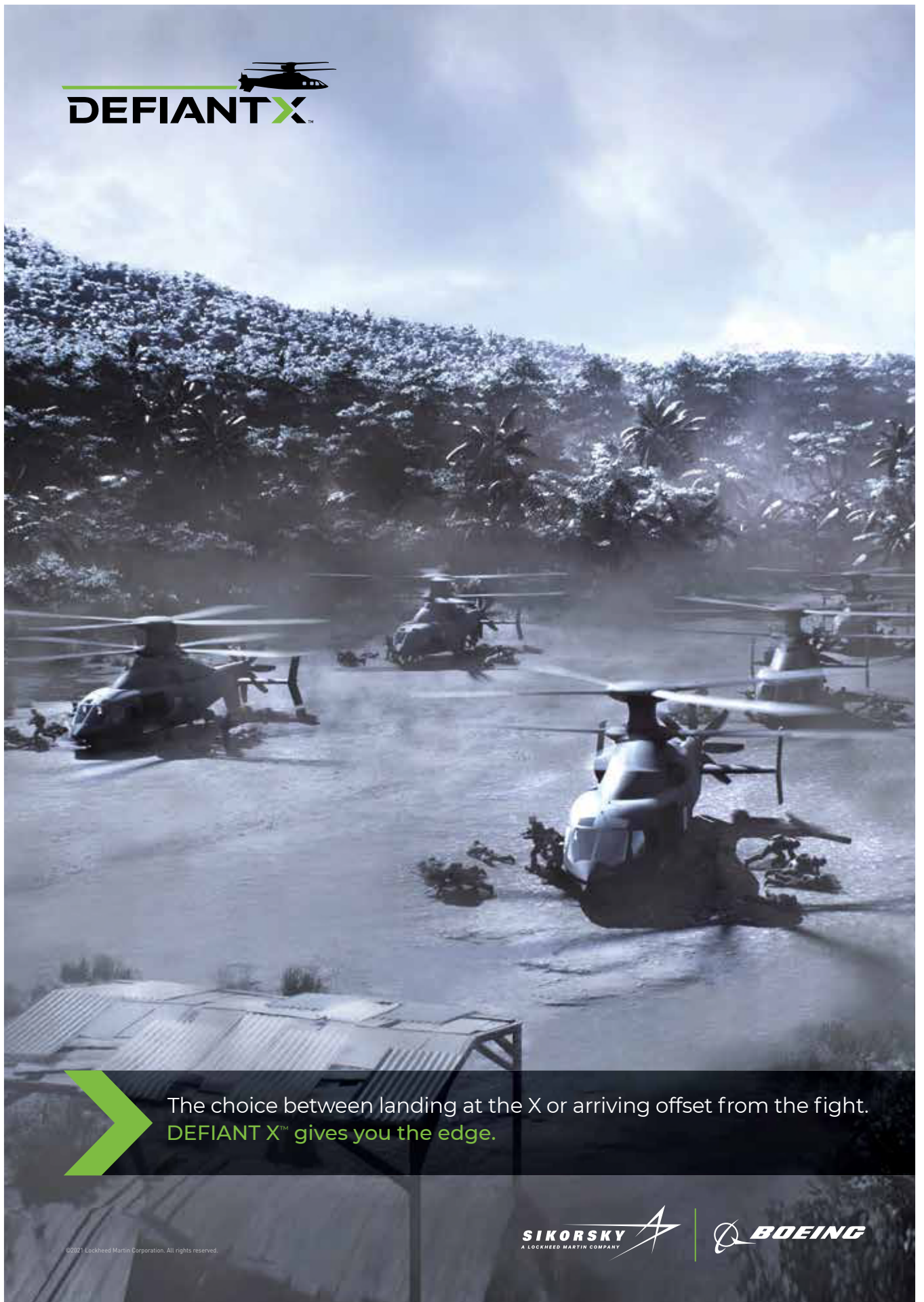
During his 1942 to 1965 military career, he was a highly decorated aviator who served with distinction in assignments ranging from aviation and group commander in the field to aviation research and development tours at the highest levels.

Following his 1965 retirement, Long used his aeronautical engineer degree earned between Purdue and Princeton Universities, with Sikorsky Aircraft as a senior project engineer in Advanced Projects, where he was responsible for translating new concepts into experimental hardware.

In his third career as a senior government service civilian from 1972 to 1984, Long served as a deputy director of Research, Development & Engineering at the U.S. Army Aviation Systems Command in St. Louis, Mo. His actions here greatly helped Army aviation’s \$2.8 billion, 14,000-aircraft fleet in worldwide use at the time.

From 1980 to 1984, Long served as the director of the Army Structures Laboratory at NASA’s Langley Research Center in Hampton, Va., where he directed basic research and exploratory developments to meet Army aviation’s operational needs.

COL Richard Long’s enduring contributions to Army aviation spanning more than four decades has truly marked him worthy of induction into the Army Aviation Hall of Fame.



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