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October 31, 2016



CH-47F: How subsystem PBLs on this global workhorse are keeping the Army and its allies ahead of the pack.

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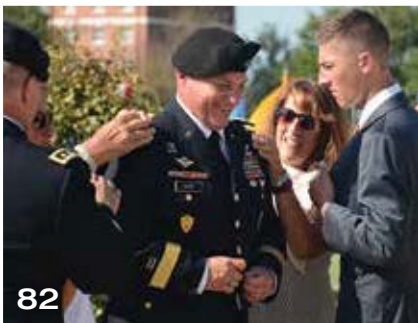
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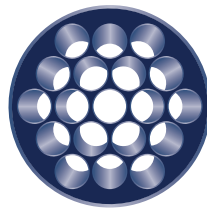
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On The Cover

PAID ADVERTISEMENT: About the Cover – CH-47F operators around the world are using direct contracting with key subsystem providers like Rockwell Collins to guarantee operational availability. Rockwell Collins' subsystem PBL supports 10 CH-47F aircraft and two flight proficiency simulators for the Australian Army. The ability to leverage what is being done for the U.S. CH-47F fleet – while also being stationed in Huntsville prior to aircraft delivery – enabled the teams to collaborate and structure a seamless support contract as the Australian Defence Force transitioned from an acquisition focus to sustainment. The result thus far: 100 percent availability. Caption provided by the advertiser.

Hokanson Confirmed as Vice Chief NGB



NATIONAL GUARD BUREAU PHOTO

Army LTG Daniel Hokanson, a former Oregon National Guard adjutant general and current U.S. Northern Command deputy commander, has been confirmed by the U.S. Senate to be vice chief of the National Guard Bureau. A 1986 graduate of the U.S. Military Academy, Hokanson is a command pilot with more than 2,600 hours in the AH-64 Apache, OH-58 Kiowa and UH-60 Black Hawk helicopters who served in Iraq and Afghanistan. Hokanson won't assume the new title until there is a replacement for the U.S. Northern Command job.

Williams Breaks Space Record



NASA PHOTO

Retired Army colonel and West Point graduate Jeff Williams marked his 521st day in space Wednesday, Aug. 24 setting a record for American astronauts. Williams (USMA Class of '80) wrapped up his time on the International Space Station on Sept. 6 landing in Kazakhstan and coming home with 534 cumulative days off-planet spread over four missions. Scott Kelly, a retired Navy captain, set the old record at the conclusion of his most recent mission, during which he spent nearly a year in space. Kelly returned in early March; Williams launched later that month. Williams served as an Army aviator before his becoming a member of NASA's 1996 astronaut class.

AAAA President In Slovakia



APP PHOTO BY BILL HARRIS

AAAA President BG E.J. Sinclair stands next to MI-24 Hind D at the Slovakia Military Museum at the conclusion of the September 20-22 Standardization and Interoperability Conference at Bratislava. For more information about the conference see the President's Cockpit on page 8 in this issue.

Army Breaks Ground on Museum



U.S. ARMY PHOTO BY JOHN MARTINEZ

Army Secretary Eric Fanning, Army Chief of Staff GEN Mark Milley, and retired GEN Gordon Sullivan, chairman of the Army Historical Foundation, participate in the groundbreaking ceremony for the National Museum of the United States Army Wednesday, Sept. 14, 2016 at Fort Belvoir, VA. The museum, which will sit on about 80 acres on Fort Belvoir, is scheduled to be completed in 2019.

Corrections:

August-September 2016 Issue: Page 98, LTC Frederick's photo is incorrect; Page 107, COL Smith and LTC Alexander photos are incorrect; Page 126, co-author on by-line of VP Chapters North Country column should be LTC (Ret.) Bill Serota; Page 136, the Zieff Family donation was misspelled. We apologize for the errors.



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The International Connection

Our mission, as you know, is “AAAA Supporting the U.S. Army Aviation Soldier and Family.” That said, supporting the U.S. Soldier sometimes takes us to interesting places indeed.

These last few weeks have seen myself and our Executive Director Bill Harris in Bratislava, Slovakia to participate in the “NATO Standardization and Interoperability Conference.” The conference took place September 20-22 with many of our NATO partners in attendance. There were 29 countries represented and it was an excellent opportunity to network AAAA with our allies. Meanwhile, our Senior VP, BG (Ret.) Steve Mundt has been representing AAAA in Colombia at the Colombian International Army Aviation Conference, September 27-29.

What does AAAA have to do with Europe and South America? It is all about coalition warfare and interoperability. None of our countries can afford to go it alone anymore in terms of budget, force structure nor politics. How can we work together to be an effective force that provides a credible deterrence to international aggression?

There is no doubt that the U.S. is the gold standard when it comes to Army Aviation. Everyone wants to learn more about how we do what we do and how we can all work together. This reaches far beyond similar or even identical equipment, to TTPs, doctrine and organization and training.

The issues that surface in these very frank, yet collegial forums are critical to our allies being a huge help on the battlefield. These exchanges and working the solutions we all need through standards and common communications and operating pictures can literally mean the difference between inconvenience and duplication of effort in some cases, to literally matters of life and death.

We look forward to continuing to welcome our friends to our meetings and especially the AAAA Annual Summit in Nashville in 2017. Each year the NATO HISWG (Helicopter Integrated Service Working Group) meets at



PHOTO COURTESY OF SLOVAKIA MINISTRY OF DEFENSE

AAAA President BG E.J. Sinclair presents an AAAA plaque of appreciation to General Milan Maxim, Chief of Defense – Slovak Republic, at the September 2016 Standardization Conference, “Road Map to Interoperability”, in Bratislava, Slovakia.

the Summit to work through these tough issues. Colombia has already reserved their space at the Summit also. More and more, we are seeing interest among foreign nations to participate in our events and we welcome them so that we all can be more effective.

Speaking of the Summit, our Proffer to assist military and government employees in attending the Summit has been approved. So there will be a large presence of key decision makers. We are still over six months away and already we have sold out the Marriott Opryland on a couple nights and have had to expand our block to over 2,200 rooms per night. In addition, the main exhibit hall is completely sold out and the adjacent hall is at 80%. Event and ticket registration opens on December 1, 2016 so get ready. I am sure you know by now that Josh Turner is our entertainment.

Join us in Nashville to celebrate the 75 years since the authorization of the first Piper Cub L-4s in Army Land Forces on June 6, 1942. We have come a long way indeed.

And remember, the ASE and Cribbins symposia are coming soon, 14-17 November in Huntsville.

BG E.J. Sinclair, Ret.
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Thinking about Survivability: Expanding our Aviation Mindset

By MG William K. Gayler



U.S. ARMY PHOTO BY CPT ADAM COLWEEZ

Although capabilities to enhance our survival in combat are often associated with materiel solutions, or “things,” it is the combination of these “things” with trained Soldiers armed with knowledge of best practices that enable us to fight and win in complex environments.

A U.S. CH-47 Chinook helicopter, Bravo Company, 1st Battalion (General Support), 169th Aviation Regiment, Georgia Army National Guard, discharges flares before landing.

When Army aviators hear the word “survivability” they often equate the term with “ASE” – Aircraft Survivability Equipment. As a community, we tend to think of survivability in terms of “things” – black boxes hung on our aircraft that provide specific abilities to detect or degrade the effectiveness of enemy weapons systems. This isn’t necessarily a bad

thing, but it does limit how our aircrews frame the problem of accomplishing our aviation mission in a high-threat environment. We have counted on technology to increase the survivability of our aircraft for as long as we have been a branch. However, ASE is only one component of a survivability strategy that includes how we fly (tactics), our under-

standing of the enemy (IPB), our ability to operate as a member of the combined arms team (doctrine), and the capabilities of the aircraft we employ.

A Set of Capabilities

Make no mistake – ASE matters. When combined with maneuver and an understanding of the threat environ-

ment, it serves the crucial role of enabling our aircrews and aircraft to revise the results of an encounter with the enemy to a more favorable outcome when no other mitigations methods remain. But ASE is one element of aviation survivability, an entire set of capabilities – and our way of thinking about them – that enables us to fight, win, and come through the chaos ready to fight again. In a broader context, an effective aviation survivability strategy requires us to make use of Army Aviation's inherent mobility, speed, and range capabilities as the aviation maneuver force of the combined arms team.

We cannot rely on ASE alone to solve our survivability challenges – because of fiscal constraints, and because we cannot continue to add the weight of additional systems to our existing aircraft without making tough choices about performance trade-offs. This is why ASE modernization efforts cannot happen in a stovepipe.

We must bridge align modernization efforts that build complimentary capabilities across the Army Aviation force to achieve the aims of the Army Operating Concept – achieving surprise through maneuver; striking from multiple directions; using mobility to gain a position of advantage—in the future while meeting the immediate demands of commanders in the field.

Modernization

The Aviation Equipment Modernization Strategy aims to increase our options in this regard by improving our capabilities in terms of reach, protection, and lethality. The Improved Turbine Engine Program (ITEP) takes the first critical step in developing reach – speed, mobility, range, and endurance – to avoid or mitigate high-risk situations, generate maneuver options for commanders, and go where the mission requires. The Advanced Threat Detection System (ATDS) and Degraded Visual Environment (DVE) programs address the threat and environmental hazards we face today while retaining growth capacity to keep pace with an increasingly complex world. Small Guided Munitions (SGM) and the Joint Air Ground Missile (JAGM) programs provide Lethality options that will enable us to eliminate those threats on our terms. As we expand our abilities in terms of reach, protection,

and lethality, so too must we grow our mindset to make the best use of the inherent capabilities of Army Aviation as part of the combined arms team.

Range, Speed, Mobility

We do our branch a disservice if we only think about survivability in terms of our aircraft. In a high-stakes, high-threat, decisive action environment, speed and mobility are critical to the survival of more than just our manned and unmanned aircraft. Our command posts cannot be effective if they lack the ability to swiftly relocate to avoid enemy targeting efforts or the ability to create shared understanding among friendly forces by remaining linked in with forces on the move. Our range, speed, and mobility advantages bring great capabilities to supported ground forces, but those same qualities also demand agile and robust logistics networks able to keep up with the range and tempo of maneuver operations.

To succeed in a complex world, it's not enough to expand our thoughts on survivability from aircraft-related systems – “things” – to a broader

understanding of speed and mobility as capabilities uniquely suited, and necessary, to Army Aviation forces. We must open our aperture wider still.

Truly our best protection comes from effectively integrating Army Aviation as a maneuver arm of a combined arms team. In this framework, we exploit our inherent aviation advantages to enable commanders to dictate the terms of operations; at the same time we increase our own survivability by presenting the enemy with multiple dilemmas in which we are just one of many threats they must deal with. We each have a critical role in this effort, because to do this well requires rigorous collective air-ground training in combined arms maneuver.

Above the Best!

MG William K. Gayler 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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► Chief Warrant Officer of the Branch

Culture Change for Future Aviation Combat

By CW5 Joseph B. Roland

To effectively support unified land warfare forces in the future, Aviation elements will require innovative organizations with multi-function capabilities. Our adversaries continue to adapt and introduce multiple Decisive Action challenges for the Army Aviation enterprise.



U.S. ARMY PHOTO BY CPT BRAN WARRS, 16TH CAB

U.S. Army AH-64E Apache helicopter pilots assigned to 1st Battalion, 229th Aviation Regiment, 16th Combat Aviation Brigade, 7th Infantry Division, land at Orchard Combat Training Center, Idaho, Sept. 29, 2016. The aircraft will be part of Raptor Fury, a month-long exercise to validate 16th CAB's mission readiness with the support of nearly 1,500 7th ID Soldiers.

We must maintain multi-mission superiority and readiness in several key areas, including all-weather/environment operations, long-range mission capability, denied area penetration, advanced targeting, and aircraft survivability. Innovation and transformation are key to maintaining our asymmetric advantage.

Human Capital

Talent Management is critical to the design and conduct of any long duration campaigns required to succeed in the Decisive Action operating environment. Combat Aviation elements must recruit, assess, select, train, educate, and retain only those soldiers with the knowledge, skills, and attributes that will thrive in the most demanding conditions. One crucial area to develop is the Aviation Mission Survivability (AMS) track and associated unit programs.

Developmental Education

Army Aviation requires critical thinkers, competent problem solvers, and highly skilled mission survivability of-

ficers to retain a decisive advantage over our adversaries. These competencies take time to develop; they cannot be rapidly created and employed in response to a crisis. Currently the Aviation Center of Excellence provides two levels for AMS development – the Tactical Operations (TACOPS) Officer Course for building specialized technical skills and expertise, and the Warrant Officer advanced track education for further emphasis on battalion and brigade roles and responsibilities.

TACOPS officers must seek access to advanced training programs to cultivate expertise to implement joint and advanced capabilities in Decisive Action to advise decision makers on risk levels associated with mission execution in a complex environment.

Several institutions across the services provide advanced schooling – the Joint Firepower Course, Personnel Recovery-301, the USAF Electronic Warfare Coordinator Course (EWCC), and the USMC Weapons Tactics Instructor Course (WTI), and Cyber Planner's Course.

End State

To meet future challenges, the TACOPS track focus is on advanced AMS Training, tactics development, personnel recovery, and advanced mission planning to provide units with unprecedented mission capabilities against near peer or peer adversaries. The Aviation branch has to transform TACOPS Officers into highly qualified unit instructors, institute a weapons and tactics course to master advanced aviation skills, and implement proven kinetic and non-kinetic fires integration programs to support and sustain Decisive Action.

Army Aviation continues to support the ground commander with responsive no-fail support anywhere, anytime. To do this effectively requires us to assess mission requirements, modify doctrine and tactics, and train relentlessly.

“Above the Best”

CW5 Joseph B. Roland is the chief warrant officer of the Aviation Branch with the U.S. Army Aviation Center of Excellence, Fort Rucker, AL.



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Individual Soldier Survivability

By CSM Gregory M. Chambers



U.S. ARMY PHOTO BY GSS/BJP/CHAM

This issue of the AAAA magazine is focused on survivability, mainly how we make our aircraft more survivable in a complex combat environment, whether it's a radar threat, an infrared threat or a countermeasure to enable our aircraft to defeat complex systems in order to deliver our combat load to its desired location.

We have added phenomenal equipment, technology and systems to our aircraft and worked closely with industry to protect our aircraft in order to work in these complex combat environments. The resources we have used are absolutely worth every dollar spent to protect our aircraft, and our aircraft are a critical part of the maneuver force. But history has proven, at some point, our most valuable resource, the Soldiers, may find themselves on the ground in direct combat where their individual survival skills will be put to the test. Are your Soldiers

ready for that environment? Individual, functional and personal survival gear are important individual skills that could be key to successful survival in a combat environment.

Individual Training

Individual training is probably the most critical area when it comes to survival in a combat environment, such as physical fitness, weapons training, chemical, biological, radiological, and nuclear (CBRN) training, and individual field craft training. Achieving a

Survival Training at South Camp, Fort Rucker, AL January 2016.

290 on your annual physical fitness test (APFT) is probably not the best metric to measure your stamina for a combat environment; shooting only during the day with your dominant eye is probably not a good measure of weapons proficiency; and the gas chamber isn't the mecca of protecting yourself in a contaminated environment. Enemy threats such as vehicles, aircraft and Air Defense Artillery (ADA) identification – can you identify the threat equipment in the area of responsibility (AOR) you are working in? AOR

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enemy threats, do you know who the enemy is that you are fighting against? Are these important training tasks, and does your unit have the time or “white space” on the calendar to devote to this training? As leaders we must ensure we examine every opportunity to train Soldiers, whether it’s dynamic training, static training or synthetic training. You get paid to be innovative to ensure your Soldiers are ready.

through approved programs of instruction, but this should not limit personnel who are trained with these skills to impart their knowledge with their fellow Soldiers. This includes basic signaling, day and night land navigation, use of flares, land zone markings, basic far and near recognition signals. Again, it’s finding the time on the calendar and setting priorities when it comes to teaching these skills to our Soldiers.

do your PRT sessions incorporate extraction drills? All that high tech gear is really cool if you know how to work it. Most of that gear runs on batteries. Have you trained in a non-dependent electrical environment? Do you know what equipment is electromagnetic interference (EMI) hardened, and can you operate without electricity?

Whether it’s individual, functional or individual survival equipment, a lot



U.S. ARMY PHOTO BY SSG BURGHANI

Functional Training

Functional training provides focused training skills that increase individual Soldier survivability, such as Survive Evasion Resistance Escape (SERE) level “C” training, or SERE level “A” training, Water Survival training such as drown proofing or Helicopter Over-water Survival Training (HOST), and field craft or the basic knowledge to survive with limited resources. All these functional courses are offered at the Aviation Center of Excellence. Although these courses put Soldiers in an environment that they are not familiar with or a situation that is uncomfortable, they teach extremely valuable skills that enable survivability in extreme environments. The intent of these courses is not only to train Soldiers on specific skills but to teach a Soldier what their limits are and how to overcome their limitations. These are structured courses that are taught

Individual Survival Gear

When was the last time an instructor pilot or a nonrated crewmember (NRCM) flight instructor or a section sergeant drilled you or quizzed you on your individual survival gear, your ALSE gear, your individual CBRN equipment? Does your unit mandate where your medical kit goes on your ALSE vest so every Soldier can find it in the dark? Do all your flight rated crewmembers know how to operate individual survival radios, can they do this in the dark? Can Downed Aircraft Recovery Team (DART) crews and flight crews submit a nine-line medivac call or a nine-line call-for-fire call via your survival radio? Do your Soldiers know what is inside their aircraft survival kits and emergency kits, and are those kits placed in aircraft IAW an SOP so all unit members know where they are? Does your unit practice vehicle or aircraft extraction drills, and

Water survival training at Buckhorn Lake, Fort Rucker, AL July 2016.

of the tasks or training events I outlined in this article can be done outside a scheduled training area. Leaders can use dynamic, static or synthetic training methods to train their Soldiers on individual survival. Individual survival training is probably one of the most important things we do as leaders. Make time for it. It’s important.

Above the Best!

CSM Chambers
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CSM Gregory M. Chambers is the command sergeant major of the Aviation Branch and the U.S. Army Aviation Center of Excellence, Fort Rucker, AL.

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For Army Reserve Aviation, Realistic Training is Multi-Component and Joint Training

By BG Scott R. Morcomb

In today's global environment, our nation relies most heavily on her Army to support our national and international interests. This call to action can only be achieved through an unshakeable commitment, on the part of our Army's leaders, to maintaining a combat ready posture at all times.

As an enduring operational force, The U.S. Army Reserve Aviation Command (ARAC) remains a highly professional, value-added partner in the Army's total force. The ARAC has taken this charge and reinvigorated our training model to include multicomponent and joint exercises that mirror the combat conditions our soldiers will inevitably face when their number is called.

Command Philosophy

The term "cohesion" is loosely used in commander's circles but for the ARAC it is more than a punchline. For this Command, it represents a vitally important characteristic of the ARAC's mission command philosophy. Traditional schools of thought have taught that unit cohesion must be practiced at the lowest level in order to ensure mission success. Over the course of my career, I have seen the gradual diminishment of this concept, and for this reason, I personally have adopted a macro-level command model of encouraging joint missions and joint training exercises with



U.S. ARMY PHOTO BY PENELOPE PHOTOS, FORT RUCKUS VISUAL INFORMATION

our sister services and multicomponent brethren. The only way to accomplish this feat is for my commanders to follow a "top-down" emphasis with a "bottom-up" execution model.

All my commanders have the latitude to operate within my provided intent, while emphasizing key task execution to achieve the desired end state. Multicomponent and Joint Training is one of the most viable methods we can utilize within Army Reserve Aviation to execute mission essential task list (METL) based training. Since the Army Reserve is without ground maneuver units, and ground maneuver partners are best paired with Army Aviation, I've encouraged both my company and battalion commanders to seek out local opportunities for multicomponent and joint training. First line commanders who foster these partnerships gain invaluable experience in relationship building, mission planning and mission command tasks. Stretching our Soldiers to think beyond the simple "mission execution" mindset is critical

Flight crews from the 8-229th Assault Helicopter Battalion conduct sling load operations with elements from the 1-163rd Field Artillery Regiment of the Indiana National Guard.

for the grooming of our leaders. Leaders who will be able to consistently add tremendous value to the army reserve aviation for years to come.

Multicomponent Training

In any given year, our general support aviation battalions (GSAB) and assault helicopter battalions (AHB) conduct several multicomponent exercises with other Active Component and National Guard units. Our newly converted assault battalion, 8-229th AHB, continues to service outside elements such as the Indiana and Kentucky National Guard, 101st Airborne Division (Air Assault) as well as various active component engineer battalions on an annual basis. By exercising the mission planning and execution phases with the other components, the benefits will be

seen in the execution of their wartime mission. A tangible result of 8-229th's partnership with the 101st is a memorandum of understanding (MOU) that provides valuable life and logistics support from 101st to 8-229th. Not only is this a significant money saver to the Reserves, it extends time spent training as opposed to coordinating administrative activities. The ARAC believes this MOU is the first example of its kind and establishes a template for future multi-component partnerships. Furthermore, it is in direct accordance with recent FORSCOM guidance on the Total Force Partnership Program (TFPP) that fosters collaborative approaches to increase collective readiness.

Joint and SOF Training

While less formalized, all of the ARAC's flight battalions conduct some form of training and mission support with Joint and Special Operations Forces. In the past five years, multiple units have participated in: the Emerald Warrior Exercise, hosted by USAF Special Operations; Angel Thunder, a USAF Personnel Recovery exercise; Trident Warrior, hosted by Navy SOF, and multiple local missions with units in close

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proximity to each Army Reserve Aviation Facility. They have conducted a multitude of missions to include normal troop movement, aeromedical and casualty evacuation training exercises. Joint and SOF training add a unique aspect to Company and Battalion level training, as it encompasses unconventional tasks such as Special Purpose Insertion Extraction (SPIES) training, Fast Rope Insertion/Extraction (FRIES) training and Maritime External Air Transportation System (MEATS) training. The benefits of these strategic training partnerships has been seen in our crews performance and it has proven to be instrumental for the improvement of our flight crews overall combat readiness.

I am confident that our reenergizing of an old concept of training while focused on the new paradigm of readiness will continue to produce great benefits for the aviation community and our

Army in general. Placing the ownership on the lowest level of command is one way of nurturing our leaders to become forward and unconventional thinkers. Our enemy will continue to advance and grow more sophisticated. The only way to ensure army reserve aviation provides an answer of overwhelming force, begins with the company level tasks. My vision is to empower our leaders to think outside the box and continuously look for new and better ways to improve combat readiness. Freedom of movement is not only a benefit in the battlefield, but is also invaluable as we provide critical and challenging multicomponent training at home station across the entire Army Reserve Aviation Command.

BG Scott R. Morcomb is the commanding general of the U.S. Army Reserve Aviation Command located at Fort Knox, KY.

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▶ 128th Aviation Brigade Update

This month I have asked one of our instructors to introduce you to how your school house has been incorporating the latest technology into the training of our future maintainers. "Above the Best!"
COL Smith, Commander

The Army's New Teaching Aid

By SFC James R. Journigan Jr.

The Virtual Interactive Environment (VIE) is a tool used throughout the Army today. Although simulators have been used in the Army for many years, the VIE is the next generation of equipment in the simulation evolution.

For today's infantry, it bridges the gap between walkthroughs and real life combat. It allows a squad size element to work through simulated scenarios in a virtual environment with minimal risk and operates without the concern for weather considerations. Here in the 128th Aviation Brigade, the VIE is used on a daily basis to reinforce the instruction that students receive prior to working on an aircraft or component. This pivotal tool is currently used in the instruction of seven different Military Occupational Skills (MOS) including the 15D Powertrain Repairer and the 15Y AH-64 Armament/Electrical/Avionics Systems Repairer.

Specific to Each MOS

The VIE system was built specific to each MOS with input from instructors, subject matter experts in the field, course writers, and applicable technical manuals. It uses a computer, combined with interactive touch screen monitors and an interface tablet which allows the instructor to navigate through each section of the program. The VIE program for the 15B and the 15D is designed to provide each instructor the ability to show components and how they work, reinforcing theory of operation down to the lowest level. It displays each three dimensional major component along



SFC Frank C. Rich, an instructor with Co. C, 2nd Bn., 210th Avn. Regt., Joint Base Langley-Eustis, VA, uses the VIE to go over the T700 airflow theory of operation to a class of 15B Powerplant Repairer students.

with its subcomponents, either installed or separate, its functional movement, and any additional driving factor such as airflow or electrical current. Its capabilities also include going step by step through any task that has been programmed into the software. These tasks are mirror images of those contained within technical manuals, and display each component being removed or installed in sequential order as required for that task. This step by step resource is one of the VIE's greatest assets, and the one most used by our instructors.

"You can really see the light come on for students when we use the VIE," stated SSG Soliday, a 15B Powerplant Repairer instructor for Charlie Company, 2-210th Avn. Regt., when asked about the effectiveness of the asset. Students attending the courses come from varying backgrounds. Some have worked extensively as mechanics, whereas others don't have a basic knowledge of the common tools used in a mechanical field. This creates a unique set of challenges for instructors to overcome. For those students who have no mechanical background, the VIE is a widely accepted program that helps them visualize what the in-

structors have taught them, as well as demonstrate where the component is located, what tool to use for that particular step, and which direction to turn that tool. The VIE for the 15B has replaced the engine run cell and reduced cost and time to teach the same tasks. By using the VIE to reinforce the basic skills it has raised the level of proficiency of aviation mechanics that graduate from the 128th Aviation Brigade and move on to Combat Aviation Brigades.

In times of heightened threat awareness, where we may be called upon at any time to defend our nation, producing highly trained mechanics for the Aviation enterprise is paramount. While there are many educational tools at our disposal, the virtual interactive environment is one that is proven effective and is leveraged at every opportunity. This asset bridges training gaps, reinforces in-depth training material that prepares the next generation of Soldiers, and provides unlimited potential to expand our capabilities as instructors.

SFC James R. Journigan Jr. is the first sergeant for Co. B, 2nd Bn., 210th Avn. Regt. at Joint Base Langley-Eustis, VA.



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3D Printed Aircraft Parts – Where Are We Now?

By Mr. David B. Cripps

The December 2015 edition of Army Aviation magazine featured a Tech Talk article on additive manufacturing (AM) that provided a brief description of various AM processes and gave a prediction that it would be several years before you saw 3D printed parts on an Army helicopter.

Like any new technology coming of age, there has been a lot of advancement in the last year, so an update is probably in order.

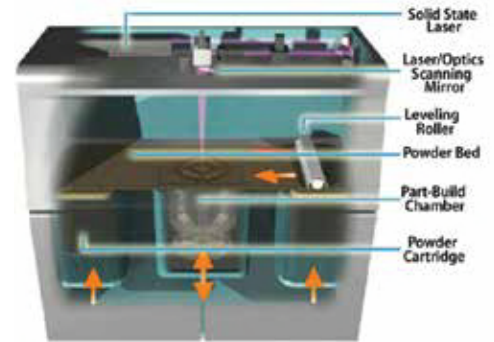
For years there have been 3D printed parts flying on commercial airlines, but they have almost exclusively been in “non-critical applications,” such as the stowable arm that holds your in-seat video monitor. But there has been positive movement into more critical applications. One of the world’s largest manufacturers of turbofan engines for commercial jets has qualified fuel nozzles manufactured by means of direct metal laser sintering (DMLS), where a high power laser effectively welds powdered metal layer after layer, building up a part from a digital file. The company actually began work long ago in hopes of significant reductions in manufacturing cost, and the path to qualification was very long and arduous. The number of manufacturing variables for a process like DMLS is many times more than for more conventional manufacturing processes, and establishing the proper controls to yield a consistent product remains a very challenging task. The actual qualification effort is no more or less rigorous than for conventional manufacturing techniques. As with most fabrication processes, completion of the item to a finished product nearly

always requires additional treatments and processes, such as surface finishing, heat treat, etc. The number of applications where you can take a part hot off the 3D printer and install them directly onto an aircraft will always be very few.

Just a few months ago, the U.S. Naval Air Systems Command flew two 3D printed titanium flight critical structural components in the nacelle of an MV-22B. The demonstration program is limited to 50 flight hours and has hundreds of strain gages applied to the two components and adjacent structure in order to investigate how closely the 3D printed parts match the performance of the conventionally machined parts they may eventually replace. While it is a limited demonstration, it is a huge step in the right direction.

Within the Army, there are also a few demonstration programs in the works, initially focused on components where the structural and vibratory loads are well understood and within the “comfort zone” of understanding of the performance of 3D printed metals. We are specifically looking at a gearbox housing and a particle separator swirl housing this year. More complex and heavily loaded components will follow.

Industry, academia and the Government are all working individually and collectively to mature the technology



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to a point where it not only offers an alternative to manufacturing components with existing designs but even beyond to where we can significantly alter our design approach to take more full advantage of the complexity that 3D printing can enable.

The logistics community is presently establishing requirements for a deployable capability to “print on demand” at the point of need, eliminating the requirement for transporting and pre-positioning vast amounts of spare parts. For today, that’s still Star Wars stuff. But every day it’s getting a little bit closer.

May the Force be with you!

Mr. David B. Cripps is the deputy director of the Aviation Engineering Directorate of the U.S. Army Aviation and Missile Research, Development, and Engineering Center at Redstone Arsenal, AL.

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ED - Treatment & Flight Status

By CPT Steven Brown, D.O.

Q: Doc, Can I still fly if I'm on medication?

FS: Erectile dysfunction (ED) is a very common sexual issue that affects up to one-third of all adult men and is typically defined as the inability to maintain an erection sufficient for sexual activity. ED can be a symptom of a wide array of underlying physical or psychological problems including poorly functioning blood vessels or nerves, hormonal imbalances, medication side effects, depression or anxiety. Evaluation by a physician will include some intimate questions regarding the severity and timing of symptoms, psychological factors and sexual relationships. Risk factors or presence of chronic diseases, such as diabetes and cardiovascular disease, should be discussed in detail. A list of current medications, including supplements, should be reviewed to identify the possibility of ED as a side effect. A general physical exam, including the genitals, is often part of the initial evaluation. Depending on the suspected cause of ED, blood tests may be useful to evaluate liver and kidney function, testosterone, thyroid hormone and fasting glucose levels. If no diagnosis is readily apparent, a referral to a urologist or other specialist may be indicated.

Treatment Options

Treatment of ED initially targets any underlying diseases which may be responsible or contributing to the symptoms. If an underlying hormonal deficiency is identified, hormone replacement therapy may be considered. If there is a high likelihood of a medication side effect, switching to a different medication may be sufficient. If psychological issues are potentially contributing, such as depression or high levels of stress, a referral to a behavioral health specialist may be appropriate. In many cases, no underlying disease is identified and a trial of medication may be warranted.

While not the only treatment option, phosphodiesterase-5 (PDE-5) inhibitors such as sildenafil, have been shown to be a good first-line solution. These medications are effective, relatively easy to use, and have a favorable side effect profile. Sildenafil works by ultimately increasing the blood flow to the penis, which is what initiates and maintains an erection. Sildenafil is not the only PDE-5 inhibitor on the market, but due to its lower cost, it is typically the first choice of many insurance companies including Tricare.

Sildenafil should be taken on an empty stomach about one hour before a planned sexual encounter. Common side effects include headache, indigestion, nasal congestion, and flushing (redness and hot sensation of skin, especially of the face and chest). It should not be used if certain heart conditions are present, but these should be screened for and effectively identified with a routine flight physical. Sildenafil should never be used by someone who is taking nitrates or who is experiencing chest pain. A fairly uncommon, but concerning side effect (especially

among aviators) is retinal dysfunction. Symptoms may include increased light sensitivity, blurring, halos, and a bluish tint or haze to vision. Retinal dysfunction occurs in 3 percent of men taking the lowest dose of sildenafil and becomes increasingly more frequent with higher doses. Visual side effects typically last for 4 hours or less before resolving on their own. If visual disturbances occur, a referral to an eye care specialist may be indicated.

Can I still fly if I'm on medication?

Erectile dysfunction does not necessitate a medical waiver for flight; however, its underlying cause and/or treatment might. If sildenafil is prescribed for treatment of ED, a flight surgeon must report this on every annual flight physical. A grounding period is required to complete a trial of two separate doses of the medication to identify any potential side effects. If no side effects are identified, a pilot may take sildenafil on an as needed basis. Flight duties are restricted for a minimum of 12 hours after each dose.

Question for the Flight Surgeon?

Email questions to AskFS@quad-a.org; we'll try to address it in the future. 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.

CPT (Dr.) Steven Brown is a flight surgeon at the U.S. Army School of Aviation Medicine, Fort Rucker, AL.

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Project Manager Aircraft Survivability Equipment Update

By COL Jong H. Lee



An AH-64 Apache helicopter from 1st Attack Reconnaissance Battalion, 10th Combat Aviation Brigade, Task Force Knighthawk, fires flares while conducting a security and reconnaissance mission.

small fixed-wing aircraft across the Department of Defense. Currently in the post-Milestone B phase, CIRCM will reach First Unit Equipped (FUE) in FY20 with Initial Operating Capability (IOC) in FY21. Eventually, CIRCM will be fielded to a majority of the Army's aircraft to include replacing the ATIRCM system on the CH-47 fleet.

ASE Missile Warning (MW)

In response to a Joint Urgent Operational Need, the full spectrum of acquisition activities are underway to deliver a quick reaction capability to a limited number of rotary-wing aircraft. The materiel solution is being fielded in phases to meet urgent timelines, reduce SWaP, and leverage advanced technology as it becomes available. The solution enhances both MW and IRCM capability.

Over the last year, PMO ASE continued fielding the AAR-57 Common Missile Warning System (CMWS) with the 3rd Generation Electronic Control Unit (Gen3 ECU). Throughout this year and into 2017, production and fielding of the new Gen3 ECU brings an increase in processing power and memory, improved threat algorithms, and hostile fire detection capability for small arms and rocket-propelled grenades (RPGs). Multiple software updates and improvements run in parallel through the next few years to provide protection against emerging threat systems and support foreign military sales (FMS). CMWS integration for the Army Aviation fleet continues with efforts underway to add the system to select rotary and fixed-wing aircraft. Expansion of CMWS



At PM ASE, we are honored and passionate to support and protect Army aircraft. Partnering with our allies, the Science and Technology, joint service, and intelligence communities, industry and user representatives, and acquisition organizations, our focus remains on maximizing the survivability of Army aircraft against continually evolving threats.

As we seek near-term improvements in the current ASE suite, our goal remains providing support to the aviation platforms while maintaining state-of-the-art protection. To provide the advanced capabilities needed, PMO ASE has several near and mid-term initiatives to move us toward our goal that we will highlight in the following product update sections. In our efforts to provide new capabilities, we will always strive to reduce size, weight, and power (SWaP) while improving performance. Any of the steps we take at PMO ASE will be synchronized with our user community.

ASE Infrared Countermeasures (IRCM) Update

The Advanced Threat Infrared Countermeasures (ATIRCM) system continues to provide CH-47 aircrews protection against Man-Portable Air-Defense Systems (MANPADS) in combat and around the world. Over the past year, PMO ASE started fielding ATIRCM systems to combat aviation brigades (CABs) outside of Operation Enduring Freedom, Operation Freedom's Sentinel, and Operation Inherent Resolve to increase survivability of the CH-47 fleet. In the upcoming year, PMO ASE will continue to test the ATIRCM system against emerging threats and improve the software in order to ensure that it remains relevant on the battlefield.

The Common Infrared Countermeasure (CIRCM) system is the lightweight follow-on system for ATIRCM that will provide aircrew protection for multiple rotary-wing, tilt-rotor, and

production and sustainment are major focus areas over the next two years to create a more robust organic depot repair capability for assured support.

ASE Radar Warning (RW)

Another important effort is our adoption of the Navy's APR-39D(V)2 Radar Warning Receiver (RWR). The system represents a significant capability increase over the Army's legacy APR-39A(V)1/4 system and will initially complement, and eventually replace, the APR-39C(V)1, which began fielding in October 2014 as a sustainment upgrade to bridge the gap. The acquisition strategy to adopt the Navy's APR-39D(V)2 was approved by the Army Acquisition Executive in October 2013, and represents a much faster and less expensive path to updating the Army's RWR capability. PMO ASE is working closely with PMA-272 at Naval Air Systems Command (NAVAIR) to merge testing requirements and foster a true multi-service effort. The first APR-39D(V)2 A-Kit was successfully integrated onto an AH-64E in third quarter FY15, and flight testing began in April 2016. The APR-39D(V)2 contains a digital receiver that provides significant process-

ing improvements and allows for the installation and use of more robust software. These receiver improvements, coupled with new dual-polarized antennas, will represent a generational upgrade to the analog APR-39A.

Conclusion

The product updates described above cover the near and mid-term planning horizons. Our future efforts are centered on support to Future Vertical Lift (FVL) platforms with advanced capabilities developed that may include geo-location of threat systems on digital maps; air-to-air and air-to-ground networking of threat information; and multi-spectral countermeasures that protect our aircraft and crews from multi-spectral threats. In order to provide these advanced capabilities to the FVL platforms, PMO ASE needs to use our mid-term initiatives to develop those capabilities. One of those initiatives is the Advanced Threat Detection System (ATDS), the follow-on Program of Record for CMWS, which will drive advancements in missile warning, laser, and ballistic detection capabilities.

In summary, our long-term plan involves an evolutionary approach of

first maximizing current technology through improved interfaces for the short-term, while planning mid-term science and technology investments to provide critical protection capabilities, with the long-term focus of preparing to meet the highly integrated and advanced capabilities required for the FVL platform.

As always, I encourage all of you, as stakeholders in the Aviation Community, to share your issues and concerns with the current ASE suite and help maximize the survivability of Army aircraft. The PMO ASE team continues to work hard every day to protect our Soldiers. I am confident in saying that continued support to theater operations and our users in the field remain our shared priorities. I look forward to meeting many of you at the upcoming AAAA 2016 Aircraft Survivability Equipment Symposium in Huntsville on 14-15 November.

COL Jong H. Lee is the project manager for Aircraft Survivability Equipment located in Huntsville, AL, under the Program Executive Office Intelligence, Electronic Warfare & Sensors.



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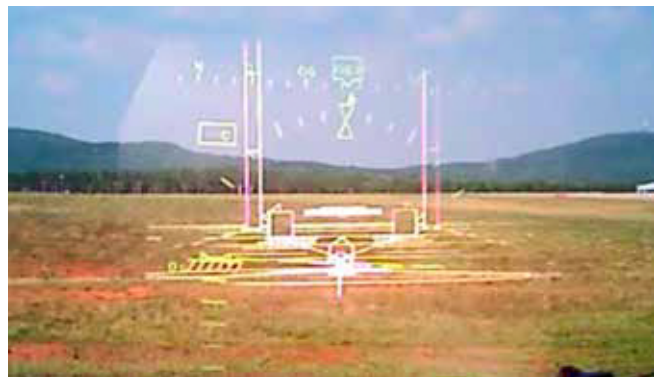


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Product Manager Air Warrior Update

By LTC J. Jay Maher



Above: Air Soldier 3D landing symbology on a UH-60L as viewed through the Day Heads Up Display.

Left: An Army Aviator manipulating the aircraft mounted mission display module (MDM) prior to taxiing.

Air SS

One highlight for this year's update to the field was the successful completion of the operational test (OT) for select capabilities of the Air SS with soldiers from the 25th Combat Aviation Brigade (CAB). The Air SS will reduce crew-member bulk and weight, increase cockpit compatibility and mission effectiveness without the need to tradeoff protection, and improve aircrew situational awareness (SA) and safety. The Air SS capabilities tested and given a "Go" for fielding were the new Layered Clothing Ensemble (LCE) and Rotary Wing Helmet (RWH). The LCE includes a new soft body armor that is thinner and lighter than the current version while meeting the Improved Outer Tactical Vest level of ballistic protection; a new Lightweight Immersion Suit for Aviation (LISA) for cold water protection; standardized and integrated 72 hour personal survival items, including a new survival knife; a thinner, lighter aircrew cooling vest; and the Lightweight Joint Protective Aircrew Chemical Ensemble (LJPACE). The RWH is an improved version of the current HGU-56/P flight helmet featuring increased Field of View and a redesigned suspension and retention system. Delivery of this new capability will begin in 2017.



Under the leadership of the Project Manager Soldier Warrior, as a part of the Program Executive Office Soldier, the Air Warrior team has had a successful year. The Product Manager Air Warrior (PdM AW) continues to develop and test the new Air Soldier System (Air SS) while simultaneously training and fielding Air Warrior Aviation Life Support Equipment (ALSE) that enhances the aircrew's ability to get the mission accomplished safely and effectively and return home to fight again. In 2016 the Air Warrior team continued to equip and support deploying Army aviation units with ALSE in the Operational Camouflage Pattern (OCP), a supplemental oxygen capability, overwater survival equipment, and the encryption module for units deploying with the Encryptable Aircraft Wireless Intercom System (EAWIS) installed.

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HDTs

In July 2016, the Air Warrior PdM completed developmental flight testing in the UH-60L at Redstone Arsenal, AL of the Air SS Helmet Display and Tracking System (HDTs) enhanced 2 dimensional (2D) and 3D conformal symbology along with the new cockpit Computer Display System (CDS). This test was followed by flights with crews from the Tennessee Army National Guard's 1st Battalion, 230th Aviation Regiment in August 2016 with a focus on obtaining their feedback on the new HDTs flight symbology and the CDS components. The HDTs will provide reduced pilot workload and improved crew coordination and has been refined through feedback received from Army aviators. The system features an Advanced Sight and Display Computer (ASDC) providing 2D/3D symbology to a new day/night Helmet Mounted Display (HMD); a helmet-mounted magnetic/inertial tracker that computes head position providing the ability to portray other pilot line of sight; in other words, the ability to see at a glance in your HMD exactly where the pilot seated beside is looking. The HDTs is also instrumental in the proper placement of geo referenced flight symbology, including the 3D conformal flight symbology that provides virtual depictions of the mission route enroute and the ground terrain in the vicinity of the preplanned or pilot designated landing zone. The CDS consists of a platform mounted touch screen display and small computer device that replace the body worn Electronic Data Manager (EDM) in non-digitized aircraft (primarily the UH-60A/L) that have no other moving map or electronic mission execution tools in the cockpit. The CDS retains all of the existing functions of the legacy EDM and provides enhanced map management and messaging capabilities

while increasing the display size and updating the graphical user interface of the legacy Interactive Situational Awareness Software (ISAS). Following a successful OT in early FY2018 the new Air SS HDTs flight symbology and CDS will be fielded first to the UH-60L fleet, followed closely by HDTs flight symbology fielding to the CH-47F fleet.

AW Advanced Restraint Tether System

In June 2016 the PM AW team successfully qualified a new aft crewmember personal restraint tether in response to a request from the Idaho National Guard based upon a close call where a UH-72 crew chief's Personal Restraint Tether inadvertently released from his Air Warrior Primary Survival Gear Carrier while standing on the aircraft skid and maneuvering a patient litter into the aircraft. After a thorough investigation, the root cause pointed to the design of the existing tether's Quick Ejector Snap. By adopting and modifying a restraint system used by the Navy and completion of multiple test events, in June 2016 the new Air Warrior Advanced Restraint Tether System was qualified to fly on board all Army utility and cargo aircraft.

To summarize 2016, the Product Manager Air Warrior Team continues to train, field, and support the Army aviation crewmember with the best life support and mission equipment in the world as we also work to continuously improve your safety, survivability, and mission effectiveness by developing, testing, and fielding new capability in the future.

LTC J. Jay Maher is the Product Manager, Air Warrior located in Huntsville, AL, under the Program Executive Office, Soldier.

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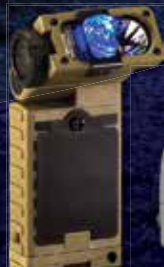


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Army Reprogramming Analysis Team: Bringing Efficiencies to Mission Data Set Development and Testing

By Mr. Will Simmons, Mr. Wayne Field, and Mr. Michael Champion



The Communication-Electronic Command's Software Engineering Center Army Reprogramming Analysis Team Program Office's (ARAT-PO) has a HQDA-mandated mission, through AR 525-15, to develop and maintain the infrastructure responsible for sustaining aircraft survivability equipment mission software such as Mission Data Sets (MDS). In support of the Rapid Software Reprogramming (RSR) Strategy outlined in AR 525-15, the ARAT-PO provides the products and services that Army aviators need to detect and counter air defense threats in the operational environment (OE).

Army Material Command charters the ARAT-PO to conduct infrastructure enhancement activities to focus on forward-looking, innovative, and collaborative RSR. In line with this task, the ARAT-PO recently implemented four process and capability improvements designed to bring efficiencies to MDS threat analysis, development, and validation testing.

Improvements

The first improvement realigned the MDS block cycle development and testing schedules for both Radar Signal Detecting Sets (RSDS) and Radar Frequency Interferometer Systems (RFIS) to increase efficiency. The previous method centered on schedules that, although produced software in a timely manner, did not align engineering work-efforts in a manner to maximize the use of limited time and laboratory resources. The change in approach, which synchronizes MDS development into logical time and threat-focused segments of the ARAT-PO's capabilities, allows the Army to develop MDSs in a manner that reduces software sustainment timelines and eliminates work-effort redundancies.

Similarly, the ARAT-PO reduced the analysis effort needed for sustaining the RSDS by consolidating threat analysis across several systems. While the programming of each system is still an independent task, adopting a single threat analysis base document



ARAT-PO engineers set up the dual testing Common Automated Test Station (CATS) rack attached to an RF simulator.

U.S. ARMY PHOTO COURTESY PHOTO

that encompasses several systems reduces a portion of the work required to sustain these systems. Since this base document specifies threat information used directly for MDS development and testing, one document for multiple systems reduces duplicate levels of effort (a cost saver), alleviates redundant analysis of the same data (a time saver), and ultimately contributes to shorter software reprogramming timelines.

A third process improvement involves MDS validation activities earlier in the development process. Under the previous process, threat analysts did not conduct verification and validation (V&V) testing until engineers fully developed the MDS. This methodology required engineers to fix issues, very late in the MDS development cycle, and then run additional regression and V&V testing. Now, threat analysts are involved in newly-implemented, milestone-driven test-technical review boards (TRB) which occur early in the development cycle to identify and fix defects, prior to final V&V testing. This

enhancement significantly decreases rework and testing time and contributes to reduced reprogramming timelines.

The final improvement also involved MDS testing, but focused on simultaneous testing of similar RSDSs to reduce time and cost. This "dual testing" involves feeding simulation-based RF signals into both systems under testing, in an in-house developed Common Automated Test Station (CATS) rack, while engineers for the systems review MDS performance in parallel. This form of testing allows the ARAT-PO to significantly reduce testing time and costs while producing MDSs for multiple systems based on the same set of threats, ready for dissemination to aircrews.

Summary

These four improvements range across a spectrum of programmatic endeavors, from program planning and schedule adjustments to developmental and technical enhancements. When combined, they reduce the average amount of engineer work-hours required for MDS development, and increase ARAT's efficiency. These improvements equate to faster responses to change in a dynamic and ever-evolving electromagnetic spectrum.

As the ARAT-PO moves into FY17, it will continue to research time and cost-saving measures with the goal of increasing mission readiness by reducing the interval between a change detected in the OE and the response to that change. Through efficiency-focused transformations, the ARAT-PO continues its commitment to providing unparalleled products and services to a regionally focused, globally responsive Army.

Mr. Will Simmons is the chief of Threat Analysis and Mr. Wayne Field is the chief of Software Engineering Activities at the CECOM Software Engineering Center Army Reprogramming Analysis Team Program Office; Mr. Michael (Kyle) Champion provides contractor support as a Current Operations Officer. All are located at Aberdeen Proving Ground, MD.

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Exploring the Survivability Technology Tradespace

By Mr. Ralph Troisio and Mr. Mark Calafut



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The Army Operating Concept (AOC) challenges the modern Army to “Win in a Complex World.” The AOC is a vision of a future force capable of conducting expeditionary maneuver and joint combined arms operations in complex operating environments and in the presence of capable and advanced adversaries. The AOC vision of the future force drives science and technology (S&T) goals for Army Aviation, including objectives to significantly enhance the range, speed, endurance, lethality, and survivability of Aviation assets.

In the area of Aviation survivability, S&T activities are planned and executed in the context of a constantly-evolving threat. Aircraft survivability technologies protect aircraft and aircrew from hostile threats and must be effective against the full range of threats, including sophisticated emerging technologies, as well as legacy equipment. As new survivability technologies are

developed, threat systems simultaneously advance in capability. Recent threat capability advancements include the development of new complex threat guidance systems and greater software reprogrammability. The modern threat picture presents both a technology challenge and a moving target to the survivability S&T community.

Advanced Protection S&T Concept and Strategy

The Army S&T concept for advanced protection is referred to as holistic survivability. Holistic survivability employs a broad range of technologies to avoid, detect, and defeat the emerging threat. These technologies include advanced sensors, defensive electronic attack capabilities, and signature reduction technologies. In the holistic survivability concept, a spectrum of technologies are integrated into a layered survivability suite. When a threat is encountered, the survivability suite autonomously employs appropriate

U.S. Army aviators from 1st Combat Aviation Brigade, 1st Infantry Division prepare to land at Tactical Base Gamberi with Secretary of the Army Eric Fanning during his visit to Afghanistan Sept. 16, 2016.

technologies throughout the tactical timeline to maximize survivability. This concept makes the most effective use of each technology available to defeat the threat given the unique parameters of an engagement.

To realize the holistic survivability suite, the Army S&T community is executing a proactive technology development strategy. This approach reflects a fundamental shift from reactive development to a forward-looking approach. As opposed to waiting for threats to evolve and create potential vulnerabilities, the S&T community instead characterizes classes of threats and projects their technology progression through red teaming. The S&T community then



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proactively develops new technologies capable of defeating both the current and projected threat. In this way the design of the holistic survivability suite and the capability of each individual survivability technology reflect not only the challenges of the current operating environment but also the needs of the future force.

The Army S&T community has closely coordinated its proactive development strategy with the acquisition community to ensure that the Army can rapidly field new technology solutions. The acquisition community has responded by developing aircraft survivability systems with more open and reconfigurable architectures capable of effectively transitioning new technologies. This coordinated strategy ensures that the Army's fielded aircraft survivability systems evolve with and outpace the threat.

The Advanced Protection Working Group

In coordination with the U.S. Army Aviation Center of Excellence (USAAACE) and the office of the Deputy Assistant Secretary of the Army (DASA) for Research and Technology (R&T), the survivability S&T community recently established an advanced protection working group. The advanced protection working group is co-lead by the Communications-Electronics Research Development Engineering Center (CERDEC) and the Aviation Missile Research Development Engineering Center (AMRDEC). The core team of the working group also includes rep-

resentatives from the Army Research Laboratory (ARL), the Armament Research Development Engineering Center (ARDEC), the Institute for Defense Analysis (IDA), MIT Lincoln Labs, and the Georgia Technical Research Institute (GTRI). In addition, the working group has an established team of consulting subject matter experts from a diverse array of government and academic organizations, including the Defense Advanced Research Projects Agency (DARPA), the Space and Missile Defense Command (SMDC), the Naval Research Laboratory (NRL), and the Air Force Research Laboratory (AFRL). The group also consults with a range of Department of Defense stakeholders, including user community representation from USAACE, acquisition community representation from the Program Management Office for Aircraft Survivability Equipment and from the Program Executive Office for Aviation, intelligence community representation from the Missile and Space Intelligence Center (MSIC), and tri-service representation from the Electronic Warfare Community of Interest and the Joint Aircraft Survivability Program Office (JASPO). This broad spectrum of representation provides the working group with both breadth and depth of technical, requirements, and acquisition knowledge.

The mandate of the advanced protection working group is to identify the technology solutions that will comprise the holistic survivability suite of the future force. The group initiated activities in May of 2016 and began

from the basic premise that there is no single 'silver-bullet' survivability technology capable of addressing all future threats and operational scenarios. Instead the group is exploring an array of technologies both within and outside of traditional survivability and considering how these technologies can be coordinated to maximize protection. The group has a target time horizon of ten years and beyond, and is focusing on solutions that will be effective against the full range of threats now and for the foreseeable future. The group will leverage ongoing analysis and red-teaming efforts that are being implemented as part of the proactive technology development strategy.

Conceptually, the working group has established an initial concept for holistic survivability composed of three layers of protection. The first layer of protection consists of an array of passive technologies that allow the aircraft to avoid and detect threats. If passive approaches are inadequate, the survivability suite employs a second layer of protection consisting of targeted active technologies. This layer includes a range of technologies to defeat the threat, such as traditional defensive electronic attack and infrared countermeasures. Finally in the most-stressing situations, the survivability suite employs technologies from a third layer of protection capable of providing more indiscriminate protection. These technologies serve as a last line of defense against the most challenging threats. This concept leverages the spectrum of available technologies to

provide multiple layers of protection and maximize protection against emerging threats.

The advanced protection working group will provide recommendations to Army leadership in June of 2017. The group is considering improvements to traditional technologies, as well as potential leap-ahead alternatives as part of the holistic suite. It is considering a range of factors in its recommendations, including expected technical performance and technical risk of the technologies in each holistic suite, as well as the expected size, weight, and power (SWaP) burden of the suite and the anticipated development and acquisition cost. The group will also provide Army leadership with context on the technology trade-space between the available alternatives.

Conclusions

The evolving threat has challenged the S&T community to approach survivability from a holistic perspective and to develop capabilities proactively. As the Army looks to structure its S&T investments for next-generation survivability, it has recognized that

future solutions will span far beyond traditional organizational boundaries and areas of expertise. The advanced protection working group provides an avenue for broad collaboration between technical experts across specialties and backgrounds, allowing for open consideration of traditional technologies and potential leap-ahead alternatives. The structure of the group also reflects the practical reality that technology is only a part of the solution. By including representatives from the acquisition and requirements community, the working group is able to consider alternative perspectives and begin coordination between future requirements and solutions at the earliest possible level. Ultimately, the Army will meet the challenge of the emerging threat not only through the development of advanced technologies, but also by establishing effective practices for collaboration and coordination.

Mr. Ralph Troisio is chief and Mr. Mark Calafut is the senior engineer of the Electronic Warfare Air/Ground Survivability Division of the Intelligence and Information Warfare Directorate (I2WD),

Advanced Protection Working Group



Communications-Electronics Research, Development, and Engineering Center (CERDEC), U.S. Army Research, Development, and Engineering Command located at Aberdeen Proving Ground, MD.

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Refocusing Army Aviation Survivability

By CW5 Christopher A. Johnson



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Evolution is required for today's Army Aviation enterprise to succeed in the contemporary spectrum of conflict. In order to maintain precision support of U.S. Army ground forces, aviation elements must remain agile, adaptable, and adept. Hybrid warfare and the global security environment have reintroduced "Decisive Action" challenges to the Aviation enterprise. These include providing reach, protection, and lethality dominance to the nation's premier land-warfare operators. To meet these demands, Army Aviation and the Survivability track will need to transform organizational roles; refocus combat readiness programs; pursue advanced acquisition technologies; and improve professional military education (PME).

In order to enable today's Decisive Action operations, the Tactical Operations (TACOPS) track returns to the challenge of refocusing Army combat aviation on warfighting skill sets. The branch currently concentrates on survivability management, tactics, aircraft survivability equipment (ASE) training,

mission planning, unmanned aircraft systems (UAS) integration, airspace deconfliction, and personnel recovery. These focus areas provide relevant, credible, and mission focused aviation leadership that is critical in today's security environment. Most importantly, enhanced TACOPS leader development and culture-change has been instituted in doctrine and PME courses to build unit-trainer capabilities that will provide commander's increased effectiveness and generate combat aviation power. This will improve combat aviation brigade (CAB) capabilities to fight, survive, and win against peer or near peer adversaries while supporting the ground forces in a contested environment specifically involving integrated air defense systems (IADS).

The Tactical Operations Officer track has embraced this survivability mission to ensure Army Aviation mission accomplishment on the digital battlefield. This engagement and new opportunities continue to require adaptive leadership and functional investments by warrant officers across the enterprise. The U.S. Army Aviation

Enabling Decisive Action with the Survivability Triad (Tactics, Countermeasures, and ASE)

Center of Excellence (USAACE) has recognized this point and instituted a TACOPS officer PME redesign to assist in building this expertise and understanding. Survivability is also focusing on intelligence, space, cyber electromagnetic activities, and the joint communities to further define the overall security environment and optimize current capabilities.

In addition, the TACOPS PME redesign is instituting advanced maneuvers, Anti Access Area Denial (A2AD) mission planning, and tactical leadership to enable precision air-ground operations, in support of U.S. ground forces. Complementing these initiatives will require modernizing aviation capabilities to enhance U.S. forces interoperability, precision strike, degraded operations, and air dominance. These advancements will assure success in defeating the Decisive Action threat and minimize the fiscal



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Mission Focused Training

challenges to maintain readiness, standardization, and capabilities throughout the enterprise.

Survivability

To meet these challenges the DOTD Survivability branch has initiated several areas of advancements. The first area is instituting changes to mission survivability in AR 95-1, *The Aviation Regulation*, TC 3-04.9 *The Commander's Survivability Manual*, and TC 3-04.11, *The Commander's Aircrew Training program*, that provide a detailed roadmap for ASE phased training into the Commander's aircrew training program. To meet the training needed for our aircrews to fight and survive in a contested air environment, the branch has implemented tailored survivability materials for the commander to use. These structured building blocks of progression will take part on several tiered levels. At the individual level, Computer Based ASE Training-Operator and Classified (CBAT-O / CBAT-C) enhance training unit aircrews on the basics of ASE operations and employment. Future updates will move CBAT-O to the Army's online learning database (ALMS) for easier access and tracking. Additionally, upcoming initiatives will expand to bring aviation maintainers into the CBAT program. CBAT-Maintainer will provide the training for avionics and support personnel on the tasks required to troubleshoot and maintain all types of ASE. A virtual ASE module will let supervisors set faults and maintainers will be able to run through step by step maintenance procedures on virtual ASE equipment.

Currently at the crew and collective

level, the only way to train against threat systems is either in the Mission, Design, Series (MDS) aircraft simulators or in the Aviation Combined Arms Tactical Trainer (AVCATT). Both of these systems have benefits and challenges when it comes to effective threat scenario-based ASE training. Recognizing the most preferred method is to train in the aircraft; however with the limits on ASE equipment and lack of home station multispectral emitters this is currently not possible. Several acquisition organizations are working to provide an ASE emulator and virtual threat training software that will promote advanced tactical scenarios involving survivability. As ASE training becomes more prevalent at home station, units will need a more robust capability to evaluate themselves against mission-tailored threats. This is currently a scheduled upgrade to combined training centers (CTCs) Opposing Forces (OPFOR) air defense capabilities. Presently the Man-portable Aircraft Survivability Trainer (MAST) has been a success at replicating (Infrared) IR Man Portable Air Defense Systems (MANPADS). The next proposed improvements will field a new mobile Radar Frequency (RF) threat system which will replicate legacy to current RF threats. This emitter system will have the same attributes as the modern RF surface to air missile (SAM) systems and allow our aircrews to fight against live emitters in an IADS environment. By providing digital threats in any battle space and embedded training on the aircraft, aircrews will be able to maximize proficiency and effectively train multi-ship tactics and increase survivability readiness.

Mission Planning

In addition, over the last decade Army Aviation has enjoyed air superiority and freedom of maneuver in the area of operations with little to no deliberate mission planning. The forthcoming ATP 3-04.2, *Army Aviation Combat Tactics and Survivability* manual has also identified additional gaps in the ways that Army aviators conduct mission analysis and planning to address the complexity of the emerging threats. To reinvigorate these atrophied skills, the aviation branch is working solutions to rectify these both in the institutional training environment and targeted software solutions. By utilizing these improved technology tools and the ability to synchronize with the joint community will provide the warfighter the optimal and timely situational awareness. To begin this process, the Survivability Branch has participated in final testing for XPLAN 7.6.2 update for full material release by first quarter of fiscal year 2017 (FY 17). USAACE's collaboration with the AMPS Product Manager (APM) has also instituted a new training capability, the AMPS Academy which provides a new training capability of tailored training for the Aviation warfighter on various mission planning, networking, and administration of the systems. The unit funded training will be scheduled by the AMPS Help desk and conducted monthly in Huntsville, Alabama. Upcoming training dates and additional information are available at: <https://asako.peoavn.army.mil/sites/NOMP/AMPS/AMPC/AMPS/SitePages/Home.aspx>. In addition, as the force structure adjusts to the future manning forecasts, the Survivability Branch recommends that units cross-train and ensure core areas of mission planning expertise resides with all assigned aviators to enable critical decisive action capability; this maximizes support in accordance with FM 3-04, *Army Aviation*, seven core competencies to U.S. ground forces.

Unmanned Aircraft Systems

Another key area of focus is the full implementation and survivability integration of UAS capabilities into the enterprise. UAS capability and utilization continues to evolve with increasing task and mission responsibilities outside of the original scope. In order to meet current requirements for timely air-ground support, this will require future tactical system investments to ensure rapid deployability. Multiple interchangeable

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Tailored mission profiles mitigate the threat.

payloads will be required to provide versatility in accomplishing the constantly changing mission requirements. The UAS mission will continue to evolve with time, deployments, and required ground force mission support. Currently Army UAS systems are focused on reconnaissance, surveillance, electronic warfare (EW), target interdiction, and communications/data relay. Continued upgrades to survivability and mission command systems, EW reconnaissance, and munitions may provide additional robust A2AD capabilities. The most significant UAS issue today is lack of realistic training; UAS Operators skills have decremented to Counter-Insurgency (COIN) surveillance support thus limiting commander's options. More emphasis needs to be placed on target identification threat analysis, and proper reconnaissance procedures. These focused investments will be required to properly integrate UAS combat knowledge and skills. Lastly, performance improvements will need to be developed to equip UAS systems with effective survivability tactics, techniques, and procedures (TTPs) to provide optimized capability.

Personnel Recovery

Personnel Recovery (PR) is another critical aviation area that has made progress with emerging initiatives on Army critical tasks designation, doctrinal improvements, resourcing, and readiness opportunities. The first initiative is to ensure the TACOPS community continues to shape expertise that will result in subject matter experts (SME) for Army Aviation. The TACOPS course provides a basic PR

foundation, however, the lack of advanced training and unit integration has demonstrated a need to have a greater level of knowledge. The Survivability Branch recommends command support and unit-funded resourcing for leader development and course attendance to Army Training Requirements and Resources System (ATRRS) courses (e.g., SERE-C, PR 301, PR 303, and PR 297) to ensure maximum PR depth, expertise, and combat theater entry requirements readiness. Secondly, as the mission evolves for Army Aviation, the branch will continue to emphasize developing mission focused doctrine and improving PR synchronization with the Joint community. DOTD has been actively participating in the Air Land Sea Application (ALSA) Center working group developing a Multi-Service Tactics, Technique, and Procedures (MTTP) publication for joint PR. In addition, the branch has been coordinating with the Forces Command (FORSCOM) G/3/5/7 PR representative as they continue to refine and develop their PR/ Situational Training Exercise (STX) training, with a goal of instructing assigned PR officers on how to establish tailored programs that generate readiness in their units. Furthermore, the Survivability Branch is currently contributing in the Army PR Proponent Office's Critical Task Site Selection Board which is working to select mandatory tasks to be completed by all soldiers.

Quick Reaction Test

Recently, USAACE enterprise has begun a TTP development program

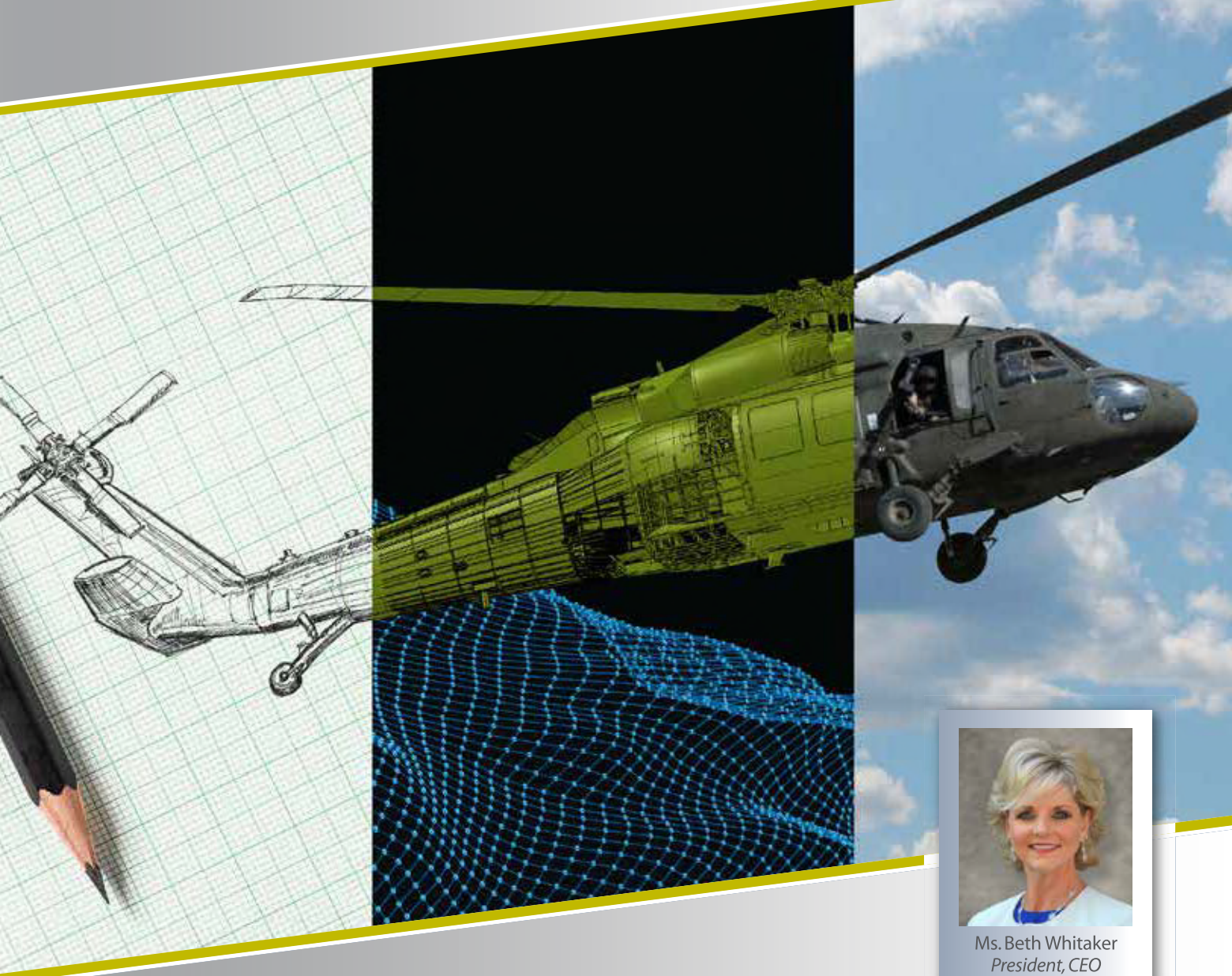
with the goal of enhancing CAB and Joint rotary wing aviation capabilities. The branch rewrite of the ATP 3-04.2 tactics manual highlighted this critical requirement to address survivability against emerging threats. The FY 17 Quick Reaction Test (QRT) process will potentially facilitate an avenue to assist the Aviation Branch to effectively validate and verify current operational ASE suites and tactics against emerging threats. The first planned operational assessment initiative will optimize the ability of the rotary wing community to employ a combination of aircraft survivability equipment, countermeasures, and defensive maneuvers to reduce vulnerability of aircrews against adversary IADS/ A2AD problem sets. This testing will provide objective assessments for fielding of precision aviation capabilities and will further define processes and validate requirements needed for enhancing future penetration of denied areas by air, sea, or land, including the use of advanced technologies.

In summary, this update demonstrates that the TACOPS track and the Survivability community continue to be a critical mission enabler for Army Aviation where it projects U.S. ground forces anywhere, anytime, and in any environment for unprecedented mission success. The goal of this article was to provide updates, insights, and recommendations for consideration by the Army Aviation leadership, CAB personnel, and the community of interest in the shaping of the future aviation force. In closing, the Survivability Branch office is always searching for qualified and interested personnel. If you feel like you have the experience and ability to contribute to the Aviation Branch's survivability areas of concentration then contact the DOTD Survivability office for packet consideration.

Above the best!

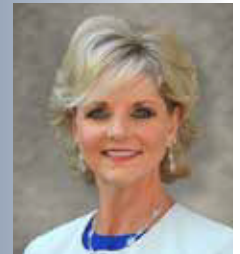
CW5 Christopher A. Johnson is the chief of the Survivability Branch, Directorate of Training and Doctrine, U.S. Army Aviation Center of Excellence at Fort Rucker, AL. He is a former Regiment TACOPS Officer, and Instructor pilot with the 160th Special Operations Aviation Regiment (Airborne) flying the MH-47E & G. Additional major contributors to this article were: CW4 Dennis Boothe, CW4 Eric Christian, CW3 Greg Lawrence, and SFC Joseph Armer.

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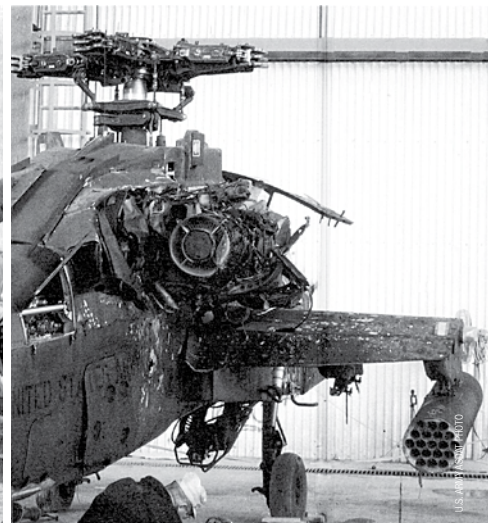
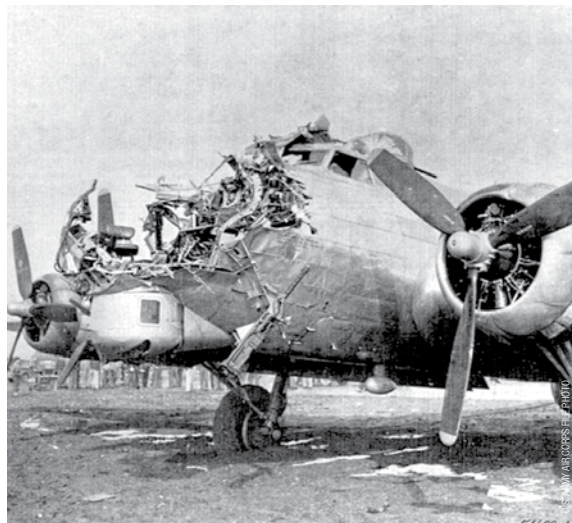
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Battle Damage Collection

By CW3 Mark Chamberlin and Mr. Jeff Whitmire



Since World War I, military aviators have recognized the importance of collecting and analyzing battle damage in order to support aircraft upgrades, improve new aircraft design, and develop better survivability measures. During World War I, the role of aviation evolved from simple scouting to include more complex offensive operations. Scout planes, such as the French Blériot XI, were gradually supplemented by planes designed to engage the enemy with direct fire, like the British Avro 504k. Both aircraft were quickly upgraded to improve their effectiveness. By collecting and analyzing battle damage data from each surface to air fire (SAFIRE) event, engineers were able to determine what improvements were needed in future aircraft designs. However, the engineers during World War I remained focused on upgrading existing aircraft to make them more effective in combat, not on designing future aircraft to make them more survivable for their crews.

Before World War II, however, engineers began to shift their focus more to the survivability of the aircrew. The design development of the B-24 and the

B-17 bear this out. The B-24 incorporated a high-aspect Davis wing, which had low drag characteristics at a low angle of attack, giving it a bomb load, range, and cruising speed far superior to that of the B-17. However, the B-24's airfoil was quickly degraded by any flak or cannon fire incurred from German fighters. The B-17, on the other hand, could withstand large amounts of battle damage, keep the crew safe, and continue flying, which earned it the nickname "The Flying Fortress."

Those data points collected on the more survivable B-17, like a larger wingspan, and pressurized cockpits for higher altitudes, went into the design of the B-29, "Superfortress," which reached initial operating capability (IOC) in 1942 and saw utilization until its retirement in 1960.

Nearly twenty years after the end of WWII, the first new fighter that incorporated survivability from its inception saw service in Vietnam. This new fighter, the F-4, was capable of taking large quantities of SAFIRE, and proved to be very survivable unless hit in a specific location. The F-4 had two independent primary sources of

Above left: British Avro 504K biplane

Above middle : Boeing B-17 Flying Fortress combat damage

Above right: AH-64 Apache combat damage, Operation Iraqi Freedom

hydraulic power that converged at the dual tandem control surface actuators. A hit in the vicinity of any actuator powered by both primary sources could cause a total loss of hydraulic power at that actuator and possibly all actuators. When the hydraulic power to move the control surface was lost, the surface would usually go hard-over, resulting in an uncontrollable aircraft.

This type of vulnerability, where a single hit at a critical location on the aircraft can lead to an aircraft attrition kill, is known as a single-point kill. Consequently, this area was later armored, reducing the F-4's vulnerability to SAFIRE and greatly increasing its survivability, an upgrade made possible by collection of battle damage.

In collecting and analyzing battle damage, determining the specific cause of damage to the aircraft is very impor-

A military helicopter is shown in flight against a dramatic sunset sky. A laser-guided rocket is being fired from the helicopter, with a bright yellow laser beam illuminating the rocket's path. The helicopter is equipped with various sensors and weapons.

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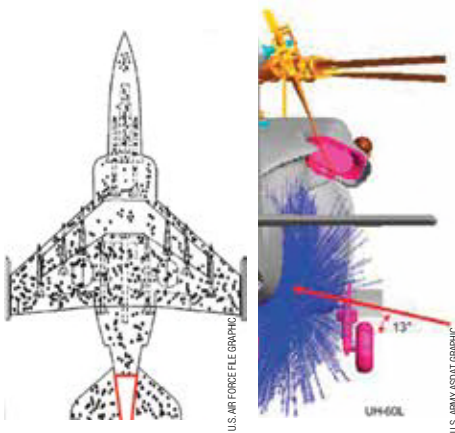
tant. For example the UH-1 helicopter that flew in Vietnam underwent several upgrades to make it more survivable against small arms fire. As a direct result of the battle damage data collected on UH-1s in Vietnam, the UH-60 design incorporated dual engines, redundant hydraulics and seats that compress for crew survivability making it one of the most survivable helicopters ever built.

BDC and ASE Development

Collection of battle damage not only contributes to upgrades and new aircraft designs, it has also become an integral part of developing ASE. Early in Operation Iraqi Freedom (OIF), a Tiger Team was assembled to determine the causes of individual SAFIRE events. Several aircraft were shot down by weapons systems which the Intelligence community assessed incorrectly based on human intelligence (HUMINT). The Tiger Team used battle damage data and forensic evidence, instead of HUMINT, to correctly assess the weapon system used in these shoot-downs. The Tiger Team's assessment differed from the Intelligence community's assessment. As a result, new aircraft survivability measures were adopted, which reduced the number of aircraft shot down. Today's Joint Combat Assessment Team (JCAT) and the Army component to JCAT, the Aviation Survivability Development and Tactics (ASDAT) team, investigate and report on combat damage incidents to assess the threat environment for operational commanders and collect data to support aircraft survivability research and development. JCAT remained in the Area of Responsibility (AOR) collecting battle damage, while ASDAT deployed on catastrophic events. JCAT personnel continued their mission of collecting battle damage data, which often included forensic evidence, while continuously deployed to OIF/OEF for over a decade.

Responsibility for BDC

In November 2014 the Request for Forces (RFF) for support by JCAT expired. With JCAT no longer collecting battle damage data for deployed units, the task of collecting battle damage data now falls on the tactical operations (TACOPS) officers or the maintenance officers in Army Aviation units. The requirement for collection of combat damage is stated in AR 95-1, para 6-5, b. "Unit



Left: Diagram of an F-4 showing a single-point kill location on the aircraft (in red) which was identified by BDC and led to the area being armored, reducing the F-4's vulnerability to surface to air fire (SAFIRE).

Right: UH-60 battle damage simulation

commanders will ensure damage to aircraft from weapons or weapons effects that is incurred during missions is recorded and submitted in accordance with this chapter." The next update to AR 95-1 will delineate battle damage collection versus centralized battle damage assessments which are to be conducted by ASDAT or JCAT. When ASDAT or JCAT are not available, unit personnel will be required to collect damage data in accordance with published procedures. ASDAT is solely reliant on TACOPS and maintenance officers to collect combat damage for the future of military aircraft, unless the unit commander specifically requests ASDAT's support.

Despite this reliance on TACOPS and maintenance officers, there is currently no battle damage collection training program for TACOPS officers. As an expedient remedy, ASDAT has integrated pre-deploying TACOPS officers into JCAT Phase One training at Fort Rucker, Alabama. However, the training goal for TACOPS officers is to learn how to collect battle damage data, while the goal of JCAT Phase One training is to prepare service members to become assessors. JCAT assessors receive Phase II and Phase III training in order to provide them the training and credentials to conduct battle damage assessments. Units that receive pre-deployment ASDAT briefings also receive a separate briefing that segregates the TACOPS officers specifically for training in the combat damage collection process.

The Way Forward

The way forward in the collection of combat damage for ASDAT consists of three different courses of action. First, ASDAT will continue to train the force on collection during pre-deployment training events. Second, ASDAT will present semi-annual or quarterly battle damage collection classes using the Aircraft Combat Forensic Lab at Ft. Rucker. Finally, ASDAT will work with the observer controllers (OCs) at the combat training centers (CTCs) in order to develop battle damage collection scenarios to reinforce the training TACOPS Officers receive on battle damage collection.

Simply collecting battle damage, however, does not provide engineers with the information they need to support aircraft upgrades, improve new aircraft design, and develop better survivability measures. Battle damage must be assessed, archived and analyzed, which is no simple task. For this reason, specialized teams exist to accomplish this task. These teams consist of personnel from the Joint Aircraft Survivability (JAS) program, ASDAT, JCAT, and the Defense Systems Information Analysis Center (DSIAC), who compile the data from every SAFIRE incident.

Their tool for archiving and analyzing battle damage data is the Combat Damage Incident Reporting System (CDIRS), which is available on a SIPRNet website. This information can then be scrutinized in order to support aircraft upgrades, as in the case of the F-4, improve new aircraft design, as in the case of the B-29 and UH-60, and to develop better survivability measures, as in the case of the Tiger Team in OIF.

Since World War I, military aviators have recognized the importance of collecting and analyzing battle damage data. Today, the tools have changed, aircraft are more complex, and engineers focus more on survivability, but the purpose of collecting battle damage data remains the same.

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The Aviation Systems Project Office

By COL Mathew J. Hannah and Ms. Christian Sumner



The Aviation Systems Project Office supports Soldiers worldwide with responsive services and overmatching technologies. We manage nearly 50 distinct product lines, to develop, acquire, modernize, field, and sustain common hardware, software, and services for every aircraft in the Army Aviation portfolio. PM AS has long served the rotary wing and fixed wing communities, enabling aviators and crew with the tools necessary to execute the mission. Our portfolio is now growing to include providing common aviation solutions to the unmanned aircraft systems (UAS) community as well.

Maintaining Focus & Aligning Priorities

The austere budget environment drives unprecedented operational and readiness challenges. PM Aviation Systems maintains a multi-level focus, working to ensure we meet user, Army, and Department of Defense (DoD) requirements and priorities in the near, mid, and long-term.

In the near-term, the product offices continue to maintain readiness – a #1 priority for the Army Chief of Staff and an absolute necessity for the user – as well as managing upgrade and modification efforts to address known and emerging obsolescence and requirements. The product offices have also been heavily involved in supporting the Army's ongoing initiative to ensure taxpayer-funded efforts have appropriate oversight within the Acquisition Category (ACAT) system.

Over the mid-term, the Project Office continues to monitor and influence efforts within the science and technology (S&T) community. Both the product and project offices are deeply engaged in two of the Army's top development pri-

orities addressing safety and operational impacts to the user, finding solutions for safer flight in Degraded Visual Environment (DVE) conditions and ensuring emerging Assured-Position, Navigation, and Timing (A-PNT) technologies protect the integrity of data in theater.

As the Army executes the long-term Strategic Portfolio Analysis Review (SPAR) to examine capabilities and requirements, PM AS will align our programs and efforts to ensure synchronicity.

Aviation Ground Support Equipment (AGSE)

In an era of high operational need, the AGSE Product Office supports the crew chief and crew, employing innovation to create efficiencies across the ground support equipment lines. The AGSE team ensures systems are ready as needed, supporting every rotary and fixed wing aircraft in the Army's portfolio. PM AGSE has been called to extend sustainment support to the UAS community. The AGSE team, in coordination with UAS, is gathering information necessary to define a UAS-specific tooling requirement scheduled to begin fielding in Fiscal Year 2018 (FY18) as part of the Common Aviation Tool System (CATS).

In early 2016, AGSE achieved an important milestone in gaining approval to proceed with Full Rate Production (FRP) of just over 1,000 Aviation Light Utility Mobile Maintenance Carts (ALUMMC). Prior to the ALUMMC, various units and stations had devised unique cart solutions; none were logistically supportable. As a common solution, Soldiers and taxpayers benefit from ALUMMC.

Aviation Mission Equipment (AME)

The AME Product Office manages friendly force mission command sys-

tems for the Army Aviation fleet to include common solutions for communication, navigation, surveillance (CNS), and global positioning systems (GPS). The AME team is also focused on establishing information superiority in the battlespace.

A-PNT has become a priority DoD initiative, with multi-service participation. As a high volume GPS user, PNT data is a critical enabler for the Army. While the Army paces the ever-changing threat to information security in theater, PM AME is working to ensure the integrity of PNT data and data flow across the suite of Aviation CNS and GPS technologies. PM AME-managed CNS/GPS upgrades in development will provide A-PNT capabilities for signal resiliency and Military Code (M-Code) integration to increase data security across the fleet. Reliable A-PNT greatly affects how we shoot, move, and communicate.

Aviation Networks and Mission Planning (ANMP)

PM ANMP provides the aviation portfolio with cutting-edge interoperability, mission planning, maintenance, and operational tools and solutions, fielding technology and software to every rotary wing, fixed wing, and UAS aircraft in the fleet.

In the summer of 2016, PM ANMP completed fielding of the Aircraft Notebook (ACN) software program to the UH-72A Lakota fleet, bringing the User new and increased data and functionality enabling supply, readiness, maintenance management, technical supply, and component repair via ACN. Fielding to the fixed wing and UAS communities will begin in late 2016 and early 2017 respectively.

Later this fall, the next Central-

ized Aviation Flight Records System (CAFRS) software update will begin fielding to link three data systems: CAFRS flight records, ACN maintenance data, and Aviation Data Exploitation Capability (ADEC) flight management data. Establishing an interface between formerly disparate systems expands both pre- and post-mission planning and analysis capabilities while decreasing workload for the aviator commander and staff.

Air Traffic Control (ATC)

The ATC Product Office continues production and modernization efforts to enhance the Army's Air Traffic Services (ATS) capability as well as placing command emphasis on improving overall sustainment of the ATC portfolio. PM ATC began fielding the AN/MSQ-135A Mobile Tower System (MOTS) and the AN/TSQ-198B Tactical Terminal Control System (TTCS) in FY16 and will begin fielding the next increment of the Air Traffic Navigation, Integration, and Coordination System (ATNAVICS) and the Tactical Airspace Integration System (TAIS) in FY17. Next month's PM ATC article provides a more comprehensive look into both tactical and fixed base efforts.

Degraded Visual Environment (DVE)/Brownout Rotorcraft Enhancement Systems (BORES)

The risk imposed by degraded visual conditions is well understood. DVEs are a significant factor in Army Aviation accidents. Over 80% of the Class A/B fatalities from 2002-2015 have been attributed to degraded visual conditions, with the majority of Class A/B DVE-related incidents linked to brownout, or swirling dust and dirt.

In 2014, PM AS joined the multi-agency effort examining possible material solutions to enable incremental and full DVE capabilities. In August 2015, the Program Executive Office Aviation (PEO AVN) stood up the DVE/BORES Product Office under PM AS, charging the DVE/BORES Product Lead with identifying a "first step" solution to mitigate risk in conducting ground approach, limited forward hover, and takeoff in brownout conditions. The ultimate goal is to provide Aviators with technology that allows them to "own the environment" for all 11 DVE environments just as they "own the night" with night vision sensor technology now.

The DVE/BORES team is working with the S&T community, industry, and other government agencies to as-

sess planned and maturing solutions. Under the current plan, a limited, first iteration of CH-47 and UH/HH-60 aircraft will receive a DVE/BORES capability in FY21/22.

Our Commitment

PM AS Product Offices charters are diverse, managing equipment for communication, navigation, and surveillance; mission networking and planning; ground support equipment; air traffic control; and emerging technologies addressing elements of DVE. The programs vary; the workforce dedication does not. Over 500 dedicated military, civilian, and contractor professionals across the five product offices share a commitment to provide solutions that maximize readiness and innovate future capabilities. The user and the mission depend on it. The unending effort of the Aviation System team ensures users have what they need to get the job done every time.

COL Mathew J. Hannah is the Aviation Systems Project Manager, Program Executive Office Aviation and Ms. Christian Summer is the Aviation Systems Strategic Communications Officer; both are located at Redstone Arsenal, AL.



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Aviation Ground Support Equipment (AGSE) Update

By LTC Kirk M. Ringbloom



Aviation Ground Support Equipment (AGSE) is a critical enabler for Army Aviation. The AGSE workforce takes great pride in being known as “The Crewchief’s PM” and delivers on the promise of the “right tools, right time, right place.” Aligned with the Chief of Staff of the Army’s #1 priority, readiness, our ultimate objectives are continuously improving Army Aviation readiness while reducing burden on maintainers. There are three core elements to the AGSE strategy:

- 1 – Sustain and Reset fielded systems to maintain combat power in the current fight.
- 2 – Modernize systems to mitigate obsolescence and reduce life cycle sustainment costs.
- 3 – Insert new capabilities to meet requirements.

In today’s resource constrained environment, we must determine the most affordable mix of these tenets to achieve our objectives.

Sustainment & Reset

Current operations, contingency planning, and Aviation Restructuring Initiative (ARI) activities make it imperative to have the maximum amount of AGSE fully mission capable. Rotational units fall in on a package of theater provided equipment (TPE) with direct support from the in-theater AGSE Liaison and Aviation & Missile Life-Cycle Management Command (AMCOM) Logistics Assistance Representatives (LARs). PM AGSE TPE consists of Standard Aircraft Towing Systems (SATS), Generic Aircraft Nitrogen Generators (GANG), Auxiliary Ground Power Units (AGPU), Aviation Unit Maintenance (AVUM) shop sets, and Aviation Intermediate Maintenance (AVIM) shop sets.

The primary purposes for utilizing TPE vice organic equipment are to unburden units from packing and shipping these critical systems, significantly reduce inter- and intra-theater transportation costs, and reduce loss and damage from multi-modal transportation. By refreshing TPE every three years, the Army saves 66% in time previously spent preparing, packaging, shipping, and receiving select AGSE compared to annual combat rotations with Unit organic equipment. An added benefit is preserving Unit organic equipment and time for home station training. Most importantly, the strategy extends operational use of the equipment across three deployment rotations which enhances operational readiness, reduces Reset cycle times, and saves Reset dollars. In the spring of 2015, PM AGSE refreshed AGPU, SATS, and GANG TPE assets in Afghanistan. This refresh provided ~\$16M in Reset cost savings and over \$22M cost avoidance in transportation over a three-year cycle. This past summer, PM AGSE refreshed all AGPUs and the AVIM shop set complex in Kuwait. AGSE partners with, and coordinates Reset activities through, the Communications-Electronics Research, De-



Aviation Light Utility Mobile Maintenance Cart (ALUMMC) with polymer doors

A CH-47F recovering a damaged MQ-1C Gray Eagle with the Modernized Unit Maintenance Aerial Recovery Kit (M-UMARK)

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on JTDI registration, access, and use is available at <https://www.jtdi.mil>. The PM AGSE Help Ticket allows users to submit an equipment specific question directly to a subject matter expert. An automated email notifies customers of their query progress as it is evaluated by the AGSE team. Responses are sent via email to ensure customers can reference them as needed. Users will find the PM AGSE Help Ticket in the upper right hand corner of the AGSE page at JTDI or may access it directly at <https://agse.peoavn.army.mil>.

Modernization

AGSE has several modernization efforts underway. Below is a snapshot of system improvements and recent accomplishments.

Common Aviation Tool System (CATS):

Consists of seven new individual aviation mechanic Aerospace Standard tool kits with foam shadowed drawers, component listings, and inventory diagrams. There is a five-year warranty on all tools. We recently completed fielding, nearly two years ahead of schedule. The first of three modification work

velopment, and Engineering Center (CERDEC) Flight Activity (CFA) at Joint Base McGuire-Dix-Lakehurst, NJ and Letterkenny Army Depot, PA.

For on-hand organizational equipment, sustainment is provided through a mix of original equipment manufacturer (OEM) warranties and standard provisioning; PM AGSE manages over 50 Line Item Numbers (LINs) with over 33,000 individual components.

The AGSE team utilizes the Joint Technical Data Interchange (JTDI)

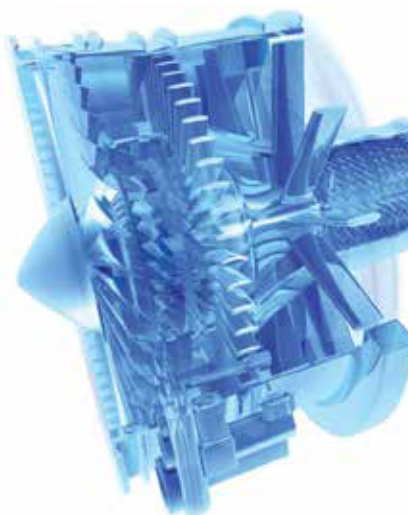
web site for communicating technical information, product updates, addressing issues and concerns, and providing a link to our online help ticket to our customers in the field. The AGSE tab on JTDI also provides quick access to a myriad of information including product descriptions, technical manuals, maintenance messages, and updated component listings. JTDI requires registration; accessing the AGSE portion of JTDI requires a Common Access Card (CAC). More information

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orders (MWO) adds a complement of ratcheting wrenches to a previously unpopulated drawer; fielding began in July 2016. The second MWO will add an armament tool kit in FY17, and the third MWO will add a common Unmanned Aircraft System (UAS) tool kit in FY18 as unmanned platforms begin transition to organic maintenance.

A92 Aviation Unit Maintenance (AVUM) Shop Sets: Modernizes tool loads and replaces each S280 shelter with an International Organization for Standardization (ISO) compliant 20' one-side expandable shelter. Fielding begins in FY19.

Aviation Intermediate Maintenance (AVIM) Shop Set Complex: Provides new or refurbished ISO compliant 20' one-side expandable shelters and upgrade of existing tool loads for 10 separate Class VII Shop Sets, including a modernized Composite Shop Set. Fielding completed in FY15.

Unit Maintenance Aerial Recovery Kit (UMARK): Expands capability to recover damaged aircraft, and not only disabled aircraft. Adds capability to recover MQ-1C Gray Eagle and UH-72A Lakota aircraft. Condition Based Maintenance (CBM) achieved by extending sling certification from 5 to 15 years (verified through accelerated sling life testing). Fielding begins in FY17.

Modernized Maintenance Stand: Will allow improved mobility over unimproved surfaces and be transportable on a 463L pallet. Source selection performance demonstration and product verification testing ongoing. Fielding begins in FY17.

Modernized Flexible Engine Diagnostic System (FEDS): MWO hardware and software upgrade to legacy system providing increased measurement accuracy and system safety; digital controls, Government-owned software, ISO compliant control cab, common control boxes and cabling, advanced camera system, and OSHA/EPA compliant fuel skid. The prototype system became operational at Fort Campbell, KY in December 2014. First MWO for fielded systems begins in FY17.

Non-Destructive Test Equipment: MWO replaces hand held testers with latest commercial technology, includ-

ing eddy current, ultrasonic, and bond test. First MWO for fielded systems begins in FY17.

New Capabilities Self-propelled Crane Aircraft Maintenance and Positioning

(SCAMP) Increment II (expeditionary variant): Multi-system solution provides lifting capability in improved aviation maintenance areas (flight line variant) and contact maintenance / Downed Aircraft Recovery Team (DART) operations in austere locations (expeditionary variant; must be capable of internal transport via CH-47). The Program Executive Officer, Aviation (PEO AVN) approved the Materiel Development Decision (MDD) for a commercially available expeditionary variant in September 2015, and source selection is ongoing. First unit equipped (FUE) is anticipated in early FY19. The requirement for the flight line variant is anticipated to be satisfied through a Service Life Extension Program (SLEP) of the current Loraine LRT-110 7.5 ton crane managed by PEO Combat Support/Combat Service Support (CS&CSS).

Aviation Light Utility Mobile Maintenance Cart (ALUMMC):

Provides a standardized, logistically supportable transportation system for maintenance personnel, tools, parts, and ancillary equipment on airfields and field locations. FUE achieved in September 2015; Full Rate Production (FRP) approved in February 2016. PM AGSE is working to incorporate polymer doors into the baseline production configuration vice standard full glass doors. New polymer doors improve Soldier safety with integrated retractable windows and side mirrors.

PM AGSE remains committed to providing and sustaining the best equipment for Army Aviation maintainers. Our management strategy provides an affordable mix of sustainment, modernization, and new capabilities to enable Army Aviation forces now and in the future.

LTC Kirk M. Ringbloom is the product manager for Aviation Ground Support Equipment in the Aviation Systems Project Management Office, Redstone Arsenal, AL.

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Aviation Mission Equipment (AME) Update

By COL Burr Miller



The Aviation Mission Equipment Product Office provides avionics equipment for communication, navigation, and surveillance (CNS) and situational awareness (SA) to the Army Aviator. This involves developing, fielding, and modernizing common CNS equipment to meet U.S. military, civil, and International Civil Aviation

Organization (ICAO) airspace requirements and mandates while enabling tactically secure combat operations.

The AME portfolio includes the AN/ARC-231, AN/ARC-220, and AN/ARC-201D Single Channel Ground and Airborne Radio System (SINCGARS); AN/ASN-128D and EGI H-764 navigation systems; AN/APX-118 and AN/APX-123 surveillance transponders; Blue Force Tracking-Aviation (BFT-A); and integration of the Airborne Maritime/Fixed Station (AMF) Joint Tactical Radio System (JTRS) on manned and unmanned platforms.

While PM AME manages the avionics mission equipment deployed across the Army Aviation portfolio, the Product Office is also deeply engaged in supporting the development of Assured-Position, Navigation and Timing (A-PNT) technology, a top Department of Defense (DoD) priority.

Communication Systems

AN/ARC-231



ALL PHOTOS: PM AME FILE PHOTOS

As the common multi-mode radio for very high frequency (VHF) and ultra-high frequency (UHF) line-of-sight (LOS) and beyond-line of site (BLOS) tactical satellite communications (SATCOM), all rotary wing platforms, the Gray Eagle unmanned aircraft system (UAS), and select fixed wing platforms rely upon the AN/ARC-231. The ARC-231 Pre-Planned Product Improvement (P3I) Multi-mode Airborne Radio Suite (MARS) is intended to meet National Security Agency (NSA) Cryptographic Modernization requirements and mitigate obsolescence by enhancing existing architecture with software-defined open architecture that will host future wave forms such as the SATCOM Mobile User Objective System (MUOS). Over the course of Fiscal Year 2016 (FY16), PM AME acquired ~20 MARS Production Integration Models. Unit Set Fielding is scheduled to begin in FY20.

AN/ARC-220



By providing a BLOS communications capability for secure voice and data, the AN/ARC-220 High Frequency (HF) radio is the only Aviation alternative for BLOS operations in a SATCOM denied environment. ARC-220 software updates provide enhanced capabilities for automatic position reporting and improved frequency selection algorithms. Hardware upgrade development addressing obsolescence is underway, with the first receiver-transmitter circuit cards upgrade nearing completion. Airworthiness qualification is planned for FY17. The HF Network Pilot Program initiated in FY15 now includes several Army National Guard Aviation Units in cooperation with the Department of Homeland Security. The pilot program has demonstrated significant improvements in ease of use and HF communication reliability. An AN/ARC-220 and AN/VRC-100 HF radios course is offered quarterly at Redstone Arsenal, AL. Contact the AME Product Office for further information.

Small Airborne Networking Radio (SANR)

Coordination continues with the AMF Product Office, Program Executive Office Command, Control and Communications – Tactical (C3T), on integration of networking radios across the Army Aviation fleet. Goals include identifying a SANR capable of delivering Wideband Networking Waveform (WNW), Soldier Radio Waveform (SRW), and SINCGARS.

Planning is underway to integrate a two-channel SANR with common ancillaries supporting platform integration and Joint Service interoperability efforts in development by the AMF Radio Systems Product Manager. The AMF-managed SANR will field to AH-64E, UH-60M, CH-47F, Gray Eagle, and Special Operations aircraft.

The UH-60, CH-47F, Gray Eagle and Special Ops aircraft will also be integrated with WNW, SRW, and SINGARS. The Shadow UAS will receive an AN/PRC-152A radio as an interim wideband networking solution in advance of the Small Form Factor-B radio set.

Navigation Systems

The Army is a significant User of Global Positioning System (GPS) technology, employing non-bussed and bussed common solutions across the rotary wing fleets. As the

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Lifecycle Manager for avionics equipment providing PNT capabilities to the Army Aviator, PM AME fully supports Army efforts to evaluate and develop the next generation of Assured-PNT technologies and systems.

AN/ASN-128D Doppler GPS Navigation Set (DGNS)



DGNS provides the Army Aviator with both GPS and Doppler navigation capability. As an Instrument Flight Rules (IFR)-compliant system, the AN/ASN-128D is certified for GPS use as a supplementary means of navigation for enroute, terminal, and non-precision approaches using the Digital Aeronautical Flight Information File non-corruptible database.

PM AME is upgrading the DGNS to obtain authorization for use of GPS as a primary means of navigation and new Area Navigation (RNAV) capabilities such as Standard Instruments Departures (SIDs) and Standard Terminal Arrival Routes (STARs), in addition to enabling Automated Dependent Surveillance Broadcast (ADS-B) Out surveillance capability with the APX-123 transponder. This will include a new control unit with fast keys and a ruggedized, touch screen display capable of presenting navigational maps and digital approach plates.

Embedded GPS Inertial Navigation System (EGI)

EGI provides combined GPS and inertial navigation capability for MIL-STD 1553 digital data bus equipped aircraft. EGI is an Air Force-led, tri-service program, providing precise location, velocity, and attitude to the aircraft fire control computer or integrated system processor for processing targeting information.

As with the DGNS, the IFR-compliant EGI is certified for use of GPS supplement navigation for enroute, terminal, and non-precision approaches. PM AME is also working to upgrade the EGI to obtain authorization for use of GPS as a primary means of navigation, to include EAGLE – the Enhanced Aviation Global Air Traffic Management (GATM) Localizer Performance with Vertical guidance (LPV) EGI.

Surveillance

AN/APX-123/123A Transponder

The Army's Common Transponder (CXP) family includes the legacy AN/APX-118 and the modernized AN/APX-123/123A variants.

The rotary wing fleet is currently receiving the APX-123 and APX-123A transponders, which add the Mode 5 Identification Friend or Foe (IFF) capability and meet the Joint Mode 5 IFF Full Operational Capability (FOC) requirement. The AN/APX-123A addresses AN/APX-123 signal processor obsolescence and Mode 4/5 crypto assembly.



In 2016, CXP software v7.00 received a Radio Frequency Assignment (RFA) from the National Telecommunications and Information Administration (NTIA). This software adds ADS-B Out, which meets the Federal Aviation Administration (FAA) 2020 mandate. While the APX-123/123A are ADS-B capable, v7.00 requires an Operational Flight Profile (OFP) update, which PM AME has funded for the Army tactical rotary wing fleet. Once updated OFPs are fielded, ADS-B Out will provide Air Traffic Services (ATS) with automatic cooperative reports on position, altitude, heading, and velocity data.

PM AME is finalizing development and qualification for CXP software v7.02, which addresses late arriving technical requirements for Mode 5, eliminating the need for further near-term OFP updates for full CXP ADS-B and Mode 5 capabilities. Version 7.02 will be backwards compatible with platform OFPs, ADS-B, and Mode 5 IFF capabilities already installed.

Blue Force Tracking (BFT)



An October 2002 urgent Operational Need Statement (ONS) for an NLOS tracking capability for Army aircraft lead to the BFT system commonly used today. The initial BFT technology (BFT-A/BFT-1) has evolved into a mission command system installed on nearly every rotary wing platform in the Army portfolio. The Marine Corps, Navy, and several foreign allies rely upon BFT for location information on friendly and hostile forces.

PM AME is now fielding BFT-2, a more robust system that integrates a new satellite air transceiver and KGV-72 type 1 encryption. BFT-2 is more capable, faster, and efficient. As a high-capacity, full duplex network upgrade, it allows platforms to simultaneously send and receive SA and command and control (C2) messages without interruption. The BFT-2 network utilizes reflection to greatly reduce latency from minutes to seconds. Encryption allows classified message transfer. BFT-2 also allows for a common air transceiver across all platforms.

BFT 2 is fielding to the UH-60L fleet via modification Work Order (MWO) and AH-64E production line aircraft. UH/HH-60M Non-Recurring Engineering (NRE) is nearing completion; fielding is planned for mid-FY17.

PM AME managed products are critical enablers to the success of Army aviation missions ensuring effectiveness, safety, and survivability in commercial and DoD airspace and on the modern battlefield. The dedicated personnel in the AME Product Office continue to look to the future of technology and interoperability to bring our Soldiers the best systems possible.

COL Burr Miller is the product manager of the Aviation Mission Equipment Product Office, Project Management Office, Aviation Systems, Program Executive Office, Aviation at Redstone Arsenal, AL.

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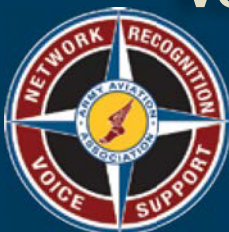
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Aviation Networks and Mission Planning (ANMP) Product Office Update

By Mr. Timothy J. Vinson and Mr. James M. Pruitt



The Aviation Networks and Mission Planning Product Office provides

Army Aviation with state-of-the-art interoperability, mission planning, maintenance, and operations tools that enhance crew members' situational awareness (SA), command and control (C2), and safety. PD ANMP supports and interfaces with all Army Aviation platforms: rotary wing, fixed wing, and Unmanned Aircraft Systems (UAS), fielding products essential for the successful planning and execution of the Army Aviation mission.

As we develop, update, and field network and mission planning capabilities, we also streamline unit processes to increase operational effectiveness by automating legacy manual procedures and establishing necessary interfaces within the ANMP Family of Systems.

Significant 2016 accomplishments include initiating fielding of the next generation Improved Data Modem (IDM) and completing fielding of the Aircraft Notebook (ACN) to the Lakota fleet, conducting key test events for ACN and the Aviation Data Exploitation

Capability (ADEC) system, upgrading Aviation Mission Planning System (AMPS) software and Centralized Aviation Flight Records System (CAFRS), and executing Network Integration Evaluation (NIE) and Army Warfighting Assessment (AWA) events.

Improved Data Modem (IDM)

As Army Aviation's common modem solution, the IDM establishes platform connectivity, supporting communication and data transmission through high frequency, very high frequency (VHF), and ultra-high frequency (UHF) radios and Blue Force Tracker (BFT) satellite transponders. The future IDM will support radios supporting Soldier Radio Waveform (SRW) and Wideband Network Waveform (WNW).

Across the fleet, IDM enables network access and serves as the gateway between aviation and ground platforms. IDM processes Variable Message Format (VMF) messages from the Joint Battle Command-Platform (JBC-P) system and peer-to-peer messages via the Private Network and Air Force Ap-

Above left: Networks and Mission Command Integration (NMI) initiatives strengthen air and ground system interoperability in air-ground operations throughout the mission command spectrum

lications Program Development (AF-APD) protocols to facilitate sharing of SA, sensor, and C2 data with digitized Army, Joint, and coalition partners.

In FY16, the IDM team executed software updates for Common Operating Environment (COE) interoperability. PD ANMP began fielding of the IDM-401 to platform production lines, providing Army Aviation with increased switch and port capability to enable current and future computing environment growth.

Aviation Mission Planning System (AMPS)

AMPS is a lightweight, portable, rugged workstation automating aviation mission planning tasks including risk assessment, tactical C2, aircraft configuration, flight planning, communications planning, and rehearsal. As an

interoperable system with Army Mission Command Systems (AMCS) and associated networks, AMPS provides Aviation commanders with continual SA, enabling rapid adjustment and dissemination of new and updated mission plans. AMPS loads aircraft with tactical, navigation, environmental, performance, and threat data, via Army Portable Flight Planning Software (PFPS).

The AMPS 7.6 PFPS Execution Planner (X-Plan) update, a collaborative effort between PEO AVN and U.S. Special Operations Command (USSOC), is scheduled for a fall 2016 fielding. AMPS 7.6 improves architecture, scalability, and interface for mission planning, allowing the user greater customization, an undo and redo capability, and scalability for future growth. XPlan expands vehicle types to include ground and maritime platforms to support full mission planning.

Other AMPS user enhancements under consideration include improving 3D planning capability in Falcon View, minimizing Solid Core Cyber Security impacts by investigating the use of Host Based Security System (HBSS) and providing Tactical Graphics Editor Tool (TGET).

Centralized Aviation Flight Records System (CAFRS)

As an AMPS sub-system, CAFRS manages personnel flight and training records and provides decision support in mission planning, risk assessment, and risk mitigation. CAFRS supports the Aviation Risk Assessment Worksheet (RAW) assessment tools that match personnel qualifications, operations tempo, aircraft type, and mission needs. By tracking aircrew flight hours, aircraft currency, qualification and training history, CAFRS supports effective risk assessment and mitigation throughout the aviation mission planning process.

CAFRS software v4.0.1 implements the Individual Aircrew Training Folder (IATF) management capability and automates management of the Aircrew Training Programs (ATPs). CAFRS v4.0.2, scheduled to field this fall, links personnel flight and training data with ACN and ADEC data to enhance pre-mission planning and post-mission analysis. CAFRS v4.0.2 fielding begins with the UH-72 fleet and at Ft. Rucker, AL. A Senior Leader reporting capability will be released to the US Army

Aviation Center of Excellence (US-AACE), Ft. Rucker, later this fall.

Aviation Data Exploitation Capability (ADEC)

ADEC provides customizable data exploitation software to improve SA of current flight operations, training effectiveness evaluation, aircrew readiness, safety and risk management, and aircraft status. ADEC enables Military Flight Operations Quality Assurance (MFOQA) process implementation and supports aviation flight management. Additional capabilities include automated flight scheduling and mission briefing processes, an integrated risk assessment worksheet, consolidation of Unit flight schedules, enhanced flight activity tracking, and automated notifications of overdue aircraft and other key events.

ADEC also enhances post-mission training with flight visualization capabilities and supporting analysis, event detection, and constructive aircrew debrief and After Action Reviews (AARs). The automated ADEC Abbreviated Aviation Accident Report (AAAR) facilitates report processing from Unit to higher headquarters. CAFRS database links with ADEC to augment crewmember analysis.

PD ANMP completed the ADEC Customer Test in April 2016 and anticipates a fall Milestone B (MS B). Army-wide ADEC software v1.0 fielding will commence in FY17 to provide mission management and risk assessment functionality. ADEC v1.0 also provides the UH-60M fleet with flight visualization. Subsequent releases will provide flight visualization to the remaining fleet. Software v2.0 includes data quarantine for safety and accident investigation and ACN interface. Under the current schedule, v2.0 development and Customer Test will complete in FY17 with fielding in mid-to-late 2018.

Aircraft Notebook (ACN)

ACN delivers aircraft digital logbook functionality via Platform Maintenance Application software hosted on the Maintenance Support Device laptop computer. Integration with Maintenance Consolidated Database System (MCDS), Interactive Electronic Technical Manuals (IETMS), and platform Condition Based Maintenance Plus (CBM+) tools streamlines completing aviation maintenance activities and documentation required for Army air-

craft airworthiness. ACN also supports operations in both connected and disconnected environments.

In 2016, the ACN team completed Formal Qualification Test (FQT) and Software Usability Test (SUT) for v1.1, which provides supply and readiness reporting interfaces, and maintenance management functions for production and quality control, technical supply, and component repair. PD ANMP completed development of rotary wing, fixed wing, and UAS functionality. Fielding to the UH-72A fleet was completed in 3QFY16. Fielding to the fixed wing community's C-27J and the C-26E aircraft will commence in 4QFY16, with fielding to UAS in 2QFY17. The Global Combat Support System-Army (GCSS-Army) plans to leverage ACN as their at-platform capability and begin fielding ACN for ULLS-A(E) replacement to the rotary wing fleet in late FY19.

Networks and Mission Command Integration (NMCI)

NMCI initiatives strengthen air and ground system interoperability in air-ground operations throughout the mission command spectrum. NMCI focuses on integrating existing and emerging mission systems with manned and unmanned aircraft over multiple networks to facilitate seamless and timely transport of mission critical information between ground and aviation forces.

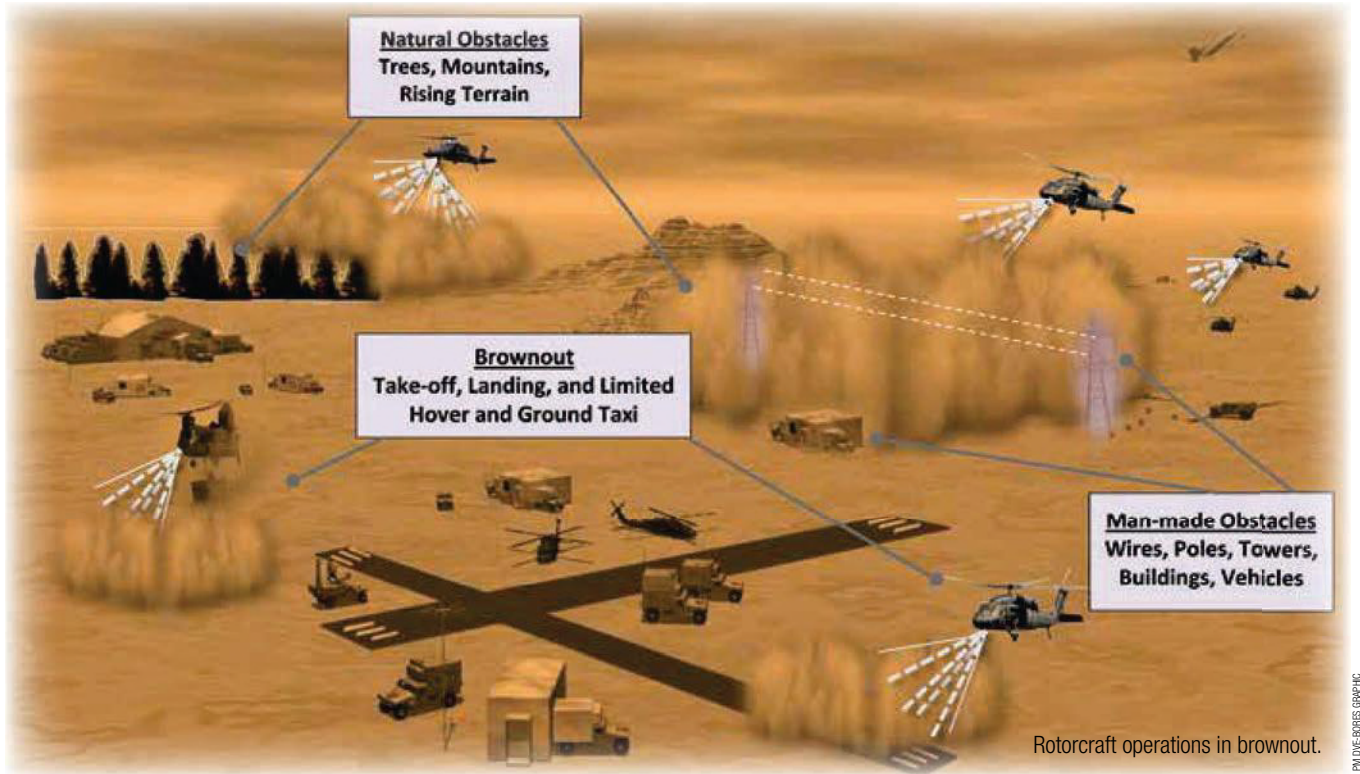
A major NMCI activity is facilitating Army Aviation's participation in key Army and Joint network centric events: NIEs, AWAs, Joint Bold Quests (BQs), and Army Expeditionary Warfighting Experiments (AEWEs). These venues afford early demonstration and validation of integration efforts with aircraft mission systems, communications technologies, and waveforms in an operational environment.

An Aerial Mid-Tier Operational Demonstration will occur in the Fall 2016 AWA 17.1 at Ft. Bliss, TX. 2017 events include the February AEWE 17, March BQ 17.1, and September C4ISR E17.

Mr. Timothy J. Vinson is the product manager and Mr. James M. Pruitt the deputy product manager, Aviation Networks and Mission Planning; Project Office, Aviation Systems, Program Executive Office, Aviation located at Redstone Arsenal, AL.

The Degraded Visual Environment (DVE) Brownout Rotorcraft Enhancement Systems (BORES) Product Office

By LTC David Weese



Degraded visual environment technology will provide Army Aviation the ability to maintain tactical advantage over adversaries by enabling rotary wing platforms to operate in all environmental conditions, even those compromised by natural or manmade obscurants.

The Army is following a proven military acquisition model by capitalizing on new and maturing technologies. This approach mirrors the Night Vision Goggles (NVGs) model, which produced equipment that has provided the military with a significant advantage for decades.

The required capability is identifying and displaying flight hazards, natural or manmade, so that crews can facilitate safe handling and maintaining precise location through all modes of flight in all DVEs. Obscurants such as dust, smoke, fog, rain, and snow, limit the operational envelope. With DVE technology, rotary wing aviation will no longer be inhibited by environmental factors. Just as NVG technology enabled U.S. Soldiers to “Own the Night,” DVE technology will enable U.S. Aviators to “Own the Environment.”

DVE Impacts on Army Aviation

Rotary wing operations in DVE conditions pose significant risk to pilots and crew, due to the likelihood of accidents caused by partial or total visibility loss. Existing and chang-

ing weather are not the only challenges. Calm conditions can quickly degrade during landing or maneuvering. DVE poses more than an operational risk; it is an everyday safety issue that must be mitigated in order to save lives. DVEs are a primary contributing factor in Army Aviation accidents, accounting for approximately a quarter of the Class A/B flight accidents and over 80% of the fatalities from 2002-2015. The materiel cost alone is estimated in excess of \$1 billion. The human cost is incalculable.

The Army has defined 11 types of naturally occurring and manufactured DVEs: brownout, sand, smoke, smog, clouds, fog, rain, snow, whiteout, night, and flat light. Initial development will focus on enabling safer flight in brownout, the dust and dirt clouds responsible for nearly 60% of all DVE-related accidents and losses to date.

The Development Path

In 2007, the Army began exploring concepts to mitigate DVE-related accidents and losses; today’s DVE efforts all stem from a functional area analysis (FAA) completed by the U.S. Army Aviation Center of Excellence (USAACE) in September 2007. The Army formed a BORES Analysis of Alternatives (AoA) team in late 2014, which concluded that a single sensor system could not meet the operational DVE capability

requirement. Shortly after the April 2015 AoA approval, the Army Acquisition Executive (AAE) directed the Program Executive Office Aviation (PEO AVN) to explore a multi-sensor solution. In response to the AAE guidance, PEO AVN established the DVE/BORES Product Office under the Aviation Systems (AS) Project Office in August 2015.

The DVE/BORES Product Office is charged with identifying and providing a forward-looking capability that will mitigate risk in brownout for rotary wing aircraft conducting intentional ground approach, limited hover and ground taxi, and take off. The BORES capability will field to a limited number of aircraft as a first step in developing a full DVE solution.

The team immediately began working with industry, the science and technology (S&T) community, academia, and sister service agencies to assess current Government and industry development efforts and technology readiness levels (TRLs), and the ability to integrate existing and planned technology onto Army rotary wing platforms. Data was further expanded by an industry-wide request for information (RFI) issued by the Army Contracting Command (ACC) in November 2015.

The Product Office is currently exploring technology incorporating a fused image of long wavelength infrared (LWIR) with a Christiansen Feature, millimeter wave (MMW) radar, and laser imaging detection and ranging (LiDAR). Options include fusing sensor data with geospatial data in a synthetic vision solution overlaid with symbology to provide a capability to mitigate brownout conditions.

Looking Ahead

Under the current schedule, the Army will field this capability beginning in Fiscal Year 2021 (FY21) and complete an Initial Operational Capability (IOC) by early FY24. The first aircraft planned to receive a brownout solution is the CH-47F, followed by the UH-60M and the HH-60M.

Heading in to FY17, the DVE/BORES Product Office will continue to:

- Design and develop the system and sub-systems for Milestone B (MS B)
- Conduct hardware and software Developmental Testing (DT)
- Develop and test Design Assurance Level (DAL) software
- Continue aircraft integration
- Perform system modeling and simulation activities
- Complete the Preliminary and Critical Design Reviews (PDR/CDR)
- Continue the development of integration Maintenance-Work Order (MWO) procedures for hardware integration and initiate software modifications to the H-60M Blackhawk Aviation Trainer (BAT) and the CH-47F Transportable Flight Proficiency Simulator (TFPS)

The DVE/BORES solution is the first planned iteration of a full DVE capability. Owning the environment depends upon a capability enabling aviators to intentionally operate and perform every maneuver, to include combat maneuvers, in a DVE as if they were in Visual Meteorological Conditions (VMC).

Coordination continues with agencies synchronizing S&T efforts of experimentation and demonstration to develop a fully integrated DVE system compatible with existing and future helicopter systems that enable full-spectrum rotary wing operations in all terrain, weather, and battlefield environments.

LTC David Weese is the product lead for DVE/BORES in the Aviation Systems Project Office, Program Executive Office, Aviation located at Redstone Arsenal, AL.



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SUBJECT: Night Touchdown

OVER my continuing 26 year career as a Master Army Aviator, I have been privileged to participate in many significant events as Army Aviation matured to its present professional competence.

Of all of the events I can recollect, none is so less worthy than the requirement to perform touchdown night autorotations on a semi-annual basis for proficiency purposes.

It is my contention that night touchdown autos are very real emergencies, whether self-initiated or not. Not only is the crew placed in a hazardous situation but impact loads on the aircraft are substantially increased over day proficiency touchdown autorotation.

To elaborate, it's my feeling that night autos normally result in moderate flares at higher altitudes, and higher initial pitch pull, resulting in higher touchdown rates of descent, lower touchdown rotor RPM's, higher touchdown forward ground speeds, and longer ground runs with low rotor RPM. Spike knock and main rotor/tailboom contact are potential results.

These observations are based on my own personal experience and numerous conversations with other pilots and instructor pilots, and common tendencies no matter who does the autorotation or from which seat.

The reason for all of that is not avia-

ABOUT THE AUTHOR
A CHARTER MEMBER OF AAAAA, CWO RICHARD A. SPARKS CURRENTLY SERVES WITH THE CALIFORNIA ARMY NATIONAL GUARD.

tion incompetence or a lack of proficiency but physiological conditions that are often beyond the aviator's control.

It so happens that almost exactly 20 years ago, I was the pilot of an OH-23 that was involved in an actual night emergency landing due to engine failure. This came about because the "O"-ring in the main fuel sump failed and all fuel on board was lost in just a few seconds. It was a dark night; we were under an overcast; and were airborne over a residential neighborhood in North Philadelphia — The airfield was located about five miles away.

I had no choice but to autorotate to a lighted street intersection as the only field in the area contained numerous high power lines. I set up for a full flare autorotation with maximum pitch pull at termination; full flare because I believed I would strike wires and reasoned that attitude would be the best to punch through them and to minimize ground run. Fortunately, I pulled off the autorotation successfully.

How did I know when to initiate the flare? Because, and I can remember this distinctly, I sensed—peripherally—the height of the trees and the house roofs as I approached. The landing light was on but, frankly, was worthless. As it turned out, the aircraft went over a set of wires; the rotor system was 2½ feet right of a second set of wires; and the aircraft went under a third set of wires. My ground run was a measured 4½ feet. There was no damage to the air-

by CWO Richard A. Sparks

Autos — Why Do Them?

craft, or to property, or injury to any occupants.

The point I'm trying to make is that determination of the height above the ground was clued to me by my peripheral comprehension of my environment, and such clues are not available when performs night autos in an airfield environment because of the obvious lack of objects near the runway.

I've discussed these thoughts with a civilian ophthalmologist/surgeon acquaint-

autorotate straight ahead after engine failure is slim.

Some turns will probably be required due to the location of suitable areas and the direction of the wind at the time. So why not practice autorotations with turns while monitoring airspeed, rotor speed, and altitude — that is the real world!

Night autorotations, with or without turns, should be practiced, either to a power-recovery hover or to a go-around

“ . . . It so happens . . . I was the pilot of an OH-23 that was involved in an actual night emergency landing due to engine failure . . It was a dark night . . under an overcast; and we were airborne over a residential neighborhood in North Philadelphia.”

tance and he confirms my belief that relying on a landing light for single point reference effectively eliminates, or at least substantially reduces depth perception and that is the physiological problem.

Two landing lights illuminating the same flat surface do not effectively improve height perception, again due to lack of peripheral clues.

In my opinion, the requirement to perform day touchdown autos is valid, but to limit these to straight-in autorotations is not valid as the probability of one's being in exactly the right place to

to demonstrate the tendency to flare high and to insure correct control technique under night conditions.

In summarizing, I feel that night touchdown autos demand more than an aviator is physiologically prepared to provide. The probability for material damage, after numerous “successful” night autos, is not worth the training value received, and I can say this without even considering the always present potential for injury to the crew.

Night touchdown autos are real emergencies. Let's not do them. lllll

ARMY AVIATION / NIGHT AUTOROTATIONS

63



AAAA Scholarship Foundation

Supporting AAAA Families With Generous Donations!

By LTC (Ret.) Stanford Oliver

At the March 2015 Army Aviation Association of America Scholarship Foundation, Inc. (AAAASFI) Board of Governors meeting during the 2015 AAAA Summit, I was selected as the Fundraising Committee Chairman. Considering the success of my predecessors, I felt honored and humbled, but was unsure if I could meet the high standards set by each of them.

Together they kept us flying high, raising over 6 million dollars since 1963. Using a theme from Dr. King, "I had a dilemma and a challenge."

The dilemma my committee and I faced was that we were expected to meet or exceed those high standards of success on day one. Fortunately, I had a motivated and caring team of volunteers to assist me with fundraising efforts. The AAAA National Office provided invaluable support and brought historical knowledge to our efforts. Subcommittee chairmen included: Chapters, Steve Bolton; Individuals, Terry Reininger; Planned Giving, Jim Hesson; and Heritage, Joe DiMaggio. Numerous other volunteers were also responsible for supporting our efforts in raising the funds required to provide deserving individuals scholarships.

As I worked with the committee and engaged our wonderful donor community, both individual and corporate, my concerns about meeting the high standards previously set dissipated. I discovered we had an excited and outstanding community of donors who truly cares for the future of our AAAA families. Almost every engagement resulted in some form of commitment to assist our efforts. Our donors' generosity resulted in a steady stream of contributions. I



AAAA Scholarship Foundation President COL (Ret.) Mike Freeman (3rd from left) and Foundation Fundraising Chairman LTC (Ret.) Stan Oliver (far right) pose with some of the donors at the Scholarship and Museum Donation Luncheon during the AAAA Army Aviation Mission Solutions Summit in Atlanta, GA, Apr. 29, 2016.

would like to thank all of you for giving to such a worthy cause.

The Scholarship Luncheon at the 2016 Army Aviation Mission Solution Summit provided us the opportunity to publicly thank some of our many supporters. More than 25 donors consisting of individuals, corporations, and chapters participated in the Scholarship Luncheon where we recognized anyone making a donation of \$1,000.00 or more. Their generous contributions totaled an all-time high of over \$88,000.

The Challenge

Now let me present our challenge. I would like to mobilize our entire AAAA member community and significantly expand our donor community to exceed 2015 donations by 25%. As a direct result of the 2015/2016 donations, the board was able to award \$476,000 to 286 applicants. Together, we can exceed these outstanding numbers and increase the number of scholarship recipients.

There are many ways to contribute. You can make an online donation

through the AAAA homepage at www.quad-a.org. We also accept checks payable to AAAASFI. Please mail your check to: AAAA, 593 Main Street, Monroe, CT 06468. For further information or questions contact Sue Stokes or Deb Cavallaro at scholarship@quad-a.org or call (203) 268-2450, extensions 121 or 127. Contributions can go directly to the Foundation general fund; be made in memory of a deceased AAAA member or friend; a deceased family member; to the special Families of the Fallen Scholarship, or via your last will and testament.

Thank you for your generous donations and support helping deserving individuals pursue their dreams. Let's meet our challenge and increase those contributions. The Fundraising Committee looks forward to seeing you on stage at the Scholarship Luncheon in Nashville.

LTC (Ret.) Stanford Oliver
Fund Raising Committee Chair,
AAAASFI

Send scholarship fund-raising ideas and success stories to: aaaa@quad-a.org.

We are reaching new heights.....



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Donate today!

100% of your tax deductible donation will be applied to the AAAA Scholarship Program.

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\$1,500

1985
12 Awards
\$10,000

2007
171 Awards
\$268,500

2016
286 Awards
\$476,000



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AAAA Chapter Affairs By LTC (Ret.) Jan Drabczuk

The Flying Tigers Chapter

By LTC (Ret.) Jan S. Drabczuk

I greatly appreciate the support from LTC Roger F. Deon, the Flying Tigers chapter president for authoring this article and to CW5 Mark A. Sutton, charter member of the Flying Tiger sChapter and past president, for providing and sharing this chapter information.



CHAPTER GRAPHIC

The Flying Tigers Chapter is fortunate to enjoy two consecutive years of double digit growth having recently achieved Senior Chapter status with anticipated Master Chapter status coming soon.

Serving the Fort Knox, Kentucky area, the chapter represents personnel from the 11th Aviation Command and all subordinate U.S. Army Reserve battalion/company sized elements, Human Resources Command, U.S. Army Recruiting Command, U.S. Army Cadet Command, Ft. Knox Garrison and a host of local retirees and contractors.

Strong Leadership With All Time High Membership

Since its inception in 1991 the Flying Tiger Chapter has come under the leadership of a number of aviation leaders, most of whom had a direct affiliation with 8th Battalion, 229th Aviation Regiment which has operated and deployed from Ft. Knox since unit activation in 1989. The 8-229th Attack Reconnaissance Battalion (ARB) has recently converted to an assault helicopter battalion (AHB), and remains at Ft. Knox.

In 2015, the chapter leadership expanded significantly to include members of HRC, the USAR Aviation Command, and 8-229th Assault Helicopter Battalion. As a result, the new chapter officers have shown a marked improvement in fundraising, an increase in membership, heightened capacity to provide chapter awards, a constant presence at local unit functions, and a renewal of the scholarship program. Their efforts were recognized by AAAA National with the chapter's selection as the 2015 Senior Chapter of the Year.

Strength Starts Here

One of the major tenets of the Flying Tigers Chapter is to provide an avenue for information and current updates on Army Aviation to all Soldiers and their families in the Ft. Knox area. This includes a USAR aviation population of more than 1,200 personnel along with all Active Duty, Retired, and Army National Guard personnel with an interest in the Army Aviation. Full integration of every member is the Chapter's major objective for 2017. As such, the Chapter has elected to change its name to the Gold Standard Chapter.

Phase II

The newly reorganized Chapter is blessed with some very notable and talented members, who will continue to strive to expand the AAAA involvement and membership. The chapter goal is to enable the chapter for life concept whereby a Soldier or aviator who associates with the Ft. Knox community is always welcome to join. Furthermore, the chapter wants the Gold Standard Chapter to be home for everyone who simply wants to maintain AAAA membership with a single chapter, remain informed about Army Aviation happenings, and return whenever possible to our monthly meetings for a home-coming and reunion amongst friends – both old and new.

The Gold Standard Chapter will continue the progress achieved over the past few years with key elements such as the processing of dozens of Orders

of St. Michael, Knights of the Order of St. Michael, and Our Lady of Loreto Inductions. The Chapter will also strive to enable strong Soldier turnouts at the AAAA Summit.

Summary

The Flying Tiger icon is known throughout the aviation community and continues to represent the 229th Aviation Regiment with pride. As such, 8-229th will continue the proud legacy of the "American Volunteer Group" in both history and lineage. But the AAAA Chapter at Ft. Knox now represents a larger entity than just 8-229th. Effective January 1st, 2017, the Ft. Knox AAAA Chapter will be officially known as the Gold Standard Chapter with the goal of proudly representing everyone who hails from the Ft. Knox area and for those who simply desire to gain and maintain a single chapter membership for continuity and ease of membership maintenance.

The Gold Standard Chapter welcomes all current and new members who have the desire to join. For more information contact LTC Roger F. Deon, roger.f.deon.mil@mail.mil, LTC Mark Smith, mark.a.smith.mil@mail.mil, MAJ Mary Beth Scott, mary.e.scott158.mil@mail.mil, or CW5 Wade Hayes, herbert.w.hayes6.mil@mail.mil.

Feel free to contact me if you need help for your chapter, Executive Board support, or to obtain clarification of National procedures. I look forward to working with you and supporting AAAA.

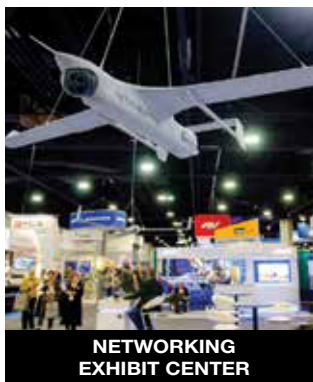
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AAAA VP for Chapter Affairs
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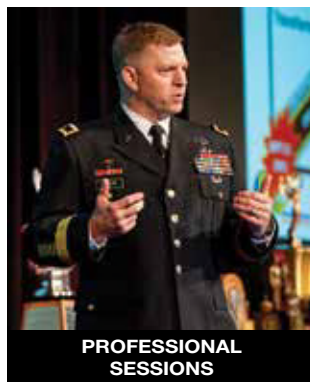
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AAAA Chapter News

Air Assault Chapter Recognizes Arzente



CHAPTER COURTESY PHOTO

Tennessee State **BG George Arzente**, Deputy Commanding General (West) of the State Guard was recognized for his long-standing support of Army Aviation during his Aug. 6 retirement ceremony by chapter president, COL (Ret.) Hawk Ruth (left), and chapter treasurer, CW5 (Ret.) Bob Huffman. A Master Army Aviator while on active duty, once he retired, he joined the Tennessee State Guard, a component of the State Militia that falls under the governor's control.

Connecticut Chapter Scholarship Winners Recognized



CHAPTER COURTESY PHOTO

Chapter scholarship winners and their families celebrate their awards with chapter president, Doug Shidler and AAAA Executive Director, Bill Harris (right and 2nd right, respectively), during the awards ceremony following the chapter annual golf tournament on Aug. 11, 2016 at the Whitney Farms Golf Course in Monroe, CT.



CHAPTER COURTESY PHOTO

Konitzer Visits Mount Rainier Chapter

Mount Rainier Chapter President and 66th Theater Avn. Cmd. Commander BG Bruce C.R. Linton recognizes former AAAA President **BG (Ret.) Thomas J. Konitzer** following his address to AAAA members at a local chapter meeting at Joint Base Lewis-McChord, Washington on June 16, 2016. Konitzer spoke with members about AAAA history and scholarship opportunities.



North Country Chapter Golf



The **North Country Chapter** held a Scholarship Golf Tournament on July 29, 2016 at the Watertown Golf Club, Watertown, NY. Pictured are (l to r): **SSG Michael McArthur**, event coordinator; **CSM Zack Hurst**, chapter VP of Programming; AAAA National Executive Board ARNG and USAR Committee Chairman, **COL (Ret.) Mark Weiss**; **SFC Christopher Cashell**, chapter VP of Events; and chapter VP, **CW5 Kyle Hill**.

SoCal Chapter Supports 1106th Deployment



The Southern California Chapter participated in supporting and recognizing fellow Army Aviators and Soldiers from Northern California in early July as they prepared for mobilization. CSM Ronald Cabrera (left), CAARNG, Southern California Chapter VP Awards, recognizes **CSM Mark Kellam** (center) and **COL Lou Carmona** of the 1106th Theater Aviation Sustainment Maintenance Group (TASMG), CAARNG, at their deployment departure ceremony before leaving for Southwest Asia. This is the fourth deployment for the 1106th.

CHAPTER PHOTO BY SFC JEREMY HAWKINS, 1106TH TASMG

New AAAA Chapter Officers

Aviation Center Chapter
Treasurer, Allen R. Godfrey

Black Knights Chapter
Senior VP, LTC Rich Melnyk
Secretary, CPT Lucasz Derda
VP Membership, LTC Erik Kober
VP Events, CW4 Mike Rutledge

Corpus Christi Chapter
President, COL Allan H. Lanceta

Cowboy Chapter
President, MAJ Toby Alkire
Senior VP, CW4 Derek Fisbeck
Treasurer, MSG Jim Williams

Flying Tigers Chapter
Treasurer, Timothy Williams

High Desert Chapter
President, LTC Eric A. Vanek

Phantom Corps Chapter
President, COL R. Allan Evans, Ret.
Senior Vice President, CSM Doug Greene, Ret.
VP Membership, CSM Randy Wise
VP Scholarship, LTC Damon Pfaltzgraff

Pikes Peak Chapter
President, COL Lori L. Robinson

Ragin' Cajun Chapter
President, Edward Williams
Secretary, 1LT Joseph Kramer

Rio Grande Chapter
VP Programs, LTC John C. Crotzer
VP Scholarship, LTC Richard Zygadlo

Winged Warriors Chapter
Treasurer, CPT Paul Peterson

UPCOMING EVENTS

NOVEMBER 2016

- 14-15 Nov **Aircraft Survivability Equipment Symposium**, Huntsville, AL
- 16-17 Nov **Joseph P. Cribbins Aviation Product Symposium**, Huntsville, AL
- 29 Nov-1 Dec **Association of Old Crows Annual Intl Symposium & Convention**, Washington, DC

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AAAA NEWS - Order of St. Michael and Our Lady of Loreto Inductions

Connecticut Chapter



CHAPTER COURTESY PHOTO

Navy Cdr. Carlos Iglesias, deputy commander of the Defense Contract Management Agency (DCMA)-Sikorsky, is inducted as a Knight of the Honorable Order of St. Michael by chapter senior VP, Mr. Charles Brady, and DCMA-Sikorsky commander, COL Gregg Monk, USMC, at the facility in Stratford, CT on July 7, 2016. Iglesias was recognized for his outstanding support of Army Aviation.

Mid-Atlantic Chapter



CHAPTER PHOTO BY MIKE ROBERTS

MAJ (Ret.) Jay Mabrey (center) was inducted into the Bronze Honorable Order of St. Michael by chapter president, COL (Ret.) John Gallagher (left) during a regular Final Fridays Professional Social May 27 at Ruggles Golf Course, Aberdeen Proving Ground, MD. The former Marine who was assigned to the Presidential HMX-1 Squadron, and also Army CW3 and Master Army Aviator was recognized on the occasion of his retirement after 50 years of service to Army Aviation. Pictured are: (front row, l to r) granddaughters Madison and Samantha; daughter, Summer; (back row, r to l): COL (Ret.) Dave Carey, chapter EVP; daughter, Christie; daughter, Jolene; Mabrey; wife, Deborah; son, James; and Gallagher.



CHAPTER COURTESY PHOTO

Alan "Bear" Robbins, site security officer for the Communications-Electronics Life Cycle Management Command at Aberdeen Proving Ground, MD, is inducted as a Knight of the Honorable Order of St. Michael at Phillips Army Airfield on July 13 by chapter president, COL (Ret.) John Gallagher, and chapter member COL Dean M. Hoffman IV. Robbins was recognized for his significant contributions in intelligence, surveillance and reconnaissance (ISR) for both the Army Aviation and Army Intelligence communities.

Mount Rainier Chapter



CHAPTER COURTESY PHOTO

Mount Rainier Chapter President and 66th Theater Avn. Cmd. commander BG Bruce C.R. Linton inducts **MAJ Martin DeBock** into the Bronze Honorable Order of St. Michael on behalf of the North Country chapter during the Mount Rainier Chapter meeting at Joint Base Lewis-McChord, WA on June 16, 2016.



CHAPTER PHOTO BY SFC (RET.) MARTIN FRANK

Thunderbird Chapter

CW4 (Ret.) Dwight J. Johnson, standardization pilot for Co. B, 2nd Bn., 149th Avn. Regt., was inducted into the Bronze Honorable Order of St. Michael at Army Aviation Support Facility #1, Lexington, OK on July 21, 2016. He was recognized for his 23 years of service to both U.S. Army and Army National Guard

Aviation as a CH-47D Chinook Standardization Flight Instructor/Instrument Examiner accruing over 4,013 hours. Celebrating with Johnson are (l to r): WO1 Joseph F. Keyes, SGT Derick E. Southwell, SSG Kelly J. Fisher, CW2 Kyle B. Watkins, Johnson, SFC Robert T. Calvert, SGT Michael C. Vaught, SSG Jeremy P. Courage, 1SG William C. Ritter, and SFC Ernest Botello.



CHAPTER COURTESY PHOTO

Tennessee Valley Chapter

COL James S. Romero, Project Manager, Joint Attack Munition Systems (JAMS), is inducted as a Knight of the Honorable Order of St. Michael, by chapter president Gary Nenner, in conjunction with a change of charter ceremony on July 6, 2016 at Redstone Arsenal, AL. Romero was recognized on the occasion of his retirement for successfully orchestrating the programs reliably providing HELLFIRE missiles and Hydra rockets to U.S. Army and coalition aviators.

Iron Mike Chapter



20 Volunteers from our AAAA Iron Mike Chapter located at Fort Bragg, North Carolina traveled to Lillington to perform interior and exterior repairs to the home of **Tarah and Zach Siekert**, who served Army Aviation as 15T (UH-60 Helicopter Repairers). Tarah is the second of five 2015 STANLEY Build Your America contest winners to receive \$10,000 worth of home repairs this year at no cost. The projects are being managed by STANLEY partner House of Heroes, the Columbus, Georgia-based non-profit which honors service and sacrifice with no-cost repairs to the homes of military and public safety veterans and their surviving spouses.

AAAA Members Keep in Touch!

Find us on Twitter – @Army_Aviation
On Facebook, LinkedIn, and YouTube search for Army Aviation Association of America.



AAAA

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AAAA Membership By CW5 (Ret.) Dave Cooper

The Membership Corner

Joe Korecz joined the Army in July 1982, MOS 51K Plumber and Combat Engineer. During his enlistment he approached his leadership and said he wanted to go aviation. He was counseled by his first sergeant that there was no way he could go aviation because he was an engineer and not bright enough to be in aviation.

“They’ll never take you,” he was told by the 1SG. Being told no motivated him, in his words “Big Time.” When his commitment to active duty expired he joined the Ohio National Guard as an aviation Soldier and hasn’t looked back. “This was the best decision I ever made,” said now-1SG Korecz.

During his active duty service Joe was airborne qualified and served at Ft. Drum, NY and Ft. Bragg, NC and deployed to Panama. He entered OH National Guard in 1986 as a 67N UH-1 Huey mechanic and rose through the ranks to become a 15T UH-60 Crew Chief and Flight Instructor. Between 2004 and 2005 he deployed to Kosovo and Bosnia. In 2009 Joe deployed to Iraq as master gunner, and standardization flight instructor.

In 2015 while deployed to northern Iraq his duties included platoon sergeant, standardization instructor, battalion master gunner, and detachment NCOIC. Joe’s unit’s mission was to fly their Black Hawks as cover for MEDEVAC aircraft. They provided local security while the MEDEVAC was on the ground. They also provided critical CASEVAC capabilities to the ground force commander. Joe described the deployment as quiet and reminds us that it is a good thing when the MEDEVAC birds aren’t busy. We agree! 1SG Joe Korecz recently took over responsibilities at Company B, 638th Aviation Support Battalion in the Ohio National Guard. It is a 140 Soldier company with all the missions you’d expect an ASB to perform.

Joe didn’t start his Army career as a first sergeant. He started the same place many of us did... in the back of a very crowded and very hot “cattle car” riding to the basic training barracks. When the truck stopped he said there was nothing but the uncoordinated movement of a mass of people trying desperately to exit the cattle car while loud voices screamed “encouragement” to get off their bus! Joe took two steps off the truck and fell face first in a heap, bags and all. The drill sergeant instantly



PERSONAL PHOTO PROVIDED BY 1SG JOE KORECZ

1SG Joe Korecz and his family pause for the Kodak moment in front of a UH-60 Black Hawk.

loomed over him and asked, “Who told you to lie down?” Joe said this was the funniest question he was ever asked; but, being a smart recruit he didn’t dare laugh, filing the experience away.

He has 3,000 flight hours and his numerous awards and decorations include 2 Meritorious Service Medals and an Air Medal. He also wears the Parachutist Badge and Master Crewmember Badge. In 2014 Joe got his A&P certificate. Joe works for the Federal Aviation Administration at the Columbus, Ohio Flight Standards District Office as an Aviation Safety Technician. He issues certificates for pilots, airframe and power plant (A&P) technicians, aircraft inspectors, certified flight instructors, and issues waivers for airshows.

1SG Korecz joined AAAA in 2007 and currently serves the Wright Brothers chapter on the membership committee and as VP of Marketing. The chapter holds quarterly meetings and has an annual outing to a Columbus Clippers minor league baseball game.

Joe is married to Debbie and they just celebrated 32 years! She serves on the Mentor, OH police force. They have two sons, Bryan and Michael. Bryan is an OSU grad and works in logistics and Michael is a Lakeland grad and seeking employment in law enforcement.

In his spare time this citizen Soldier coaches Junior High Football. This is his twelfth season. He enjoys mentoring the kids and is currently coaching at Groveport Junior High. 1SG Korecz said, “Don’t ever let people hold you back or tell you no. I try to be the leader that my 1SG in the engineer unit wasn’t.” He tries to show people what they are capable of achieving and how they can realize their dreams. Wise words for kids on the football team, aviation Soldiers, and the rest of us!

CW5 (Ret.) Dave Cooper
AAAA Vice President for Membership



New Lifetime Members

August 2016

Roberto Abascal
 CW2 Roger C. Abernathy
 CW2 Peter J. Alex, Ret.
 SGT Nicholas J. Amberg
 MAJ Spencer M. Anderson
 2LT Elijah J. Bail
 MAJ Andrew J. Bailiff
 CW5 Sam R. Baker III
 LTC Michael R. Bean
 COL Mark M. Beckler
 CPT Elizabeth M. Bell
 MAJ Joseph C. Bell
 Melissa A. Bell
 CW3 Jamie A. Belle
 MAJ Bonnie L. Belobrajdic
 MAJ Ryan A. Bernard
 CPT Brian R. Bertoglio
 CW3 Michael J. Bess
 LTC Andrew M. Beyer
 CPT Matthew L. Blair
 COL James T. Blake, Ret.
 MAJ Douglas A. Blevins
 CPT Andrew J. Blik
 SGT James K. Bolek
 MSG Kenneth Boudreau
 CW3 Benjamin B. Boyd
 LTC Walter R. Bradley, Ret.
 CPT Luke A. Bryan
 CPT Kevin M. Burns
 CW3 Adam P. Busch
 CW2 Michial J. Cebe
 CW2 Joseph L. Chadwick
 COL William J. Clark, USAR
 CW2 Kirkland H. Coffee
 SPC James E. Cogdill
 Bryan A. Cole
 CW4 Anthony Conrad, Ret.
 CPT Eric V. Cornelius
 COL John M. Cyrulik
 CW2 Steven E. Day
 CW2 Joseph P. Deleon
 Gail Drabczuk
 CW4 Dustin C. Engelhardt
 CW2 Cliff L. Evans
 CW2 Jeffery R. Ewell
 Robert G. Findley
 CPT Nikolas M. Folgert
 SFC Israel D. Franco
 Jack R. Gallagher
 James G. Gallagher
 CPT Jared M. Gantt
 Ms. Valerie A. Garretson
 CW4 Brian L. Gaston
 CW3 Michael A. Gazda
 CW5 Allen R. Godfrey
 MAJ Patrik W. Goss
 CW4 John W. Grace
 LTC Travis M. Habhab
 Darla D. Hall
 Harry F. Hall
 CPT Joseph Dale Hall
 COL Rick D. Hall, Ret.
 MAJ Matthew P. Hertz
 CSM John R. Hicks
 John M. Hinnant
 1LT Chad M. Howard
 CPT Nathan S. Humbert
 CW4 Randall D. Jaynes Jr.
 Scott A. Kinser
 LTC Erik K. Kober
 CW3 Nicholas A. Koepfen
 CPT Bryan S. Koyles
 CPT William T. Kuebler
 CPT Christopher D. Landers
 LTC Michael LaPoint
 CPT Kevin E. Lee

LTC Neal C. Lennstrom, Ret.
 PFC James A. LeRiche
 COL Donald Lisenbee Jr. Ret.
 CPT Jeffrey D. Mainwaring
 1LT Robert J. Manchester
 CW4 Stephen L. Mathys
 CSM James Peter Matthews
 CPT Chad R. Maulsby
 CPT Samuel O. Maxcy
 CW2 Enrico D. Mayers
 MAJ Sean P. McBride
 LTC John A. McGrann, IV
 CSM Shawn C. McKay
 CW4 Shawn Mertens
 CW4 Daniel B. Michael
 SFC Bernard J. Miessie, Ret.
 MAJ Trent D. Miller
 CW3 James L. Morrison
 LTC Andrew D. Morrow
 CW4 Troy E. Moseley
 CPT Matthew L. Mraz
 CW2 Steven A. Mullett
 1SG William H. Myers
 CW2 Seneca F. Newkirk
 CPT A. Nicholas Parsai
 MAJ Greg A. Pasquantonio
 SFC Alejandro Ramirez
 CW4 Kenneth Ramos
 MAJ Erik K. Rautenberg
 CW3 Daniel R. Reinhardt
 CPT Bill Reuter, Ret.
 LTC Jennifer Reynolds
 CW3 Patrick J. Reynolds
 CPT Janeann E. Robinson
 Kevin R. Robinson
 CW5 Peter W. Rondeau
 1SG Aubrey D. Russell
 1LT Keevan L. Schimmel
 CPT Russell E. Scott
 CW3 Anthony D. Seib
 CPT Hans C. Seller
 Robert B. Sharp
 CW4 Gary W. Simmons
 CW2 Jeramie G. Simpson
 CW4 Robert S. Slider
 MAJ Donald Smith, Ret.
 CW3 Kristina S. Sofchak
 John H. Sorensen
 CSM Gary G. Spees, Ret.
 CPT Jonathan M. Spikes
 CPT Justin A. Stirling

MAJ Donald J. Sulpizio
 1SG Daniel S. Sutczak
 SSG Steven R. Sykes
 CW2 Samuel J. Tardif
 CW5 Dale K. Taylor, Ret.
 Matthew J. Thompson
 CW4 Stephanie Truax, Ret.
 MAJ Joshua A. Urban
 LTC Robert F. Vicci
 COL Kevin A. Vizzarri, Ret.
 LTC Jamie L. Wallace
 CPT Peter M. Waller
 SFC Matthew R. Ward
 MAJ James F. Watts
 CPT Adam F. Werner
 Rushton D. White, Ret.
 SGM Joyce M. Wilson, Ret.
 CPT Whitney B. Winchester
 SGT Timothy A. Witts
 SSG James A. Young
 Loretta Zarate

September 2016

SPC Adam T. Acheson
 Mr. Walter Gerald Adams
 COL Craig J. Alia
 Nicholas Amico Jr.
 CW2 Luke C. Anderson
 CSM Eric S. Arant
 CW5 Renato R. Astolfi
 CSM Chris Bosowski
 LTC Ryan P. Boyle
 LTC Jeffery J. Bragg
 CW5 Matthew L. Brown
 CPT James S. Burns
 CW4 John P. Butler
 SFC Jeremy W. Buzzard
 MAJ Damion Calvert
 MAJ Benjamin T. Channels
 CW2 Madeline M. Clark
 CPT Richard G. Clark
 MAJ Josh W. Clemmons
 CPT Logan G. Cloaninger
 CPT Shaun A. Collins
 MAJ Nathan M. Colvin
 CW3 Owen M. Connors
 MAJ Joseph R. Corsentino
 CW4 Douglas A. DeBoer
 CW4 Lourie A. DeBoer
 CPT Tatum M. Donnelly

AAAA has started a New Top Recruiter Program for 2016 which awards \$100 to the member who recruits the most new members in a given month (minimum of 10 members to qualify).

AAAA congratulates the following Top Recruiters for:

August 2016:
CPT Zachary L. Burton
Yellowhammer Chapter - VP Membership
 (12 new members)

September 2016 (Tie):
LTC Wade A. Johnson
Washington-Potomac Chapter VP Membership
 (11 new members)

1LT Amanda C. Morgan
Volunteer Chapter VP Membership
 (11 new members)

For more information on this and other programs, contact your Chapter officers or go to quad-a.org

CPT Brandon N. Dotson
 CW2 Ahmed J. Edwards
 CPT William A. Eggers
 CW3 Matthew J. Episcopo
 CW4 Brian R. Erb
 CPT Kurtis P. Evick
 CW4 Steven D. Farabaugh
 CW3 Matthew D. Fogg
 Wilma A. Frank
 CW2 Albert R. Fritz
 CW5 Brian R. Fuller
 CW5 Randy A. Garrett
 Peter J. Germanowski
 CPT Dale A. Goldsberry, Ret.
 CPT Hellmut A. Haffner
 CPT Joseph D. Hall

CW3 Adam D. Hankemeier
 CW5 Michael W. Hardy
 MAJ Timothy A. Harloff
 CW3 Gregory S. Hemm
 CW5 Edward Henderscheid
 MAJ Adam D. Heppe
 CW4 John R. Holmes
 CSM Zacchaeus H. Hurst
 CW3 Michael I. Janis
 CPT Christina C. Johnson
 MAJ Jarrod Keith Knowlden
 SSG Dwight Kohler
 CW3 Michael Krueger
 CW2 Andrew J. Lau
 CSM Mark W. Lindsey
 CSM Ronnie B. Littler

MAJ Christopher R. Lossing
 CSM Mark K. Mastrian, Ret.
 William J. May III
 CW5 Brent A. Melland
 MAJ Joshua A. Meyer
 CPT Edwin D. Mobley
 CW5 Scott E. Moore Sr.
 CPT Kendal Nelson-Edwards
 MAJ Stephan L. Nowakowski
 CW4 Brian Oxley
 CW4 Sean T. Richards
 CW4 Matthew T. Rogers
 CPT Jon E. Ruble
 1SG Raul M. Ruiz
 CW5 Benjamin D. Savage
Continued on next page

ARMY AVIATION Magazine Photo Contest

~12~ CASH AWARDS

For contest rules go to ARMYAVIATIONmagazine.com — Deadline January 12, 2017



New Lifetime Members Continued

CSM Anthony V. Savino
CSM Ronald D. Schlangen
CW3 Stephen P. Schroeder
COL William P. Shea, Ret.
Douglas C. Shidler
MAJ Leah C. Shubin
CPT Kristoffer L. Sibbaluca
WO1 Nicholas P. Smart
CW3 Stephen Staats
CW5 Gregory E. Stinson
Tamela Taliento
CPT Merritt W. Thomas
CW2 Christopher M. Thore
CW5 Greg Turberville, Ret.
CSM Mark F. Tynan, Ret.
SGT Kuab A. Vang
MAJ Phillip Vaughn
CSM Patricia A. Wahl
1LT Amberly G. Weber
CW3 Adam M. White
COL Alan V. Wilcoxson
CSM James D. Wilson
CW2 David R. Woodward
LTC James R. Yastrzemsky

New Members September

Air Assault Chapter
1SG Efren Alonso
MAJ Derek Carlson
CW5 Jay Davis
MAJ Jason J. Dumser
SPC Skyler Evans
CPT Michael Griffin
Joseph Hernandez
CPT John Martin Lohman
CW3 Brian Scott McDaniel
MSG Todd Anthony
McKenzie, Ret.
SFC Cedric D Taylor
Mr. Kevin Wimberly
Aloha Chapter
SGT Jose M. Carrillo
SGT Shari D. Crump
SPC Artez T. Fennell
SPC Joel A. Frayde
SGT Adrina M. Nunez
CW2 Patrick Rogers
CW4 Matthew Schock
SPC Jason L. Tighe
Arizona Chapter
Gary D. Klein
SPC Ralph Lamar Lunsford
Danelle Isabella Pimentel
Alexander Sondgeroth
Lt. Col. Michael Kevin Stiff
Aviation Center Chapter
CPT Scott A. Cygan
MAJ Emily S. Gerding
CSM Ronald Graves
COL Michael Harlan
George W Hildebrandt
2LT Natalie Marie Millan
2LT George Ozga
SPC Joshua Page
2LT Justin M Snow
Black Knights Chapter
CPT Bryan Tauzer
Central Florida Chapter
Rachel L. Clark
Carla E. Hoskins
Colonial Virginia Chapter
CW4 Erik Olsen
Connecticut Chapter
James Chow
Robert Majkner
Joan Mikos
SFC Francis A. Tranquillo
Corpus Christi Chapter
Ector Ancira

Delaware Valley Chapter
CW3 David M. Anderson
TSgt Carlos Caceres
LT Jon E. Kocher, Ret.
Desert Oasis Chapter
CW4 Dennis Eelkema
Flying Tigers Chapter
PFC Charlie Morris
CW3 Ronald E. Whitely III
Frontier Army Chapter
1LT David Isaac
CPT Colin M. Sattler
Great Lakes Chapter
CW3 Bradley Bailey
Greater Atlanta Chapter
SSG Schmacher A Blount
Iron Mike Chapter
CSM Steven J. Hartmann
Keystone Chapter
SSG Matthew Paul Day
SFC Brian O. Douillette Jr.
MAJ Brian Harrity
Jared J. Muise
Shawn M. Padgett
Jason E. Seger
Mid-Atlantic Chapter
MAJ Christee Cuttino
SSG Thornton C. Fordham
CPT Sarah C. Kelley
SSG Angel Melendez
CPT Eric Predmore
Morning Calm Chapter
WO1 Michael Bahr
Mount Rainier Chapter
CW4 Dennis Eelkema
MAJ Emily S. Gerding
LtCol Lowell Rottrup
Jared B Smith
Narragansett Bay Chapter
MSG Paula Guarino
North Star Chapter
CW2 Andrew J. Anderson
CW2 Clinton M. Boom
CW3 James F. Crigler
1LT Brandon Hale
CW2 Anthony R. Hanson
SPC Jonathan H. Nielsen
SPC John M. Stout
SGT Derek K. Vollmer
PFC Spencer D. Werness
North Texas Chapter
CW4 JOE GRADY
LtCol Frank Lazzara, Ret.
SPC Quint O'Connell
SSG Kyle A. Ratliff
Mr. James Wilson
Northern Lights Chapter
David Michael Devine
Oregon Trail Chapter
SSG Jack Reeves, Ret.
Phantom Corps Chapter
1SG Willie Lee Brooks
CW4 Wayne Ming
Pikes Peak Chapter
SPC Kristopher C. Ash
CW2 Mike Bailey
CW3 James Baker
SFC Michael V. Browder
SPC Joshua W. Brown,
CW3 Michael Bryan
SGT Daniel Busby
SPC Matthew S. Butler
CW4 Kyle S. Clark
CPT Richard G. Davis
CW2 Vittorio V. Egitto-Kern
CW2 Patrick W. Furrow
MAJ Randall Griggs
CPT Chad R. Heusdens
CPT Jennifer L. Iveland
SGT Scott Jarvis
SGT Lillian C. Jones

CW4 Joshua S. Kinnee
CW4 Lee E. Kokoszka
SGT Kevin M. Krut
SGT Jason R. Kukuk
SPC Dominique L. Long
CW4 Kevin Martin
CPT Jacob Mathew
SPC Harrison R. McCleary
SFC Roch P. McKay
SPC Cameron C. Mielke
1SG Alejandro Oliva
SPC Oliia A.L. Palmer
SGT Shaun J. Roboman
PFC Adam S. Rogus
SPC Juan G. Roman
CW3 Christopher L. Ronald
SPC Quentin D. Simmons
1SG Aaron L. Stephens
CW3 Glenn E. Stewart
SGT Roeut Theam
SFC Anthony W. Tyrance
CW2 Kevin C. Zimmer
Rio Grande Chapter
SSG Mitchell R. Moore
Savannah Chapter
MSG Tracy Mabes
MSG Dennis K. McCoy Jr.
SPC Tyler Ryan Ruess
Michael James Stille
Tennessee Valley Chapter
Billy W. Carroll
Carvil Chalk
CW4 Steven M Culli, Ret.
SGT Jeffrey M. Dennis, Ret.
Xuyen K. Do
1LT Timothy Gearhart, Ret.
David M. O'Brien, Jr.
John Stewart
Brian R. Williams
Thunderbird Chapter
SPC Cody Baker
SPC Michael D. Turner
SGT Timothy Vanderslice
VMI/VWIL Chapter
CW2 Vinh Q. Do
Washington-Potomac Chapter
MAJ Terry L Pownall, Ret.
Wright Brothers Chapter
MSGT Christopher Jones, Ret.
Rick Morello, USAR Ret.
LTC Jonathan Shaffner
No Chapter Affiliation
MSG Daniel Bors
MAJ Benito M Garcia
LTC Carl B Matney Jr. Ret.
Ryan Nanni
CW2 Ryan Tyrrell

New Members October

Air Assault Chapter
CW5 Jay Davis
SGT Michael J Delgado
SPC Skyler Evans
SFC Joseph Hernandez
CW5 Dale Van Pacwa
CW3 Katherin Spahn
Aloha Chapter
SGT Jose M. Carrillo
SGT Shari D. Crump
SPC Artez T. Fennell
SPC Joel A. Frayde
SGT Adrina M. Nunez
SPC Jason L. Tighe
Arizona Chapter
CW2 Craig Bremer
Gary D. Klein
Danelle Isabella Pimentel
Lt. Col. Michael Kevin Stiff
Aviation Center Chapter

CW3 Marquis L. Devane
MAJ Emily S. Gerding
CSM Ronald Graves
2LT Luke Grossmann
COL Michael Harlan
MAJ Sonya Horwell
Mr. Oswald Ingraham
Dr. Joseph MacFadden
CW3 Anthony Ryan Minkler
CW4 Brian V. Parks
SGM Matthew Shoemake
2LT Zachary J. Yozamp
Bavarian Chapter
PFC Michael J. Umdhay
Black Knights Chapter
2LT Lucas Fazzari
Cedar Rapids Chapter
Drew Dechant
Central Florida Chapter
LTC Ralph W Briggs
Robert Nix
SGT Kieta St. George
Colonial Virginia Chapter
Jeff P Herman
Michelle M. Prouix
SSG Joshua C. Ramey
Connecticut Chapter
Quinlan C. Lyte
SFC Francis A. Tranquillo
Corpus Christi Chapter
Ector Ancira
Donivan F Babcock
Thomas W. Jones
Timothy J. Wooldridge
Cowboy Chapter
SGT Kristen N Graham
Clarence Johnson
WO1 Gary N. Webster
Delaware Valley Chapter
CW3 David M. Anderson
John J. Bergin, Jr.
Desert Oasis Chapter
MAJ Curtis Armstrong
Flint Hills Chapter
1LT Andrew E. Petefish
CSM Roque Quichocho Jr.
MAJ Cristian Robbins
Flying Gator Chapter
MSG David Backes
Flying Tigers Chapter
SGM Mark Smith
1LT Timothy J. Williams
Frontier Army Chapter
CPT Colin M. Sattler
Greater Atlanta Chapter
SSG Schmacher A Blount
Joseph Brooks
Griffin Chapter
SPC Tomas Acosta
CW2 Robert Adams
PFC Ilse Aguilar
CW3 Jonathan Aleshire
CW2 Braden Carl Andrews
PV2 Nathaniel Aponte
SPC Gregory Artsukevich
SPC Kris Aspenson
SGT James Badgett
SSG Davey Baik
CW2 Joseph Eugene Baker
SFC Christopher Ball
SPC Determe Barron
SGT Phillip James Barwick
CW3 Charles Basham
SPC Xavier Thomas Beach
SSG Ieshia Beaver
SGT Putu Berry
SGT Perry Bishop
SPC Durango W. Blackford
SPC Victor Boswell
CW2 Jonathan Bourland
CW2 Benjamin B. Boyd
PV2 Christopher Boynton

CW2 Joseph Daniel Briggs
SSG Barrett Brown
SPC Damion Brown
1LT Joseph Brown
PFC Jeremiah Russell Brown
SGT Keisha Budgett
SPC Brandon Bundy
PFC Jasmia Burks
CW3 Travis Gray Call
SPC Jonathan Cardecnegron
CPT Nathaniel Carter
SPC Nicholas Cecil
SPC Gilbert Cedillo
SSG Jason Christman
PFC Ethan Lee Clark
SPC Jordan Clark
SGT Nicholas Clark
PFC Victoria J. Clay
SFC Jorge H. Cobo
PFC Nikolas Gilbert Colon
CW2 Kevin Stacy Coppins
CPT Eric Cornelius
SGT Nicco A. Cousins
SPC David Crouce
CW2 Zachary Damron
PVT Michael Levi Davis
PFC Nichole Defusco
PFC Rene Dejesusgarcia
PV2 Thomas Delloroso
SFC Michael Diehl
SFC Alberto Duran
CW2 Timothy M. Durant
CW2 Walter N. Eiman
SPC Tyler Eschete
SGT Maryann Espiritu
CPT Martin Evans
SPC Rashard Evans
SPC Gus Falter
SFC Brendan Fergus
SPC Tiffani Ferro
CW2 Kyle Finley
CW2 David Foust
1LT Lacy Freeman
SSG John Frey
SPC Michael Garciaalvarez
SGT Andrew M. Glover
SGT Jose Gonzales
SGT Gavyn Green
SPC Alexander Greenham
1LT Nicholas S Grunsky
1LT Todd Guison
CW4 Nicole Hayes
CW4 Uriah Hayes
1SG Kevin S. Hendrickson
PFC Benjamin Hentzler
SGT Lwivan O. Hernandez
SSG Donovan Hill
SSG James Holmes
SPC Julius Jacobs
CW3 Nicholas A. Johnson
SPC Nathan Johnston
SPC Andrey Kabakov
1LT Konrad Kearcher
CW4 Timothy Kirschbaum
CW3 Chad Kohrs
PFC Austin T. Koons
SSG Zakari Lantz
SGT Anda G. Lawrence
SPC Toupeng Lee
SPC Max Long
SPC Jeffrey Loos
PFC Jan Lopezoto
SGT Logan Loving
SGT Gabriel Lozano
SPC Dykota Lynch
SPC Vanessa Malcomb
CW2 Anthony Manfredi
SPC Devante Marsh
1LT Robert II Mayville
CW3 Jenny McCarthy
SPC Malyk Dandre Mccoy
SPC Scott McDaniel

PFC Brandon McGraw
PV2 Jonathan McJunkin
SGT Darrie McNabb
PFC Joseph Mendoza
SPC Matthew S. Messinger
1LT Donald Michael
1LT Stephen J Middlebrook
PFC Jered Miller
1LT Jayson Miller
CPT Ryan Mills
SGT Justin Mitchell
MAJ Chad Monroe
PFC Brandon Monte
SGT Thomell Moorman
SGT Will R Moralesnieves
SGT Jose B. Moratorres
SPC Omar Moreno
SPC Cole Jared Morgan
SPC Richard Norcross
SSG Warren Palmer
PFC Reed Palmer
SPC Glen Parker
SGT Dustin Parker
SPC David Patterson
SGT Ryan Perea
1LT Thomas Peters
SPC Laurence Phoenix
CW2 Casey James Pierce
SPC Lanlula Pine
CW2 Clinton Piotrowski
CW3 Daniel Post
SPC Raul Preciado
CW3 Daniel Reinhardt
SPC Chase Reynolds
SGT Antonio Rhodes
SPC Collin Rice
PFC Keyaira Riley
SPC Jarrod Rivera
SPC Tanner Roberts
PFC Ariel Rodriguez
SPC Lawayne Ruffin
SGT Eduardo Salazar
SGT Ryan Sambuco
Idaho Snake River Chapter
SFC Richard Eisele
Iron Mike Chapter
Stephen Denty
SGM Reginald Thomas
LTC Bryan Woody
Jimmy Doolittle Chapter
SSG Joshua Barkey
Jonathan S Fletcher
Keystone Chapter
SSG Matthew Paul Day
SFC Brian O. Douillette Jr.
MAJ Brian Harrity
Jared J. Muise
Shawn M. Padgett
Jason E. Seger
Magnolia Chapter
CW4 Cecil T Crawford Jr.
Mid-Atlantic Chapter
Chester W. Galloway
CPT Sarah C. Kelley
Midnight Sun Chapter
CW3 Louis B. Munding
Minuteman Chapter
SFC Brian Garrison
Martin V Nappi
Morning Calm Chapter
WO1 Michael Bahr
Mount Rainier Chapter
MAJ Emily S. Gerding
Mrs. Elizabeth Horney
LtCol Lowell Rottrup
SSG Jared B Smith
North Star Chapter
CW3 James F. Crigler
North Texas Chapter
Jack Fisher
CW2 Nate Parks



In Memoriam



RENE EBDEZ/PHOTO

Lieutenant Colonel James R. Barkley Sr., U.S. Army Retired

It is with great sadness that AAAAA announces the passing of a member of the Army Aviation Association of America's "The

Originals," otherwise known as the Cub Club.

LTC (Ret.) James R. Barkley Sr. passed away on August 7, 2016 in Arlington, Texas; he was 90. He enlisted in the U.S. Army in 1943 as a private in the field artillery and served in Germany during WWII and Japan. Returning to the States as a staff sergeant he reenlisted and in 1948 received a commission to 2nd lieutenant. In 1950 he attended U.S. Army Liaison Pilot flight training, graduating in June as an Army Field Artillery Liaison Pilot. In December, he deployed to South Korea. After a year of flying combat support missions in Korea and two years Army Aviation support duty in Japan, he was transferred to the Hq's U.S. Army, Washington D.C as an Army Aircraft Development Project Officer in the Army Aviation Engineering & Development Branch.

In June 1957 he was assigned to the U.S Navy Bureau of Aeronautics assisting in the development of the Grumman designed AO-1, later designated the OV-1 by the Army. He commanded aviation maintenance units at the company and battalion level and served on the U.S. Army Aviation Test Board. He served with the 34th General Support Group in Vietnam where he flew many combat support missions. Following assignments in the Pentagon and Germany, on 30 September 1973, he retired as a Master Army Aviator with over 6,000 fixed and rotary wing flight hours, including 291 combat flight hours. Upon retirement, he accepted employment with Bell Helicopter Textron, as logistics manager for military helicopter programs. On the 31st of July 1992 following retirement from Bell Helicopter, he continued as an active member of AAAAA, 'U.S Army Transportation Corps Honor Regiment', OV-1 Mohawk Assn, and the Army Liaison Pilots 'Cub Club Originals'.

He was buried at the Dallas/Fort Worth, TX National Cemetery with full military honors on Wednesday, August 17, 2016.

May he rest in peace.



Drake Peddie
SSG Kyle A. Ratliff
SGT Victoria A. Salierna
James Wilson
Northern Lights Chapter
SSG David Michael Devine
Old Tucson Chapter
CW4 John E Allen
CAPT Matthew Olson
Tim Martin Peterson
Steve F. Schrader
Oregon Trail Chapter
CW3 David Minkler
SSG Jack Reeves, Ret.
Phantom Corps Chapter
1SG Willie Lee Brooks
MAJ Julie MacKnyght
1SG Pedro Ocampo
CW3 Vance L. Scruggs
Pikes Peak Chapter
SGT Karim S. Acosta
SSG Judah M. Africanus
SFC Edgar A. Alvararado
PFC Carlos X. Arla
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AAA Family Forum By Judy Konitzer

Operation Family Caregiver

By Judy Konitzer and Chelsea Collins

After the tragedy of 9/11, legions of service members, Active Duty, National Guard, and Reservists were sent into battle. As they continue to transition home, however, many of these brave men and women face daunting circumstances.

Of the more than 2.5 million deployed, more than 50,000 have been wounded in action. Additionally, severe effects of traumatic brain injury and post-traumatic stress are realities that make homecoming jarring, especially when these individuals have taken great pride in their strength, competence, and self-reliance. They are now forced to rely heavily on their loved ones for help.

Equally daunting are the overwhelming hardships for the unsung heroes who care for them. Young spouses and aging parents make up the majority of military caregivers, and in many cases, it is at the expense of their own health and well-being. Many are hesitant to ask for help or reluctant to admit they are overwhelmed. Family caregivers often receive little training how to deliver complicated care, are sometimes not treated as partners in their loved ones care, and often not encouraged to maintain their own health. Research shows caregivers are at increased risk for health, emotional, financial, and work-related problems.

Recognizing the Need

When President Jimmy and former First Lady Rosalynn Carter returned to Georgia from the White House, Rosalynn garnered her 40 years of interest in the mental health field and established a mental health program at The Carter Presidential Center in Atlanta, Georgia.

She had learned at an early age by caring for family members that “delivering quality care with love, respect and attention is both labor intensive and personally demanding.” The idea of working with caregivers for mentally and physically disabled, including the frail and elderly, spread through the community.



Former First Lady Rosalynn Carter addresses attendees at the Uniting Forces To Support Military Caregivers Summit, July 29, 2016, at The Carter Center in Atlanta, Georgia

In 1987 the Rosalynn Carter Institute for Caregiving (RCI) began at Georgia Southwestern State University in her honor. Realizing the success of the Institute’s support for family and professional caregivers for families with varying degrees of long-term illness or disabilities, a new program, Operation Family Caregiver (OFC), was established in 2012 specifically to address the needs of military caregivers.

No Geographic Barriers

Specially trained coaches, working for community-based organizations across the country, visit the caregivers’ home, or meet by Skype/FaceTime, to customize a 16-24 week program that is unique to each family. Caregivers and their coaches develop strategies to help them get through tough times, overcome challenges, cope more effectively with problems they never imagined, and make plans to manage over the long term. Caregivers completing the program report being less depressed and more satisfied with their lives, have fewer health complaints, and are generally more prepared to take care of their families. The OFC program, after expansion to Washington and Nevada, will be in 14 locations in 10 states plus the District of Columbia.

Caregivers anywhere in the U.S. can be served as there are no geographic boundaries. More information can be found at www.operationfamilycaregiver.org.



OFC Collaboration

Capitalizing on partnerships with organizations offering specialized programs, an OFC summit Uniting Forces to Support Military Caregivers was held on July 29th at The Carter Presidential Center. Former First Lady Rosalynn Carter was joined by leaders from the White House, Elizabeth Dole Foundation, The U.S. Department of Veterans Affairs, Easter Seals Dixon Center, Military and Veteran Caregiver Network (MVCN), and Blue Star Families among others devoted to military families. The summit provided a forum for collaboration and exploration among the leaders, policymakers, military, and caregivers with the objectives to: (1) understand the heroic successes as well as the heartbreaking trials of military caregivers, (2) increase knowledge of the available caregiver supports, (3) continue to address hidden issues (domestic violence and others) and uplift our military service members, veterans, and their families, and (4) create con-

crete connections so military families can move forward and address their needs and those of their loved ones.

In her opening remarks, RCI Executive Director Dr. Leisa Easom said, "It is hard to imagine how difficult it is to be a husband or wife, or a parent, or even a friend, whose loved one comes home from war simply unrecognizable. He or she takes on this new role of 'caregiver' but also needs to adapt to how his or her own life has changed. As OFC extends into new communities, we can see the lasting impact it is having on military families."

Chelsea Collins is the communications/web specialist at the Rosalynn Carter Institute for Caregivers at Georgia Southwestern State University, Americus, Georgia.

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



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AAA Legislative Report

By COL (Ret.) William H. Morris
 AAA Representative to The Military Coalition (TMC)
 bill.morris@quad-a.org

Short September Session for Congress

Congress came back after their seven-week summer break for a very short four weeks prior to leaving for the election campaign season. The biggest challenge facing the members during the session is to pass a continuing resolution (CR) allowing the government to run after October 1st. This now seems like standard practice as there has not been a budget passed on schedule since 2008. Within the four weeks it is highly unlikely that there will be any of the required caucus activities to pass the 2017 National Defense Authorization Act (NDAA) and in all reality this bill will not be passed until the new 115th Congress convenes in January 2017. As of this writing, the current plan is for the Senate to act upon the House CR bill authorizing the government to continue operation through December 9, 2016 which was passed in June. The Senate was scheduled to vote on the bill on September 19th but it was postponed to continue negotiations on some of the senators' individual initiatives.

On September 22nd the Senate Appropriation Committee released their version on the CR for final vote and Senate Appropriations Committee Chairman, Thad Cochran (R-MS), commented that one of the major tenets of the CR was to "... ensure stability for our men and women in uniform, continue important security and law enforcement programs." With the current appropriations bill coming to an end, the Office of Management and Budget (OMB) is advising all government agencies to prepare for a shutdown since there is only another week remaining to the potential shutdown. Contained within the CR is the Military Construction and Veterans Affairs appropriations bill which provides \$82.8 Billion in discretionary spending. The CR will also provide the Department of Veterans Affairs (VA) with a total budget of \$179.6 Billion which is up by \$14.2 Billion from 2016 so it seems that there is bi-partisan support for continued, increased funding of the VA to include \$260 Million for the continued

upgrade to the VA's electronic medical records system. Defense Secretary Ash Carter called the lack of a Congressionally approved budget "deplorable" and that there was significant risk with all of the uncertainty of a CR which prohibits the start of new programs and mandates funding at FY 2016 levels. While appearing before the Senate Armed Services Committee (SASC) with chairman of the Joint Chiefs of Staff, General Joseph Dunford, Secretary Carter noted that the DoD enterprise could not conduct consistent planning which does not reassure our allies and enables foes to message around the World. General Dunford testified that budget challenges affected all of the Service's modernization plans and readiness, while preventing DoD from meeting all of its alliance obligations. He also noted that the time and casualties the United States would face as a result of the readiness impacts to the services based on the CR.

Editor's Note: On September 28th, the House voted to pass a temporary CR which will allow the federal government to operate through December 9th. President Obama signed the bill on September 29th.

Hidden Heroes Campaign

The Elizabeth Dole Foundation launched Hidden Heroes, a national campaign to recognize those truly special individuals who care for disabled military and veterans. With Tom Hanks, Tom Brokaw and Jessica Allen, wife of Army Staff Sergeant Chaz Allen, a double amputee, and her husband's full time caregiver, former Senator and Foundation President Elizabeth Dole opened the ceremony at Comcast NBCUniversal in Washington, D.C. on September 27th and announced the launch of the Hidden Heroes website. Dole noted that her husband, former Senator and Presidential Candidate Bob Dole, had spent an extended period of time at Walter Reed Army Medical Center and it was there that her eyes were opened to the many challenges facing caregivers which she characterized as the nation's military crisis. Hidden Heroes is designed singularly to provide awareness to

the wonderful work, yet the great challenges the 5.5 million caregivers across the United States face each and every day. Hidden Heroes also seeks to encourage business, communities and civic leaders to contribute to and support the caregiver community at large. Its third stated goal is to encourage caregivers to register with the organization to ensure they have the resources and support necessary to perform their responsibilities to their Veteran or Servicemember. Caregivers are encouraged to register at HiddenHeroes.org to become part of this noble and supportive organization.

Bring Home Our Heroes Act

During the month of September we honored prisoners of war (POW) and those still classified as missing in action (MIA) on September 16th on national POW/MIA Recognition Day. With that as a backdrop, Senator Kelly Ayotte (R-NH) finalized and submitted legislation known as the Bring Our Heroes Home Act on September 28th. This legislation has been submitted by Senator Ayotte, a member of the Senate Armed Services Committee, to allow more transparency to families of POW/MIAs as they continue to try to search for and bring their Servicemembers home. The bill (S.3448) would create a Missing Armed Forces Personnel Records Collection and Review Board at the National Archives to work quickly to declassify those missing Servicemembers' personnel records.

In the past, families of POW/MIA were prevented from receiving these records as in many cases they were unnecessarily classified and could not be released to the public. Additionally the legislation would increase access for these families and direct more cooperation with the Defense POW/MIA Accounting Agency (DPAA) to enable greater visibility and to expedite their loved ones return. The Military Coalition (TMC) supports and encourages constituents to reach out to their Senators to support and cosponsor this legislation.



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.

IVCS Approved for CH-47



U.S. ARMY PHOTO BY PFC EMILY HOUBERSHEDDT

The Improved Vibration Control System (IVCS) for the Boeing CH-47 Chinook helicopter produced by LORD Global Aerospace & Defense Corporation has met product qualification. Under contract with Boeing since Sept. 2013, LORD has completed all program milestones and has received final qualification approval from the

U.S. Army Aviation Engineering Directorate, AMRDEC for the state-of-the-art patented system that controls steady state and transient vibration. Product deliveries for incorporation into the Boeing CH-47F production line will begin in mid-2016. The LORD product is a direct/drop-in replacement for the previously used passive tuned vibration absorber and is easily installed using existing mounts on the Chinook aircraft. The IVCS technology which offers a triple-digit weight savings benefit will now be part of the baseline configuration moving forward in 2016, followed by opportunities for retrofit of Special Operations MH-47Gs, fielded CH-47Fs, and Foreign Military Sales' H-47 aircraft.

NAVAIR Marks First Flight with 3-D printed, safety-critical parts



U.S. NAVY PHOTO

An MV-22B Osprey equipped with a 3-D printed titanium link and fitting inside an engine nacelle maintains a hover during a July 29 demonstration at Patuxent River Naval Air Station, MD. The flight marked Naval Air System Command's first successful flight demonstration of a flight critical aircraft component built using additive manufacturing techniques.

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

AAI Corporation, doing business as Textron Systems, Hunt Valley, MD, was awarded two contracts: a \$14,199,156 modification to contract W58RGZ-13-C-0108 for Shadow v2 Release 6 system baseline update for the engineering services memorandum program. Work will be performed in Hunt Valley with an estimated completion date of March 22, 2018; and, a \$23,409,144 modification to contract W58RGZ-13-C0016 to incorporate improved map imagery synchronization and spectrum reallocation in support of the One System Remote Video Terminal. Work will be performed in Hunt Valley with an estimated completion date of Dec. 30, 2018.

AAL USA,* Huntsville, AL; **ARMA Aviation Corp.,*** Tampa, Florida; **Rota Aviation Consulting,*** Leadville, CO; and **Yulista Tactical Services LLC,*** Huntsville, will share a \$238,000,000 Type 1 order dependent contract for worldwide training support services for the

Non-Standard Rotary Wing Aircraft Project Management Office. Work locations and funding will be determined with each order, with an estimated completion date of Sept. 18, 2021.

Blackhawk Management Corp.,* Houston, TX, was awarded a \$29,317,797 cost-plus-fixed-fee contract for the Guardrail Electronic Intelligence Advance Quick Look subsystems. Funding and work location will be determined with each order, with an estimated completion date of Sept. 28, 2021.

Boeing, St. Louis, MO, was awarded a \$13,059,747 modification to contract W58RGZ-13-C-0086 for one additional Longbow crew trainer. Work will be performed in St. Louis with an estimated completion date of Jan. 31, 2019.

General Atomics Aeronautical Systems Inc., Poway, CA, was awarded a \$25,287,320 modification to contract W58RGZ-13-C-0109 for acquisition of four Gray Eagle War replacement aircraft and four satellite air data terminals under the Gray Eagle Unmanned Aircraft Systems full rate production contract. Work will be performed in Poway, California, with an estimated completion date of December 30, 2017.

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 Heather Dunton
 Hillary M. Weilbacher
 Jenny Gilbert
 Lisa M. Mason
 Ellen D. Van Weelden
 Lori L. Tucker
 Diana Graves
 Julie Thorn
 Dr. Nina C. Griffin
 Kim Huber

Denise Squire
 Janette Lewis
 Heather Mattingly
 Margaret Kurtts
 Andrea Herrera
 Jennifer Lay
 Jayne Zampelli
 Laura Galloway
 Elizabeth Braman
 Paula Steele
 Tracy Fuentes
 Emily Bachman
 Emily Leathhead

ACEs

LTC Wade A. Johnson
 1LT Amanda C. Morgan
 CW5 Teresa M. Burgess
 COL James Barker

Soldier of the Month

SGT Victoria A. Salierna
North Texas Chapter - Aug. 2016

PFC Michael J. Umadhyay
Bavarian Chapter - August 2016

SPC Thomas A. Hudnall
Ragin' Cajun Chapter - August 2016

SPC Joel A. Frayde
Aloha Chapter - June 2016

SPC Jason L. Tighe
Aloha Chapter - July 2016

SPC Artez T. Fennell
Aloha Chapter - June 2016

CW2 Bebjamin R. Hale
North Texas Chapter - May 2016

SSG Kyle A. Ratliff
North Texas Chapter - June 2016

CW2 Matthew F. Fey
North Texas Chapter - July 2016

SGT Christopher J. Ostavitz
Ragin' Cajun Chapter - July 2016

NCO of the Month

SFC Edward T. Keopuhiwa
Bavarian Chapter - August 2016

SGT Shari D. Crump
Aloha Chapter - June 2016

SGT Jose M. Carrillo
Aloha Chapter - June 2016

SGT Andrina M. Nunez
Aloha Chapter - July 2016

DAC of the Month

GS-11 Michelle M. Prouix
Colonial Virginia Chapter - September 2016

Instructor of the Month

SSG Joshua C. Ramey
Colonial Virginia Chapter - 4th Quarter 2016

In Memoriam

John L. Middleton
 MAJ Benjamin J. Recla

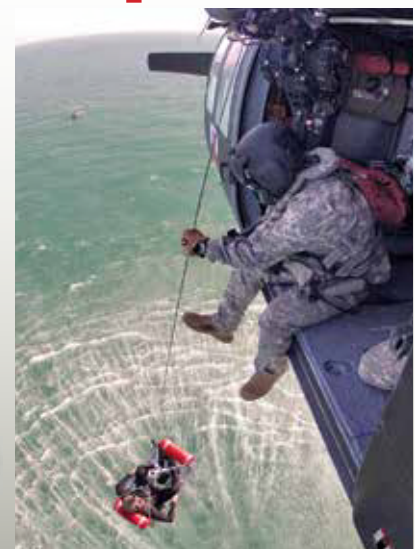
National Awards are Open... Recognize Our Soldiers !

Awards To Be Presented at the Annual Army Aviation Mission Solutions Summit:

- Joseph P. Cribbins Department of the Army Civilian of the Year
- James H. McClellan Aviation Safety
- Henry Q. Dunn Crew Chief of the Year
- 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
- Top Senior Chapter of the Year
- Top Master Chapter of the Year
- Top Super Chapter of the Year
- ASE Award
- Avionics Award
- Donald F. Luce Depot Maintenance Artisan Award

Remember to Send in Your Nominations Today!

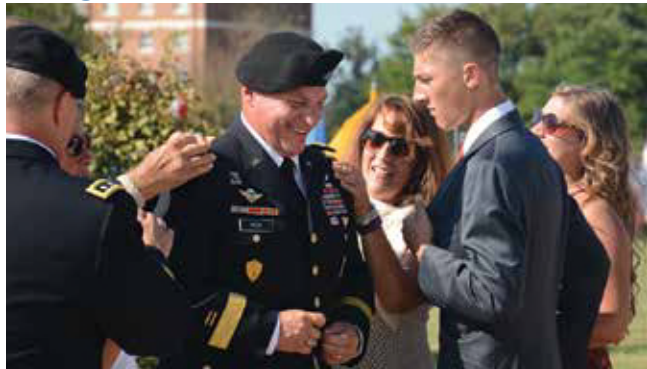
Nomination forms for all AAAA Awards are available from the AAAA National Office, 593 Main Street, Monroe, CT 06468-2806 and on quad-a.org.





People On The Move

Aviation General Officer Promotions/Assignments



U.S. ARMY PHOTO BY FORT KNOX PUBLIC AFFAIRS

MG Troy D. Kok has his shoulder boards changed to his current rank during a promotion ceremony at Flagg Field, Fort Knox, Kentucky, Sept. 7, 2016 by (l to r) his father and mother (partially visible); wife, Sara; son, Ryan; and daughter, Kaci. LTG Kevin W. Mangum (back to camera), Deputy Commanding General/Chief of Staff, U.S. Army Training and Doctrine Command, hosted the ceremony. Kok, a former commander of 11th Aviation Command, was serving at the time as the Deputy Commanding General, U.S. Army Recruiting Command. He assumed command of the 99th Regional Support Command at Joint Base McGuire-Dix-Lakehurst, New Jersey the following Saturday.



U.S. ARMY PHOTO BY MSGT BENJAMIN POLLEN, 100TH TDC

BG Jason L. Walrath, the outgoing commander of the 100th Training Division Operations Support, addresses his troops and the assembled family and friends during a Sunday morning change of command ceremony at Brooks Parade Field, Ft. Knox, KY on Sept. 11, 2016. Walrath, who had commanded the division since Sept. 2014, subsequently assumed the duties of Deputy Commanding General, U.S. Army Recruiting Command also at Ft. Knox.

Change of Command/Responsibility 449th TAB Welcomes Bishop



U.S. ARMY NATIONAL GUARD PHOTO BY SGT USA VINES, 449TH IAB

BG James C. Ernst (right), Commander, Land Component Command North Carolina National Guard, COL Jeffrey L. Copeland, LTC Joseph W. Bishop, and CSM Derwood L. Norris salute during the change of command ceremony at the North Carolina Army National Guard's Army Aviation Support Facility 1 in Morrisville, N.C., on August 7, 2016.

Bishop, who served for the last 18 years in the United States Army and Army National Guard and previously commanded the 1-130th Attack Reconnaissance Battalion assumed command of the 449th Theater Aviation Brigade from Copeland.

Change of Charter



U.S. ARMY PHOTO BY TRACEY AYERS

Fixed Wing Project Office Welcomes Sheppard

In an August 1 change of charter ceremony held at Redstone Arsenal, Alabama, BG Bob Marion, Program Executive Officer for Aviation, presented **COL Tal Sheppard** (right) with the Fixed Wing Aircraft Project Manager charter. Sheppard's most recent assignment was Product Manager for the AH-64E Apache Production and Fielding. He has served within the Program Executive Office Aviation (PEO AVN) since 2007.



U.S. ARMY PHOTO BY TRACEY AYERS

New Leadership for Non-Standard Rotary Wing Aircraft

COL Steve Clark assumed responsibility for the Non-Standard Rotary Wing Aircraft Project Office in an August 1 afternoon ceremony officiated by BG Bob Marion, the Program Executive Officer, Aviation. COL

Clark relinquished responsibility of the Fixed Wing Aircraft Project Office in a change of charter ceremony held earlier that morning. COL James Kennedy, the outgoing Project Lead, transitioned to PEO AVN headquarters.

Promotions FY2016 Captain Army Competitive Categories Selection Board Results

On Aug. 18, the Army released the results of the fiscal year 2016 captain Army competitive category selection board. AAAA congratulates the 289 Aviation lieutenants on their selection.

Seq#	Name
1758	Abrew Nate A
3693	Alexander Matthew
2752	Anderson Corbin Ch
760	Andrews Jeremy K
3360	Aylor Duncan T
3799	Bacallao Reicel
1113	Bailey Jaryd J
3787	Balkcom Kimmie C
3785	Barber Reid A
506	Barcelo Robert F
3236	Barnes John C
3575	Barr Clinton H
1809	Barrett Austin T
1561	Batchelder Jeffrey
1184	Batchelor Charles
4094	Bauchspies Kathryn

605	Becker Ryan N
3460	Beckler Christian *
1358	Benson Aaron Danie
3226	Bernier Michael J
1111	Berrigan Darren M *
3511	Best Christopher M
2307	Bochenek Matthew J
685	Bontrager Zachary
2958	Boswell Marcus T
1907	Boucher Rachelle G
3519	Bounds Joshua R
847	Bradford John P
1777	Brimmer Stuart S
264	Brockgreitens Matt
2772	Broderick Christop *
161	Broker Steven K *
586	Brown Jesse R
3641	Brown Tiara O
2458	Broyles Allen H *
898	Buck Carlton Mitch
577	Buck Samantha N
3139	Budke Margaret M
723	Bullard Edward Lat
2460	Burk Benjamin M
305	Burns Bryan N
3529	Burns Killian P *
3148	Cahalan Zachary M
2677	Candelmo Francesco
579	Carlson Stephen M

Continued on next page

People On The Move

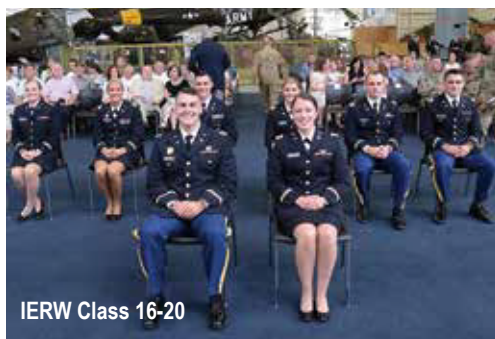
- | | | | | |
|----------------------------|---------------------------|----------------------------|---------------------------|---------------------------|
| 165 Carroll John B | 3347 Gallup Matthew G | 3789 Kennaley Jonathan | 411 Nutter Joshua M | 3329 Sollenberger Steph |
| 2303 Carson Sean M | 1122 Gantt James T | 3000 Kennedy Daniel R | 2534 Oconnor Michael A | 9 Stark Scott I |
| 3618 Carter William J * | 1114 Gardner Ryan J * | 3280 Kern Nicholas J | 3470 Oeschger Lee M | 2651 Steffy Barton R |
| 549 Castan James G | 3299 Geer David B | 2660 Kibler Dak A * | 2295 Olson Aaron C | 518 Strunck James L |
| 84 Castillo Joel | 2821 Ghidotti Matthew E | 3102 Kilroy Kyle J | 1628 Onderdonk Adam E | 2671 Sustaita Javier Jo * |
| 3621 Cavender Jacob W | 865 Gibbons Gregory E | 240 King James C III | 3525 Osei Emmanuel K | 3634 Tappe Jacob Smith |
| 3351 Cho Sungi | 3303 Giori Antonio M | 3325 Kirk Cory R | 2836 Ott Thomas R | 2994 Taylor Emily M |
| 684 Clausi Courtney M * | 304 Golden Michael J | 2989 Knoetgen Philip J | 709 Paducha Adam Ross * | 1733 Terlizzi Jacob D |
| 404 Coker Ryan V | 1115 Graffeo Joseph E | 3445 Ko Timothy S | 3213 Pak Wayne D | 2492 Terrigno Matthew D |
| 654 Concannon Jarrett * | 2963 Green Harrison G | 3143 Kohne Maighdlin Q | 1755 Partridge Ryan D | 2130 Tersigni Victor D * |
| 765 Cooper Christopher | 513 Gulmire Richard C * | 3628 Kopacka Nickolas T * | 3632 Payne Spencer Robe | 152 Theroux Jonathan D |
| 3204 Covell David D | 484 Gustafson Andrew J * | 4119 Kraft Alexander Ge | 3358 Pcsolyar Joshua S * | 2391 Thorne Alexis A * |
| 2956 Cowell Craig E | 2034 Halvorson Kristoph * | 2516 Krehel Joseph D | 2463 Peck Tyler W | 3079 Thurston Nicholas |
| 2793 Crist Karl A | 3916 Hammel Christopher | 2755 Kroll Brett C | 2461 Perlik William W | 3214 Tisson Brewster J * |
| 3176 Croford Clifford * | 412 Hancock Clayton J * | 3168 Lamb Tyler S | 1826 Petterson Daniel L * | 3013 Tol Sean V |
| 3995 Cully Andrew G | 174 Hansen Cale A * | 2961 Lambert John M * | 3369 Philie Mathieu P | 3635 Tobin Michael Anth |
| 2092 Cumming Nathaniel * | 3994 Harrell Joshua R | 3339 Lane William T | 1735 Pisano Matthew P | 795 Todd Ermine * |
| 2035 Cunningham Bryan A | 2409 Heisler John J | 1193 Larson Alexander E | 403 Polczynski John D | 2983 Tucker William C |
| 2200 Dagg Benjamin D * | 3480 Hildebrand Robert | 1767 Liddle Patrick Rob | 1194 Porter Daniel J | 2774 Tumolillo Brian W |
| 2998 Daily Mitchell C | 3098 Hill Amy J | 3293 Lowe Adam C | 3436 Potter Benjamin L | 3104 Turi Mario D |
| 2217 Dakitsee Date Ortha + | 1192 Holt Mark A + | 149 Luehrmann Matthew * | 496 Powell Matthew L * | 2028 Udermann Matthew T |
| 3976 Davis Jonathan S | 3617 Homan Larry J * | 3441 Madany Jeremy H | 3425 Prior Daniel E | 3346 Ulises Kyle M |
| 2357 Davis Joshua H | 2229 Hopkins Matt H | 895 Magee Jonathan I | 1624 Ramsey Ronald L * | 1631 Vanaken Christophe |
| 2292 Derick Chantelle D | 3274 Houle Katherine E | 2982 Malachosky Christo * | 2984 Randel Brennan W | 2693 Vandervort Max D * |
| 2769 Detrempe Benjamin * | 1047 Howard Chad Monroe + | 98 Maldonado Mario A | 585 Reid Dorothy M | 4175 Vanslyke Christoph * |
| 2589 Donahoo Brett A * | 191 Humenick Gregory T | 1129 Mangram Joe E | 629 Reidy Shawn R * | 604 Vaughn Kathryn A |
| 178 Doucette Meagan E | 2185 Huppert Timothy Sh | 3876 Mann Shane T | 3393 Renn Eric C | 413 Veness Jacob A |
| 2943 Doumont Patrick J * | 3307 Hurd John B * | 2459 Manning Jack H | 2100 Richards Paul D | 669 Wagoner Warren M * |
| 3479 Drake Chad J | 642 Huttemann Michael | 1944 Marshall Rebecca M * | 644 Rincon Fernando | 2747 Waldeck Joshua D * |
| 2612 Dubey Rakesh | 1176 Hyer Colton M | 655 Martin Weston L | 2194 Roberts Daniel P * | 2766 Walters Joseph S |
| 3364 Duncan Alex J | 2627 Imhoff Grant R | 2941 Massengill Lawrence * | 3271 Roberts Jake W | 396 Warner Nathaniel D |
| 2110 Dye Liza B | 3331 Jackson Kenneth P | 105 Matteson Christoph * | 3536 Rogers Lyle D | 2395 Wasno Justin E |
| 1630 Dyksterhouse David | 3268 Jakub Michael I | 2198 McDermott Collin A * | 512 Roper Dennis W | 3287 Waterman Cody D |
| 3232 Eck Andrew W | 2823 Jasien William T | 1807 McGillicik Alexande | 2838 Rosendahl Douglas | 3800 Waters Robert J |
| 308 Endres Adam M * | 784 Jeffers Michael Fr * | 2078 McIntyre Russell I | 550 Rowden Jared M * | 536 Webb James C |
| 2730 Erickson Brent T | 3152 Jenkins James H | 1515 McMahan Alexander | 3063 Rowland Stephen T | 3207 Webb Ryan M |
| 43 Ernst Graham D | 626 Jennings Brandon R | 2172 Miller Benjamin J | 2848 Rupert Bryan E | 1710 West Andrew P |
| 3917 Esslinger Andrew G | 1575 Jerschina Jacob | 2919 Miller Ethan P | 1064 Rutanhenningham Sea | 1771 White Evan M |
| 2936 Essary Clinton Lan * | 523 Johnson David J * | 606 Moder Harrison M | 2003 Sanders Nathan A | 158 Whitley Matthew D |
| 3240 Evanko Jeffrey A | 3231 Johnson Paul M | 3103 Moore Erik A | 3790 Satterfield Hunter | 2758 Whittington James * |
| 3113 Farnelli Erin L * | 1061 Johnston Zachary P | 3036 Morenus Brian J * | 3112 Savoie Phillip L * | 530 Wilcox Joshua G * |
| 3275 Fath Grant S | 1921 Jones Cody M | 2670 Moropoulos Christo | 2140 Scardina Peter M | 2676 Williams Chandler + |
| 2945 Federwisch Tyler G | 552 Jones Michael G | 1934 Morrisett Mark A | 3233 Schlatter Peter J | 625 Winkelbauer Todd J * |
| 3045 Fettinger Nicholas * | 1102 Joyce Jared Joseph | 659 Mudge Michelle C | 1546 Schuessler Richard | 686 Wood Jacob A |
| 3430 Fiore Carolyn B | 192 Just Joshua Arron | 526 Murdock Scott T | 544 Schwartz Albert J | |
| 1542 Fischer Kenneth N | 1181 Kade Charles F | 527 Murphy Kevin M | 3082 Scutta Cody G | |
| 2645 Flesher Neal James | 122 Kanopkin Laura Kat | 103 Myers John Robert | 4006 Seely Analyse E | |
| 1014 Floresolmeda Luis | 1063 Karlen Jonathan P | 3320 Nagy Andrew G * | 3043 Shelton Jacob N | |
| 3507 Franchino Vincent | 3877 Kator Daniel J * | 2737 Najera Erik John * | 1958 Smith Christina L | |
| 589 Frye Spencer A * | 3238 Kazmer Nicholas P | 1191 Neville William J | 2147 Smith Joshua S | |

* = AAAA Member
+ = Life Member

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 the Initial Entry Rotary Wing (IERW) Aviation Basic Officer Leadership Course (ABOLC) and Aviation Warrant Officer Basic Course (AWOBC) at the U.S. Army Aviation Center of Excellence, Fort Rucker, AL.

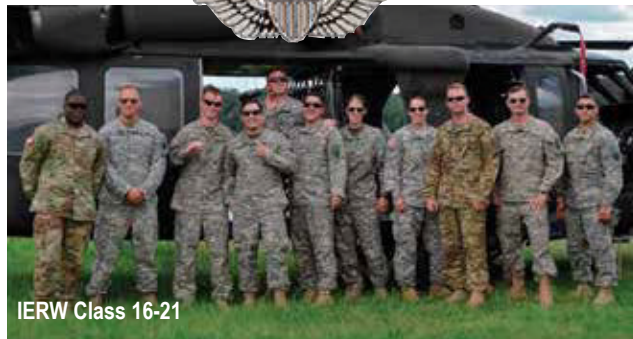


IERW Class 16-20

8 Officers, Aug 4
ABOLC 16-20
LT Jacob Shores – DG
LT Katelyn McDonough * – HG
LT Andrea Bagley *
LT Lindsey Danilack *

LT Timothy Iuchs
LT Tanya Oliver
LT Robert Snook
LT Jake Steckler

29 Officers, August 18
ABOLC 16-21
LT Charles Voss – DG
LT Robert Grimmer – HG
LT Cody Baker *



IERW Class 16-21

LT Brady Barton
LT William Bookout *
LT Erin Boyd
LT Robert Brown
LT Alfredo Chavez

LT Alicia Fitzsimmons *
LT Tyler Murray
LT Victor Ripley
LT Kenneth Yacynych *



People On The Move

Flight School Graduates

Continued

AWOBC 16-21

- WO1 Eric Scharf * – DG
- WO1 Shane Alcock * – HG
- WO1 Matthew Cammer * – HG
- WO1 Anthony Carter
- WO1 Michael Cluskey *
- WO1 Ervin Cuarteros
- WO1 Richard Culver
- WO1 Brittany Grams
- CW2 Zachary Jansen
- WO1 Roman Kim
- WO1 Cody Martz
- WO1 Nicole Mariani Narvaez
- WO1 Andrew Parke
- WO1 Robert Perry *
- WO1 Nicholas Petrucci
- WO1 Nathan Schofield
- WO1 Colby Sutterfield

30 Officers, Sept. 1

ABOLC 16-22

- LT Peter Winterton – DG
- LT Aaron Johnson – HG
- LT William Morgan – HG
- LT Aaron Barragan *
- LT Jason Binkowski
- LT Austin Burton
- LT Kaleb Dahl
- LT John Hart *
- LT James Haycraft *
- LT Tori Kissner
- LT Alexander Smith
- LT Trevor Thein *
- LT Jeffrey Wilson
- LT Matthew Wright

AWOBC 16-22

- WO1 David Bugner – DG
- WO1 James Cardin – HG
- WO1 Marc Moran * – HG
- WO1 William Duggan *
- WO1 Andrew Frazier
- WO1 Matthew Freeman
- WO1 Tyler Freyburgher
- WO1 Paul Glankler
- WO1 Jerry Jordan
- WO1 Dustin Kelley *
- WO1 Dominique Lewis
- WO1 Nicholas Oredson *
- WO1 Roy Page



IERW Class 16-22



IERW Class 16-23

- WO1 Giang Pham
- WO1 Adrian Ramsden
- WO1 Colby Williams *

30 Officers, Sept. 15

ABOLC 16-23

- LT Matthew DiPinto – DG
- LT Kristin Hugo – HG
- LT Logan Ridge – HG
- LT Will Acton
- LT Emily Anderson

- LT Tyler Brown
- LT Robert Burroughs
- LT Maxson Faulkner
- LT Matthew Goss
- LT Cameron Lyons
- LT Whitney Marrs
- LT Kyle Miller *
- LT Stephen Mulherin
- LT Angel Colon-Nunez
- LT Brittany Simpson
- LT Michael Snyder

LT Matthew Webster

AWOBC 16-23

- WO1 Michael Stalker – DG
- WO1 Joshua Hensley – HG
- WO1 Derek Nelson – HG
- WO1 Richard Anderson *
- WO1 Christopher Bergloff
- CW2 Matthew Clum
- WO1 Garrett Dailey
- WO1 Abel Diaz
- WO1 Justin Frazier

WO1 Andrew Hartman *

- CW2 Levi Lindley
 - WO1 Kevin Lohoefer
 - WO1 Jarrette Neal *
 - WO1 John Nowadly
 - WO1 William Owens *
 - WO1 Danny Randolph
 - WO1 William Schryver *
- 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 in August, 2016.

AH-64 Attack Helicopter Repairer (15R)

Class 024-16

- PVT Eric David Cawthorne – DG
- PV2 Anissa Leeann Fuerte – HG
- PFC Daniel J. Colombovern

- PVT Dominic Andrew Delvecchio
- PV2 Mauricio Perez
- PV2 Rafael D. Sanchez Del Cruz
- PV2 Haylee Marie Shaw
- PV2 Clodaljon Pineda Silverio

Class 025-16

- PFC Zachary James Haight – DG
- PV2 Anthony Dale Shreve – HG
- PV2 Nathan Ahmed Bandaoui
- PV2 Gage Anthony Childers
- PV2 Michael Christopher Clark
- SPC Steven Lesley Garrett
- PV2 Paul Daniel Henry
- SPC Joshua Evan Mccooy
- PV2 Dallas Alan Morgan
- PV2 Jaime Eusebio Munoz, Jr.
- PV2 Benjamin James Preston

Class 026-16

- PVT Edgar Abel Del Rosal – DG
- SSG Hani Aziz Z. Al Mutairi
- PV2 Ryan Matthew Hunter
- PFC Anthon Dewayne Lee, Jr.
- SGT Brian Clifton Moss
- PVT Natalee I. Orourec

- PV2 Kyle Riley Reyes

Class 027-16

- PVT Tristin W. Houghtaling – DG
- PVT Jacob T Boyer
- PFC Denight David
- PVT Aaron Christopher
- PVT Joel D Gronholdt
- PVT Delfin Augusto Lopez
- PVT Josiah Daniel Lopez
- SPC Andrew Clay Mirtes
- PVT Kolton Laine Tyler
- PVT Alexander Lewis Yerger

Class 511-16

- PFC Scott Allen Mccraw – DG
- PVT Samuel Trevon Wren – HG
- SPC Brandon Scott Banton
- PVT Richard Gomez
- SPC John Richard Lopez
- SPC Damon Alex Lucas
- PVT Anthony John Panariell
- SPC David Lee Sigares
- PV2 Sheen R. Techur
- PV2 James Leon Wilson, IV
- SPC Zachary Allen Xavier

Class 512-16

- PVT Algenis A. Romeroc – DG
- PV2 Noah J. Tackmann – HG
- PFC Julius Asonganyi
- SPC William Cody Benefield
- PVT Eshwin J. Garcia
- SPC John Nathaniel Gutierrez
- PVT Keenan Daquan Harrigan
- SPC Navid Jahanpour
- PVT Jalon Christopher Johnson
- SPC Jacob Roy Nichelson
- SPC Venancio Vince Santos
- SPC Raju Shrestha

UH-60 Helicopter Repairer (15T)

Class 041-16

- PV2 Alex J. Berg – DG
- PVT Brett R. Applegate
- PV2 Spencer S. Asher
- SPC Denfield M. Barnard
- PV2 Tristen G. Cantu
- PV2 Tad A. Deffenbaugh
- PV2 Casey W. Lewis

- SGT Nicholas A. Lofgran
- PV2 Buddy M. Murtagh
- PVT Yurian Quinterotapia

Class 042-16

- PV2 Robert Wathern – DG
- PFC Nicole C. Vandenberg – HG
- PV2 Riley S. Benham
- PFC Murray A. Cannon
- PV2 Jonathan V. Cortes
- PVT Jesse Fernandez
- PV2 Brandon G. Gross
- PV2 Isaiah P. Kronemeyer
- PV2 Donald J. Lehmkuhl
- PVT Seaver J. Sink
- PV2 Blake W. Turner
- PV2 James D. Wilmot

Class 043-16

- PV2 Alexander A. Gillenwalters – DG
- PFC Keagan M. Larson – HG
- PV2 Maximilian Carter
- PV2 Arthur Andres Cervantes
- SGT Jason Michael Collins *
- SPC Marcus Wayne Desjardins
- PV2 Austin Clay Eldridge

ALL PHOTOS: US ARMY PHOTO FORT RUCKER/PUBLIC AFFAIRS

People On The Move

PV2 Trevor Allen Garey
Class 044-16
 PV2 Thomas J. Troupe Jr. – **DG**
 PV2 Matthew Zane Pierce – **HG**
 PV2 Ashle Nicole Fagans
 PV2 John David Lewis, II
 PFC Luis Jesus Lopezvega
 SGT Timothy William Miezwa
 PV2 Thomas Harley Morrison
 SPC Carolyn A. Olson
 SPC Chauncey Lm Redcrow
 PV2 Levi Edgar Streeks
 PV2 Hawke Adaire Wheelock
 PV2 Brett Hunter White
Class 045-16
 SPC Sin Y Lee – **DG**
 PFC Aaron Tyler Nishiura – **HG**
 SPC John Eric Lopez
 PFC Juan Jesus Machucaperez
 PVT Rafael John Melkumian
 SGT Dennis Russel Meyer
 PV2 Kevin Riley Morgan
 PV2 Ismael Schelmettytorres
 PV2 Zackary Michael Shaddock
 PV2 Travan Guyalton Smith
 PV2 Tristan William Snyder
 PFC Darion Blake, Whetstone
Class 046-16
 PFC Justin Tyler Berggren – **DG**
 PV2 Chad Jared Gray – **HG**
 PV2 Shedrit James Bealer, Jr
 PV2 Nehemiah Allen Clipp
 PFC Kasey Rae Davis
 SPC Karly Jo Eyre
 SGT Sameer Bakr I Fallatah
 PFC Garibaldy Felizgarcia
 PV2 Jordan Ace Frias
 PV2 Nathaniel Douglas Hollins
 PV2 Matthew Gregory Kolkow
Class 047-16
 PFC Mark Gomes, Jr. – **DG**
 PV2 Kevin Underwood – **HG**
 SGT Bandar Alharbi
 PV2 Thorin Brant
 PFC Justin Hall *
 PFC Drew Magill
 SGT Dennis Meyer
 SPC Hunter Wallace
 PV2 Christian Winslett
Class 048-16
 PFC Tanner J. Trimble – **DG**
 PV2 Cobi Lane Norris
 SPC Ryan Michael Stanley
 PV2 Ka Davis Thao

CH-47 Medium Helicopter Repairer (15U)
Class 016-16
 PFC Chad Michael
 Deschamps – **DG**
 PFC William George Baczkowski
 PV2 Dakota Lee Beebe
 PV2 Tyler Mitchel Bellmccreary
 PFC Brian Alan Case
 PV2 Todd Darren Cook, Jr
 PV2 James Allen Cothran
 PV2 Clark John Doll
 SPC Johnny Michael Green, II
 PV2 Pedro A. Quilessantiago
 PV2 Eric James Roncase
 PFC Sean Torrez Sellars
Class 017-16
 PV2 Spencer W. Cameron – **DG**
 PVT John W. Williams, IV – **HG**
 SPC Michael Thomas Bertucci

SPC Christina Marie Blomberg
 PV2 Jacob Peter Corazza
 SPC Joseph M. Floresgomez
 PV2 Seth Daniel Forsythvillegas
 PVT William Thomas Kidder
 PFC John Peter Lombardo, II
 PV2 Dalton Alexander Terry
Class 018-16
 PV2 Kendall J. Nelson – **DG**
 PV2 Matthew F. Parent – **HG**
 PV2 Austin James Maxwell
 PV2 Juan Gerardo Nieto
 SPC Jose Antonio Olanayala
 PV2 Anthony Brandon Ortega
 PV2 Seth Alexander Peterson
 SPC Robert Anthony Smith
 PV2 Mikael William Whelan
 PV2 Eric Ryanscott Zehner
Class 506-16
 PFC William J. Delacerna – **DG**
 PV2 Nathan D. Alabran – **HG**
 PV2 Anthony Aleman
 SGT Nicholas Anthony Arellano
 PV2 Christopher Duayne Bellew
 PV2 Andrew Shawn Chilton
 PV2 Joseph Brody Cooney
 PV2 Keolamana N. Corpuz
 PV2 Alan Curtis Fournier
 PV2 Owen Patrick Henwood
Class 019-16
 PV2 Marlondann A. Turla – **DG**
 PV2 Julian A. Boyd Jr – **HG**
 PV2 Ashley Jr Etipson
 PV2 Pablo R. Guzmansanchez
 PVT Cody N. Kazuma
 PV2 Marco Antonio Macias
 PFC Timothy James Moore, Jr
 SPC Adegboyega D. Oduyemi
 PFC Jorge T. Sarmientocanales
 PV2 Ronald Lee Struble
 PV2 Samuel Clinton Walker

Aircraft Powerplant Repairer (15B)
Class 009-16
 PFC Bradley J. Fulton
 PV2 Morgan B. Hataway
 PFC Kenneth C. Miller
 SPC Felipe Rodriguez

Aircraft Powertrain Repairer (15D)
Class 007-16
 PV2 Thomas P. Aiken
 PFC Jayanta Bauchi
 PV2 Jeffrey D. Berard
 SPC Eric J. S. Chang
 SPC Kyle M. Kreider

Aircraft Electrician (15F)
Class 505-16
 PVT Daniel B. Harrington
 PVT Marianna L. Desalvo
 PVT Austin J. Howald
 PVT Corey W. Kainer
 SPC Michael W. Kempner
 SPC Troy L. Semsch
Class 506-16
 PVT Parker R. Peterson
 SPC Steven L. Prueff
 PV2 Joshua A. Richardson

SPC Illium Z. Williams
Aircraft Structural Repairer (15G)
Class 009-16
 PVT Joshua P. Hinman – **DG**
 PV2 Michael D. Balducci
 PVT Steven Farina
 SSG Robert W. Knight Jr.
 SPC Kyle N. Neher
 SPC Ivan Torres
 SPC Erica Whitt

Aircraft Pneudraulics Repairer (15H)
Class 008-16
 PV2 Joshua M. Rave – **DG**
 SPC Travis L. Brillowski – **HG**
 SPC Nicholas J. Pedercini
 PFC Rajhswon D. Rancier

Avionics Mechanic (15N)
Class 504-16
 PV2 Katherine Silva – **DG**
 PVT Ashleigh N. Bowling – **HG**
 PVT Jerry A. Christal
 PVT Ryan C. Douglas
 SPC Brook C. Moran
 PVT Casey M. Mossholder
Class 505-16
 PVT Nathaniel S. Mix – **DG**
 PVT Nicholas Z. Strobe – **HG**
 PVT Charles A. Brantley
 PFC Jayson Delgado Ortiz
 PFC Andrew W. Griffey
 PVT Conner P. Lolio
 SGT Zachary J. Madren
 PVT Cody R. Price

AH-64D Armament/Electrical/Avionics Repairer (15Y)
Class 013-16
 PV2 Alvin James Gordon – **DG**
 PFC Justice Cole Downing
 PV2 Colby Chandler Dunlap
 PV2 Rogelio Balas Emperador
 PV2 Matthew Shane Forstrom
Class 014-16
 PV2 Quentin M. Harrington – **DG**
 PV2 Ryan S. Matthews – **HG**
 PV2 Michael Hunter Mcneese
 SPC Jacob T. Meadows
 SPC Davy Nibeowre Meda
 PV2 Augtin Michael Patton

PV2 Ramon A. Ramirez Baez
 SPC John Charles Sisson, Jr.
Class 015-16
 SPC Denis Lim – **DG**
 PV2 Kevin Dewayne Cruse – **HG**
 PV2 Marcus Ayala
 SPC Joo Young Choi
 SPC Adrian Fajardo
 PVT Dylan Lamar Isbell
 PV2 Randy Christopher Ivey
 SPC Kyusuk Jang
 PV2 Brittany Ann Zalucki
Class 016-16
 PV2 Parker D. Stokes – **DG**
 PV2 Austin John Steiner – **HG**
 PV2 Anthony Salvatore Pinto
 PV2 Airan Jesus Sanchez Reyes
 SPC Tokin Shrestha
 PFC Hao Tian
 PV2 Bradley Jacob Wegner
 SPC Michael Alden Yelmgren

Aviation Operations Specialist (15P)
Class 16-026P
 PVT Silverio Joseph – **DHG**
 PFC Walters Hunter – **HG**
 PFC Cao Nam
 PFC Turner Chandler
 PFC Skidmore Sean
 PFC Gonzalez Emmanuel
 PFC Stigler Yasmin
 PVT Vazquez Steve
 PVT Nolan Ryan
 PVT Chavez Erick
 PV2 Figueroa Miguel
Class 16-027P
 PFC Smith Janessa – **DHG**
 PVT Rosario Mariely
 PVT Lay Alexander
 PVT Seibold Joshua
 PFC Dullen Brittaney
 PV2 England Carson
 PVT Rahe Jason
 PVT Sandoval Estephanie
 PFC Victor Simone
Class 16-028P
 PVT McClain Chenyia – **DHG**
 SPC Barnes Maria – **HG**
 PFC Bielawa Alex
 PV2 Schalm Mykul
 PFC Blatt Quinn
 PFC Sandoval Sequoyah

PFC Spencer Nariah
 PVT Rios Shawn
 PV2 Francis Lladaejo
 PV2 Ricks Treviance
 PV2 Munoz Hector
 PFC Campbell Kened
 PVT Lee Courtney
 PV2 Caldwell Amanee
 PV2 Bravo Vanessa
 PVT Tyree Jamie

Air Traffic Control Operators (15Q)
Class 013-16Q
 PVT Lin Justin – **DHG**
 PVT Green Kelsea A.
 PV2 Haines Anthony M.
 PVT Lewis Derek D.
 PVT Mendez Atalo J.
 PFC Mishler Joseph W.
 PVT Polidoro Shane C.
 PVT Wilson Timothy S.
 PVT Young Ashley J.
Class 16-502Q
 PV2 Rogers Danny
 SPC Juan Jose
 PV2 Odell Joshua
 PFC Vige Kortney
Class 16-019Q
 PVT Schell Corey – **DHG**
 PVT Harvest Dequerious
 PVT Suarez Eduardo
 PVT McNeil Zariah
 PV2 Johnson Leroque
 PVT De Tejada Edgar
 PV2 Sitzes Austyn
Class 16-020Q
 PFC Gilbert Gregory
 PV2 Quinters Jeffrey
 SPC Winters Connor
 PFC Tlumac Jeffrey
 SPC Sanders Glenn
 SPC Silitonga Ehud
 PVT Soto Cesa

DHG – Distinguished Honor Graduate
 DG – Distinguished Graduate
 HG – Honor Graduate
 * = AAAA Member

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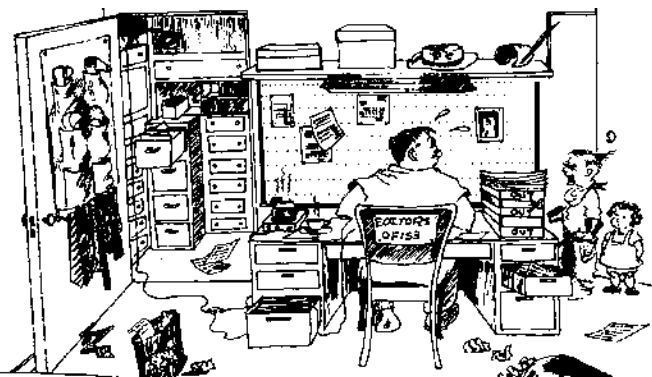
  

Art's Attic

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 October 31, 1991

Air Assault Roundtable

Carlisle, PA., May 22-23, 1991, convened at the Army War College was a roundtable discussion series, "Air Assault – The Strategic Vision." Army War College Commandant, MG Paul G. Cerjan, hosted the event. Objective: Explore and discuss roles, missions, fresh ideas, concepts and structure of the Air Assault Division for the future. Initial presentations included



the historical perspective by LTG Harry W.O. Kinnard (Ret.), former commander of the 11th Air Assault Division (Test); DESERT STORM operations, by MG Binford Peay, Commander of the 101st Airborne Division (Air Assault) and MG Rudolph Ostovich, Commander of the Army Aviation Center, elaborating on future systems and structures. Among the plethora of participants were Generals Hamilton H. Howze and Robert M. Shoemaker, both retired; LTGs John J. Tolson, Robert R. Williams and Richard T. Knowles, as well as retired MGs George S. Beatty and George W. Putnam.

AEL Industries, Inc.

AEL Defense Corp. has been awarded a \$1.3 million contract from AVSCOM. Order is for the production of AN/AVR-2 Laser Detecting Set (LDC) kits.



Photographing a Bear

Major Joseph A. Durso, Aviation Brigade S-3 for the 2nd Aviation Brigade, Dhahran, Saudi Arabia, is pictured last July with the Bear himself, General H. Norman Schwarzkopf. The brigade had been assigned to fly General Schwarzkopf during his farewell tour.



50 Years Ago October 10, 1966

Fortunate One in Vietnam

PFC Richard K. Duhamel, 2nd Battalion, 28th Infantry, finished digging in for the night. He bed down, covered by his poncho. Suddenly a resupply helicopter swooped over, propeller wash sheering off the poncho. Duhamel recovered and settled in. More helicopters, more propeller gusts. Duhamel gathered his belongings, moved 15 yards, and claimed new territory. As he settled in, a grenade popped in the position he so recently occupied. "Glad I moved," muttered Duhamel. "It would've made a sizable hole in my poncho."

Army Aviation Aces

Army Aviation's unheralded "Aces" rack up daily kills in South Vietnam with a wide variety of weapons. The Hueys have carried machine guns, grenades, rockets and wire-guided missiles.



More Cranes

In September, the Army Aviation Material Command in St. Louis, MO., issued a new contract to Sikorsky Aircraft in Stratford, CT. The order calls for 18 CH-54A Flying



Crane helicopters, with deliveries set to commence in May 1967. Value of said order, \$22.3 million. The Flying Crane, with a lift capacity greater than ten tons, has proved effective in Vietnam. Just four CH-54As have been

committed to the conflict; yet... the Cranes have retrieved 111 downed aircraft, amounting to \$345.8 million.



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 2018 induction is June 1, 2017

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

Captain
Jon E. Swanson



Army Aviation Hall of Fame 2004 Induction



CPT Jon E. Swanson distinguished himself on Feb. 26, 1971, while flying an OH-6A in support of South Vietnamese forces operating in Cambodia.

Swanson was tasked with pinpointing the positions of two enemy regiments. While flying at treetop level he engaged enemy bunkers with concussion grenades and machine-gun fire. After expending all his heavy ordnance, he marked an enemy machine-gun position with a smoke grenade and directed a Cobra gun ship attack. The weapon remained intact, however, and Swanson immediately engaged and destroyed it.

Under fire from a second weapon, Swanson engaged the position, marked the target, and directed a second Cobra gun ship attack. While flying toward a third enemy emplacement his aircraft exploded in the air and crashed to the ground, killing him.

Swanson's courageous actions resulted in at least eight enemy killed and the destruction of three enemy antiaircraft weapons. His extraordinary heroism and devotion to duty are in keeping with the highest traditions of military service and reflect great credit upon himself, his unit, and the United States Army. He posthumously received the Medal of Honor for these actions.



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"The U.S. Army had corrosion problems with the transmissions of their Chinook fleet; we had the solution. We fly Chinooks so we know the problems and how to fix them."

Paul Leach is the Director of Military Maintenance for Columbia Helicopters. With 5 years of military service and 23 years with Columbia, he's the man for the job. Paul is a native of Oregon, decorated Gulf War Vet, and one of the over 800 proud employees that separate Columbia Helicopters from the rest.

"Seeing our solutions make a difference for the folks who defend our freedom, that's what I get excited about. There is no better feeling than knowing we're helping our soldiers come home safe."

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Knowledge to Maintain.*

Read Paul's full story and others
at colheli.com/ourstory/faces.