Flightfax

Number 67 July 2018 Online Newsletter of Army Aircraft Accident Prevention

Closing Out Summer, Safely

Summer represents increased risks to our Soldiers both on and off duty as a result of more intensive training, higher recreational activity, and the turmoil of the PCS season. Every year at this time, we see an increase in fatalities from preventable mishaps. Additionally, while our Army has made tremendous strides over the last 10 years reducing mishaps and fatalities through Soldier discipline and leader diligence, our numbers over the last 18 months show a reversal of that positive trend. I urge all of you to step up your risk management efforts throughout the rest of the summer.

At the U.S. Army Combat Readiness Center, we conduct and review fatal mishap investigations and there is a common thread in most of them. Accidents occur when we fail to execute tasks to standard. For most every task, we have well-defined procedures and standards designed for the conditions in which we expect to operate. Failing to execute to standard makes even the most benign task more dangerous.

This is especially true in Army motor vehicle operations, where more than half of our on duty fatalities occur. ***(Note: A Combat Aviation Brigade has more vehicle rolling stock than a Brigade Combat Team)***. A recent fatal mishap at the National Training Center saw a Soldier crushed between a vehicle and a trailer while preparing to move; the Soldiers did not execute basic standards, no leaders were present, and the vehicle chocks and technical manuals were unopened in the trailer BII storage box. A similar accident in a motor pool saw another Soldier fatally crushed because the Soldiers performing the trailer operations were not trained or equipped properly. In that tragic case, multiple leaders were observing, but not supervising, as the fatality occurred right in front of them.

There are fundamental reasons why we fail to follow standards — inexperienced Soldiers don't execute to standard, Soldiers are not

trained to standard, leaders don't enforce the standard, or we fail to execute proper risk management. I challenge each and every one of you to emphasize the following:

Standards and discipline. Train to standard. Enforce the standard. When Soldiers train and execute to standard they are less likely to fall prey to hazards and risks. Don't let Soldiers execute a task for which they are not trained. Leaders must know the standards, and they must be present and actively supervising

A quick note on Aviation operations: We have suffered seven Class A mishaps thus far in FY18. Of those, three occurred after landing during ground taxi operations where we literally drove the aircraft into fixed structures. All three instances share common causal factors: complacency, poor crew coordination, and failure to execute published procedures or tasks to standard. If you have not yet received the USACRC's "close-call" vignette based training, which highlights these and many other "near-miss" lessons learned, please contact MAJ Travis Easterling at travis.j.easterling.mil@mail.mil or DSN 312-558-2932. We will send a team to you to execute the training.

at the point of execution. Assign your most experienced Soldiers to the highest-risk operations, implement mitigation controls, and place leaders at the point of execution.

Motor Vehicle Operations. This is the single-highest payoff focus area for leaders and Soldiers to prevent loss. Learn and implement the recently revised Army Regulation 600-55, The Army Driver and Operator Standardization Program; select and empower your Master Drivers; and emphasize your driver licensing and training programs. Demand use of the operator's manual and operating procedures for all motor vehicle operations.

The Secretary of the Army recently rescinded two well-known safety-related motor vehicle requirements as part of his "Prioritizing Efforts - Readiness and Lethality" Directives: the Travel Risk Planning System (TRiPs) and the Army Accident Avoidance Course. Removal of these requirements in no way diminishes the criticality of active Soldier and leader risk management during motor vehicle operations. The Secretary's intent is to reduce the administrative burden on Soldiers and leaders at the company level to eliminate distractions and focus on readiness. In doing so, he is in fact emphasizing the importance of face-to-face leader and Soldier interaction and hands-on training and risk management, rather than relying on outdated computer-based training and virtual e-interaction.

The summer also represents the highest risk period for our Soldiers and families during off-duty activities, which account for an overwhelming majority of our total fatalities. Over the last five years, we've lost an average of 33 Soldiers in July, August and September to off-duty accidents. That is nearly a flight company's worth of readiness lost, often senselessly due to poor judgment and a wholesale absence of proactive risk management. A majority of all off-duty fatalities are a result of private motor vehicle mishaps, both four-wheeled vehicle and motorcycle accidents. ***(Note: Motorcycles are a disproportionate killer of our Soldiers: Leaders must know and mentor our motorcycle riders, and riders must adhere to the skills, judgment and behavior taught at our motorcycle safety courses)***. Just like on duty, motor vehicle operations off duty are the best point of emphasis to prevent loss. I cannot overstate the importance of risk management while driving or planning to drive.

This year, we have also lost Soldiers to drowning while kayaking, privately owned weapons discharges, pedestrian vehicle collisions, pedestrian with train collisions (three total), weightlifting, snowboarding, and a household fire. As you would expect, many of these involved alcohol. Moreover, we have well surpassed off-duty fatalities to date compared to FY17. We must help our fellow Soldiers recognize and avoid the hazards that lead to these tragedies and instill a risk management mindset at all times, both on and off duty.

I ask your consideration with the following:

Manage off-duty activities the way we manage on-duty risks. Inculcate risk management into everything you do. Every operation, every mission, every day, every activity — identify, assess and mitigate the hazards and risks you expect to encounter in that endeavor. This will create a culture of risk awareness and risk management that preserves readiness.

Leaders must focus on junior leaders. While we all assume it's our youngest Soldiers who are at highest risk when off duty, the fact is that so far this year, more than 55 percent of our private motor vehicle fatalities have been sergeants and above. The leaders we expect to enforce standards across our formations are not doing so in their own off-duty activities. Mentor them and ensure they are setting the right example.

Check out the Off-Duty Safety Awareness Presentation on the USACRC website, **https://safety.army.mil/OFF-DUTY/Home-and-Family/Off-Duty-Safety-Awareness-Presentation-2018**. It is a comprehensive tool to help leaders and Soldiers think through and manage off-duty hazards.

Thank you in advance for your efforts.
Readiness Through Safety!

COL Christopher W. Waters
Deputy Commander
U.S. Army Combat Readiness Center

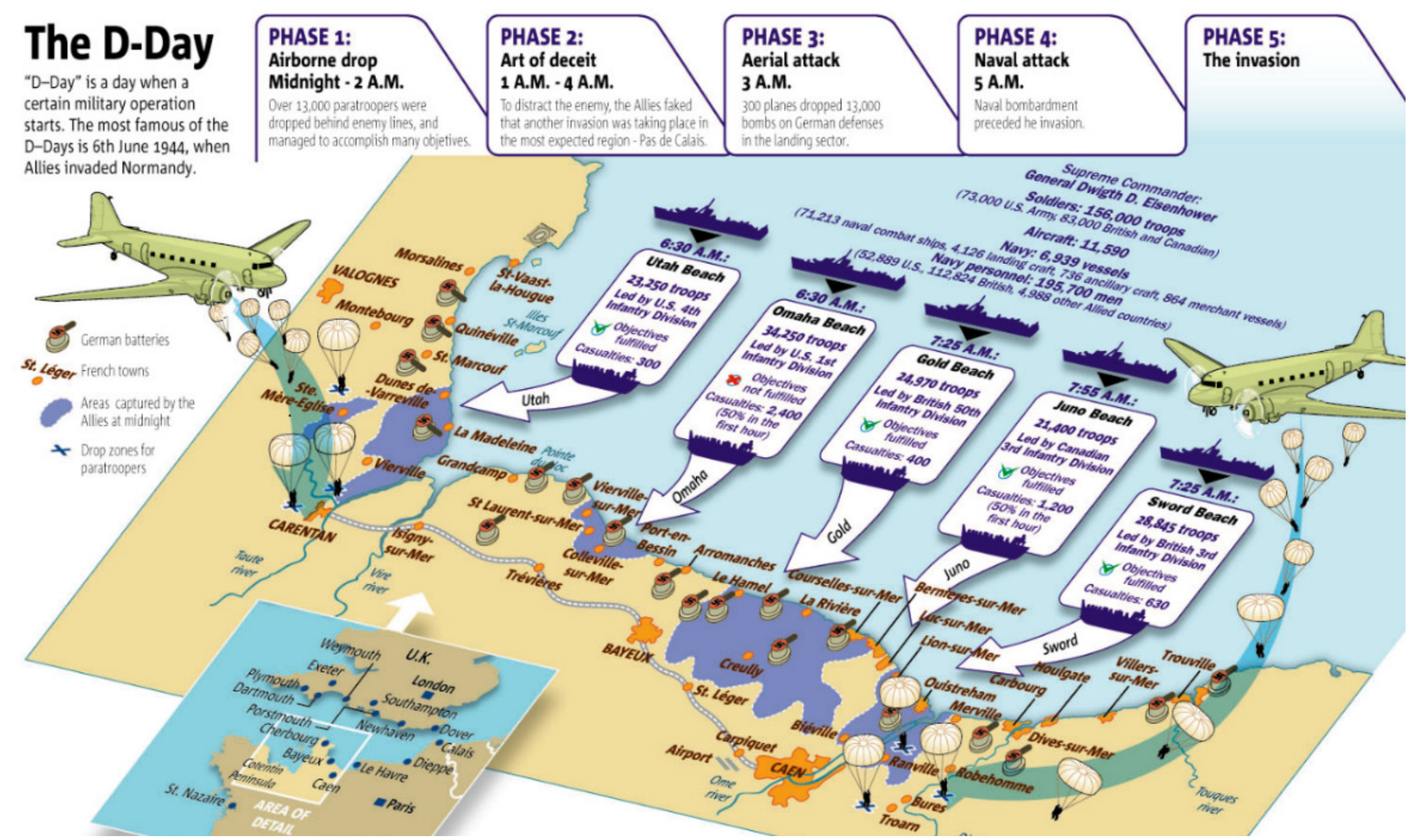
Actions on the Field: *Training the Combined Arms Team for 21st Century Operations with a Reflection on 20th Century Errors*

Over the last 70 years, a rapid modernization of aircraft and artillery targeting systems has resulted in an equally rapid development of airspace coordination measures. So why are airspace coordination measures important to the Artillery, Air Defense and Aviation Branches? Airspace control is an integral part of risk management. Commanders at every echelon continuously assess risk of conflicts among airspace users and consequences of these conflicts, then they determine which consequences or conflicts they can accept based on an operational environment.[1] Simply stated, the primary focus is risk mitigation.

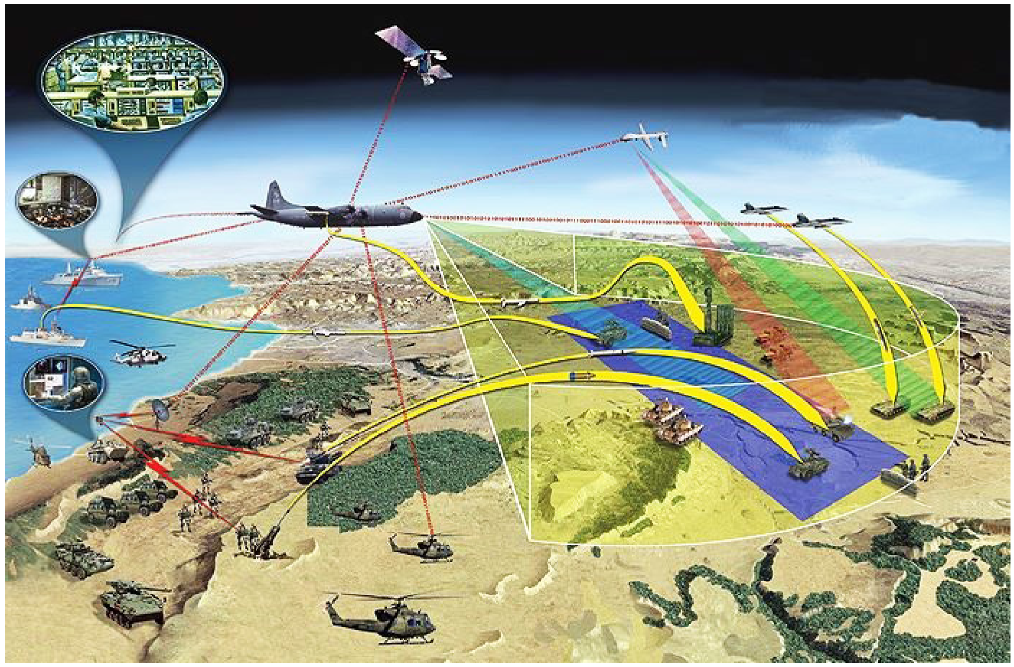
The big sky, little bullet theory is just that — a theory. If this theory was our risk mitigation procedure for the coordination of close air support (CAS), Fires, suppression of enemy air defense (SEAD) and aviation operations, then we'd all have a massive problem on our hands. Artillery and aviation elements are coordinated efforts that involve multiple agencies operating in a finite airspace. To maximize these practically invisible efforts, we must somehow capture this information and display it to the human eye. Historic military tragedies such as Operation Jubilee (1942) and Kasserine Pass (1943) identified major synchronization failures and the requirement for airspace coordination to maximize the joint combined arms efforts.

A quick look at these operations will paint a picture of ill-timed invasions and unsynchronized efforts to prepare the battlefield. At Dieppe, France, during Operation Jubilee, the Canadian-led invasion had air, ground and naval assets available; however, poor planning and mishandling of resources resulted in more than half of the 6,000 troops becoming casualties in just a few hours. This operational error quickly identified the need for preliminary artillery support, including aerial bombardment.

A subsequent and even larger operation, codenamed Operation Overlord, would attempt to mitigate such high casualty rates. Leaders focused on a bigger picture, a maximization of efforts in what would one day be called a modern-day "Joint Airspace Management and Deconfliction" program. The D-Day planners analyzed all aspects of the operation, ranging from weather, lunar illumination and ocean tides to synchronized artillery from battleships, CAS from B-26 bombers and



airborne operations from C-47s behind enemy lines. These collective efforts would be essential for the full-frontal attack on the beaches of Normandy to be effective. Not surprisingly, on June 6, some 132,000 men were successfully transported by sea and another 24,000 by air. Preliminary naval bombardment from five battleships, 20 cruisers, 65 destroyers and two monitors commenced at 0545 and continued until 0625, while the infantry assaulted the beaches at 0630.[2] Not bad considering there was no Advanced Field Artillery Tactical Data System (AFATDS) or Tactical Airspace Integration System (TAIS) upon which to rely.



For the folks at the battlefield coordination detachment and all the way down to the battalion fire support officers, providing a clear airspace picture is their primary duty. The planners at all levels interface with one another, and their duties include exchanging current intelligence and operational data, support requirements, coordinating the integration of Army forces (ARFOR) requirements for airspace control measures (ACM), fire support coordination measures (FSCM) and theater airlift. The challenge? Providing the ground force commander with valid information to enhance mission command. It is the art of integrating assets ranging from the M-777 Howitzers, Army AH-64 Apaches, Marine F-18 Hornets, and Air Force B-2 bombers to satellite-based intelligence, surveillance and reconnaissance (ISR). Air defense and air management (ADAM) cells have been the latest development to maximize airspace use and minimize fratricide.

So where does the rubber meet the road? An aviation battalion can be a ground force commander's most important asset in terms of decisive action (DA) on the battlefield. Imagine for a moment air assaulting an infantry company over 100 miles through rough terrain, Chinooks lifting a battery of M777 howitzers, attack helicopters establishing multiple SBFs and F-18s providing overhead air superiority in support of a larger operation hundreds of miles away. It goes without saying that chances of successful maneuver are greatly improved with fire support and rapid air movement.

Planned in a vacuum, these assets could easily deconflict among themselves using internal communications and a hand-drawn sketch of the area. Unfortunately, the complexities of battlefield airspace operations do not allow for this "perfect-world" scenario. For these incredible capabilities to be used effectively (and safely), a multitude of systems are available that can combine pre-planned targets, air corridors and engagement areas.

Integrated and interoperable computer systems, such as the AFATDS and TAIS, create the airspace picture for the ground force commanders in the tactical operations center (TOC). Although highly dependent on connectivity, they are the most reliable tools for a well-planned attack, defense or stabilization operation at the theater level. By successfully using these systems, the staff can provide commanders with a clear airspace picture which allows them to assess risks involved with the use of fires and aviation assets. If only Vice Admiral Lord Mountbatten had the AFATDS when he planned Operation Jubilee, his chances of a successful operation may have drastically improved! ■

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[1] *Field Manual 3-52, Airspace Control*

[2] *Whitmarsh, Andrew (2009). D-Day in Photographs. Stroud: History Press. ISBN 978-0-7524- 5095-7*

Aircraft Combat Damage Reporting Initiative

The Aviation Survivability Development and Tactics (ASDAT) team is the Army component for the Joint Combat Assessment Team (JCAT) which is funded by the Joint Aircraft Survivability Program (JASP). JCAT is tasked to investigate and report on aircraft combat damage incidents to assess the threat environment for operational commanders and collect data to support aircraft survivability research and development. Reporting and collection of aircraft combat damage increases the affordability, readiness and effectiveness of tri-service aircraft through the joint coordination and development of survivability technologies and assessment methodologies.

Collection and reporting of aircraft combat damage is vital to improving the survivability of both current and future aircraft. Aircraft combat damage and loss data is used by Army and Joint agencies for development and procurement decisions and is maintained by the Survivability/Vulnerability Information Analysis Center (SURVIAC). Design standards derived from the analysis of aircraft combat damage incurred in Vietnam was used to integrate improved survivability standards into the current Army aviation fleet. This resulted in a significant survivability capability compared to Vietnam-era aircraft designs. There have been numerous improvements to the survivability of Army aircraft over the last 15 years. A few examples of these improvements include the fielding of the common missile warning system (CMWS), CMWS fifth sensor, infrared strobes and additional fire detection sensors. Additionally, aircraft combat damage data can provide commanders with the information needed to help determine if current tactics, techniques and procedures (TTP) are effective or if new TTP, are needed to decrease the susceptibility of being successfully engaged by the enemy.

Currently, Army Regulation 95-1 requires unit commanders to ensure aircraft combat damage incurred during missions is reported, recorded and submitted for assessment. Additionally, aviation mission survivability officers (AMSO) and maintenance organizations are required to record aircraft combat damage caused by weapons and weapons effects. Recording via photographs of exterior and interior damage and any effected components should be taken prior to repair or removal of components. The unit AMSO forwards all photographs and the

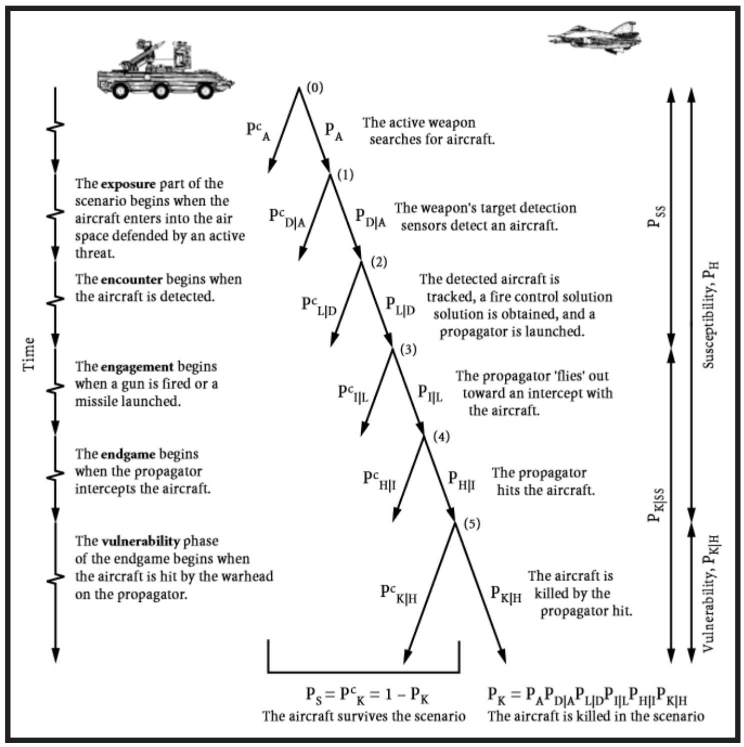


Image: The Fundamentals of Aircraft Combat Survivability Analysis and Design, Second Edition, Ball.

estimated cost of damage (upon completion) to the U.S. Army Aviation Center of Excellence (USAACE) ASDAT team via secure Internet protocol router network (SIPRNet). Detailed procedures for threat determination, required format and security procedures may be found on the USAACE SIPRNet page at https://www.usaace.

army.smil.mil and/or the ASDAT team SIPRNet link at https://www.usaace.army.smil.mil/asdat/.

On 29 November 2016, the Joint Requirements Oversight Council (JROC) reviewed and approved a doctrine, organization, training, materiel, leadership and education, personnel, facilities and policy (DOTmLPF-P) change recommendation for aircraft combat damage reporting. Approved doctrine changes include updating joint doctrine to establish an automated mission assessment tool to report threat surface-to-air fire (SAFIRE) engagements, aircraft combat damage and combat casualties from these events. Additionally, the JROC directed that joint doctrine be updated to include requesting JCAT support in conjunction with deploying aviation assets. The joint doctrine updates are scheduled to be completed not later than (NLT) the first quarter of FY19.

The JROC memorandum also included the approval to create a universal joint task (UJT) for aircraft combat damage reporting that employs JCAT across the full range of military operations. Currently, there is no formal training for the field regarding aircraft combat damage reporting and collection. However, ASDAT is working concurrently with the UJT effort to develop an Army task for aircraft combat damage reporting and collection. This task is scheduled to be integrated in the AMSO course at Fort Rucker, Alabama, during FY18. Additionally, the current JCAT training curriculum (JCAT Phase 1, 2, and 3) has been directed to be formally adopted for training U.S. Army, Navy and Air Force aircraft combat damage assessors.

In addition to establishing the requirement for an automated mission assessment tool, the JROC memorandum directs that data reporting elements be added to the baseline mission assessment tool (MAT). However, current efforts are underway to replace the MAT. The use of the Combined Information Data Network Exchange (CIDNE) or Web Enabled Temporal Analysis System (WebTAS) will provide two functions. First, it will expand and standardize the reporting criteria across all air operation centers (AOC) for each combatant command (COCOM). The use of this software will increase the capabilities of querying the database and automate the population of Tier I data to the Department of Defense (DoD) database. The current DoD database is static and hard to query. However, transitioning to CIDNE or WebTAS will greatly improve the ability of querying the DoD database by research and development personnel. Second, the enhanced query capabilities can be used by intelligence personnel to leverage the SAFIRE database in support of (ISO) of current operations. The use of CIDNE and/or WebTAS will provide a great improvement over the current system.

The upcoming release of AR 95-1 has been updated to reflect the changes outlined in the JROC memorandum. Changes include further delineation of unit responsibilities for aircraft combat damage reporting, as well as when a centralized assessment is required. The update to AR 95-1 also mandates units collect aircraft combat damage for minor aircraft combat damage incidents and report it when trained personnel are not available and when a centralized assessment is not required. Aircraft combat damage collection by the unit was the impetus for establishing the Army task. The training will provide unit AMSOs with the requisite skills required to report and collect aircraft combat damage.

The Army has led the way on aircraft combat damage reporting. ASDAT appreciates the level of effort and emphasis the field has placed on the aircraft combat damage reporting process. As the DOTmLPF-P is updated, it will help solidify requirements which will generate improvements in the aircraft combat damage reporting process. The results of these efforts will continue to positively impact the survivability of the current Army aviation fleet, as well as integrate survivability features on future Army aircraft. ■

CW5 Scott Brusuelas is the chief of the Aviation Survivability Development and Tactics Team (ASDAT), headquartered at the U.S. Army Aviation Center of Excellence, Fort Rucker, AL.

Mishap Review - AH-64 Controlled Flight into Terrain

While conducting a night hasty attack under visual meteorological conditions and using the modernized pilot night vision sensor in an AH-64E, the mishap pilot-in-command (PC) transferred the controls at terrain flight altitudes to the co-pilot gunner (CPG). The CPG placed the aircraft into an unrecoverable flight attitude, causing the aircraft to impact the ground at a high rate of speed and descent, resulting in fatal injuries to the crew and destruction of the aircraft.

History of Flight

The mishap flight was a night movement to contact in support of an infantry seizure of a forward operating base. The mishap attack weapons team (AWT) mission coverage window was planned from 2000-2400 hours. The mishap crew began its duty day at 1400 hours. The crew conducted the team mission brief and was unable to conduct detailed planning due to limited information. The AWT did not know the enemy situation, so they could only analyze potential battle positions near the mission area. The supported unit requested a coverage change to 2000-0400 hours. The air mission commander (AMC) gave a negative response, as this went past the crew duty day hours. Both crews required use of backup aircraft as faults were found on the primary aircraft. The crews remained on standby and continued to rescue mission updates until they were directed to launch at 2320 hours. The AWT departed and, once near the supported unit location, was able to make contact. The AWT was given targets to identify, which were expected enemy vehicles. While transitioning to battle positions, the mishap aircraft as trail gradually climbed and then entered a descent, impacting the ground.

Crewmember Experience

The PC had 91 hours in series and 1,033 hours total time. The pilot (CPG) had 143 hours in series and 226 hours total time.

Commentary

Improper transfer of controls or improper crew coordination at low altitude can be catastrophic. It is imperative that when crewmembers experience a situation requiring transfer of controls, they also transfer situational awareness. In this case, the pilot on the controls should have transferred the controls to the CPG and announced that his pilot night vision system had failed. The inability of each crewmember to understand the situation and what responses/reactions are expected and necessary to continue safe flight cannot be overstated. While one of the crewmembers experienced a malfunction which impacted his ability to see, he did not relay this information to the front-seat CPG. Errors in communication contributed to the outcome of this mishap. Just as when a crewmember loses visual references due to a degraded visual environment or inadvertent instrument meteorological conditions, this loss of reference puts the crew in an emergency situation while operating close to the ground. Announcing the situational information to the other crewmembers is paramount to the crew reacting with the proper actions necessary to maintain safe operation of the aircraft. Additional situational information will assist the pilot taking the controls in making the proper flight control inputs to put the aircraft in the appropriate profile to prevent CFIT. ■

Class A - C Mishap Tables

Manned Aircraft Class A – C Mishap Table										as of 19 Jul 18
	Month	FY 17					FY 18			
		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities
1st Qtr	October	0	0	7	0		1	2	7	0
	November	1	0	4	0		0	1	3	0
	December	1	0	4	2		1	0	7	0
2nd Qtr	January	1	0	3	0		1	1	3	2
	February	0	1	4	0		0	0	1	0
	March	0	1	6	0		0	1	11	0
3rd Qtr	April	1	0	6	1		1	2	4	2
	May	1	0	7	0		1	0	5	0
	June	0	2	5	0		1	1	5	0
4th Qtr	July	0	1	8	0		1	0	3	
	August	3	3	4	6					
	September	1	1	7	1					
	Total for Year	9	9	65	10	Year to Date	7	8	49	4
	Class A Flight Accident rate per 100,000 Flight Hours									
	5 Yr Avg: 1.14		3 Yr Avg: 1.09			FY 17: 0.99			Current FY: 1.24	

UAS Class A – C Mishap Table									as of 19 Jul 18
	FY 17					FY 18			
	Class A Mishaps	Class B Mishaps	Class C Mishaps	Total		Class A Mishaps	Class B Mishaps	Class C Mishaps	Total
MQ-1	10	2	4	16	W/GE	3	1	2	6
MQ-5	5	0	1	6	Hunter	1	0	0	1
RQ-7	0	18	39	57	Shadow	0	7	16	23
RQ-11	0	0	1	1	Raven	0	0	0	0
RQ-20	0	0	0	0	Puma	0	0	0	0
SUAV	0	0	0	0	SUAV	0	0	0	0
UAS	15	20	45	80	UAS	4	8	18	30
Aerostat	6	0	1	7	Aerostat	4	2	1	7
Total for Year	21	20	46	87	Year to Date	8	10	19	37

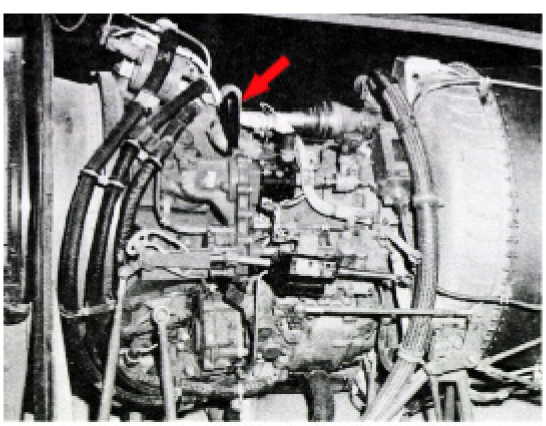
Blast From The Past: *Articles from the archives of past **Flightfax** issues*

VOL 3, NO. 25, 16 April 1975 mishaps for the period of 28 March-3 April 1975

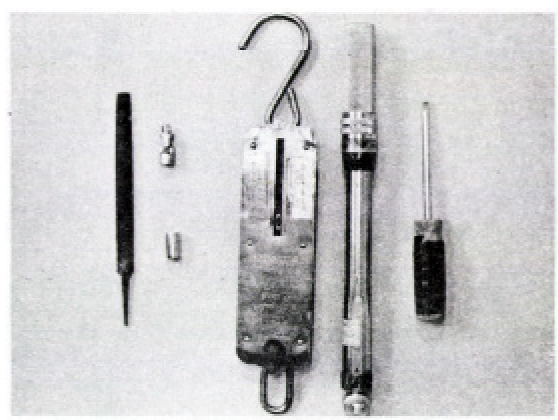
FOD Control - Everybody's Job

A professional aviation mechanic's toolbox is a model of organization. In the first place, it helps him get the job done faster and more efficiently, with less wear and tear on the nervous system. As far as FOD is concerned, the toolbox is a model before the job begins and after it is over. Everything is where it should be-in the box or in actual use. No pliers or screwdrivers will ever get a turbine or a control in trouble if they are safe and accounted for, in their proper slot, and under lock and key when the aircraft rolls out to the flight line.

Toolbox inventory is one of the heaviest weapons maintenance personnel have in the war on FOD. These cases emphasize the fact that not just maintenance personnel, but crew chief and pilot alike must always be on the alert for foreign objects. Generally, when an aircraft crashes because a tool is left where it shouldn't 'be, nobody knows who was responsible. Except for one man. He knows, but he doesn't like to think about it. ■



These Foreign Objects were found inside a UH-1 tail boom during a preflight inspection. The pilot found these objects by placing his ear close to the tail boom hitting the bottom side, and listening for rattling noises.



An 18-Inch Screwdriver was found in this UH-1 engine during a technical inspection. The screwdriver had been there for several weeks, apparently left by a mechanic during a daily inspection. At least five different pilots had flown the UH-1 and it had been through two previous intermediates before the screwdriver was discovered.

Flightfax Forum Op-ed, Opinions, Ideas, and Information

(Views expressed are to generate professional discussion and are not U.S. Army or USACRC policy)

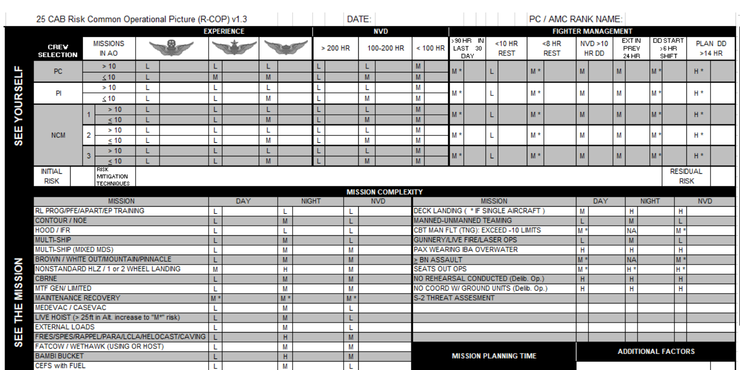
When Standardization isn't the Standard—Confusion

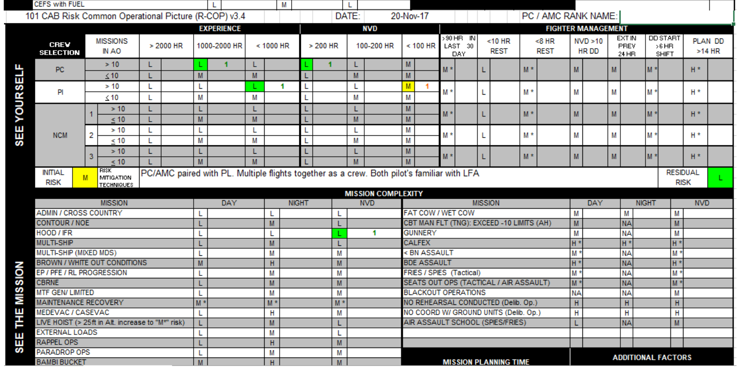
Current Operations

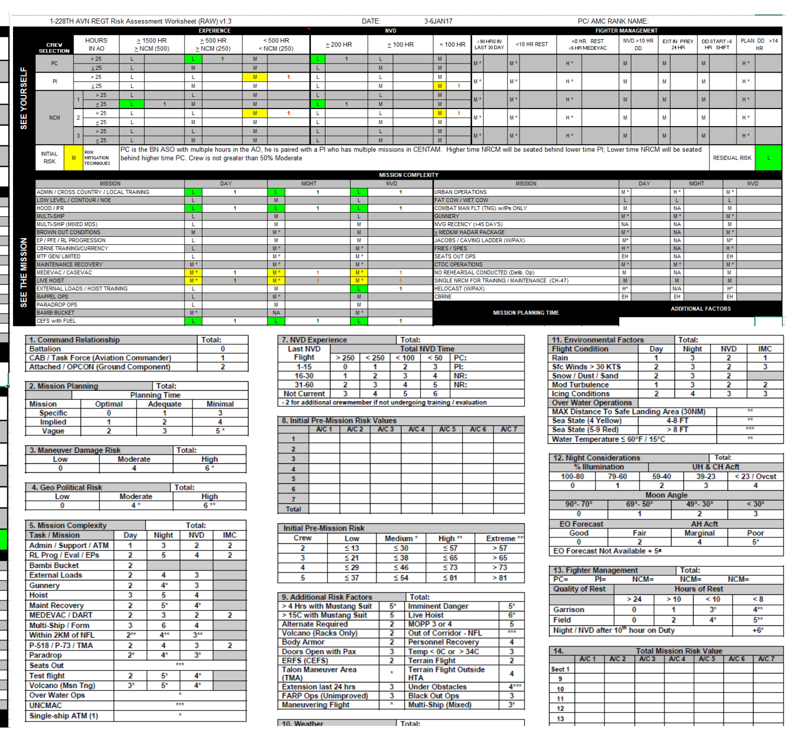
The risk assessment for aviation does not represent risk accurately and creates confusion for aviators, mission briefing officers and commanders. This paper presents a comparison of the various versions of the risk assessment worksheets (RAW) utilized throughout Army aviation. Developing one standardized RAW throughout Army aviation will alleviate confusion when aviators, mission briefing officers and commanders change units or operate with other combat aviation brigade assets. The RAW should be a digital form that can be reviewed and updated as the mission dictates. Incorporating a chapter in Army Techniques Publication (ATP) 5-19, Risk Management, with instructions of the new RAW would eradicate confusion. Additional local information should be added to the unit's safety standard operating procedure (SOP).

Risk is defined as probability and severity of loss linked to hazards.[1]

Using ATP 5-19, Risk Management, as an outline, commanders are responsible for the development of local briefing checklists and RAWs. This allows the commander to assign risk levels to a particular mission set or task. Risk levels are used to elevate certain mission sets or tasks to higher levels of approval or visibility.[2] This allows each aviation unit to have a unique RAW. Not only are the worksheets unique, but the naming convention of the worksheets are also unique. Units have created RAWs, Electronic Risk Assessment Work Sheets (ERAWs[3]) and Risk Common Operating Pictures (R-COPs[4]). The worksheets are developed using Microsoft Excel or Microsoft Office. These worksheets sometimes use enumeration to annotate risk, while others incorporate colors. Some are in landscape, others in a portrait orientation. The sections of each worksheet is similar, each having a "See Yourself," "See the Mission" and "See the Environment" section. If one places all the risk assessments side by side, many differences are apparent. Each have the same end result, to identify risk and mitigate the risks if possible. Below are few examples:







Note: All example R-COPs were current at the time of the writing of this article.

The forms appear similar, but each designates risk levels for certain items differently.

According to Army Regulation (AR) 95-1, Flight Regulations, Appendix B-1:

"Accident data shows that there are a number of critical elements called crew-error accelerator profiles such as when lunar illumination is less than 23% and less than 30° above the horizon, visibility is obscured, total flight time is less than 500 or more than 2,500 hours or aircrew duty day is longer than 12 hours with four hours of flight time."

Each worksheet does evaluate risk for individuals on the aircrew. However, the **risk worksheets do not evaluate risk the same. This area should not be an area-specific section. This area should be a section in which historical accident data is the basis.** The data across Army aviation should be the same when evaluating the aircrew for a mission.

Reviewing each R-COP "See Yourself" section, it shows that risk is evaluated for each aircrew member but each R-COP values flight hour experience differently. A pilot in command (PC) and a nonrated crewmember (NCM) both with 499 hours and greater than 25 hours in the AO would be a **moderate** on one R-COP and a low on another. Moving through the "See Yourself" on the R-COP, the night vision device (NVD) section is also evaluated on the R-COPs differently.

Continuing across, the fighter management section is next on the R-COP. Fighter management is understood by each aviation unit differently. There are many interpretations of what fighter management is and how it applies to risk.

Moving down the R-COP, the next section is "See the Mission." Each unit describes a certain task that is going to be performed during that particular mission. If the mission requires live hoist, depending on which R-COP used, the risk level changes on paper. The differences do not only apply to hoist. Throughout the various R-COPs, risk levels change depending on the unit. Each unit includes the basic tasks every rotary-wing aviator will conduct while training or completing an air mission request (AMR). However they assign risks that are sometimes drastically different from one another. In 2016 and 2017, the Army aviation community was involved in two Class A hoist accidents. **Using a digital R-COP**, the form could have been updated to incorporate a higher risk value or ensure the Safety of Flight messages were read and understood by the crew.

The stress of replacing a unit while in Afghanistan or working with another aviation unit can be reduced by creating one digital aviation risk assessment worksheet (dARAW). During the 2015 deployment, C/6-101st MEDEVAC Company arrived six weeks earlier than the rest of the 101st Combat Aviation Brigade (CAB). The MEDEVAC company fell under the 82nd CAB. The 82nd CAB utilized one version of an R-COP, but it was different than the version used by the 101st CAB.

Another example is when stationed in Honduras, an Army National Guard (ARNG) unit was assigned to conduct operations in Belize. This ARNG unit had their own risk assessment at home station. While conducting operations however, this unit would use the 1-228th Aviation Regiment's R-COP for the duration of their operations. This meant the aviators would have to learn a new form, format and instructions prior to flying. Why not remove a variable and create one version of an R-COP?

Implementing a dARAW used by every aviation unit would remove confusion. After an aviation accident, the aviation branch safety office or U.S. Army Combat Readiness Center could update the dARAW version and risk levels. In the hoist example, post-accident findings could have increased risk to a higher level, ensuring the aircrew understood the SOF[5] message. ATP 5-19 should also include the instructions for the dARAW, mirroring the chapter for Deliberate Risk Assessments. The unit's safety SOP would then supplement the ATP with local policies.

The argument might be made that standardizing the aviation RAW will inhibit commanders. I believe standardization of the risk assessment and creating a dARAW will enable commanders. This will allow them to accurately assess risk. The risk levels assigned to each crewmember in relation to total flight hours should be the same no matter where that aviator is operating. Historical accident data should dictate the risk levels. While most unit R-COPs assign a low or moderate risk when performing a live hoist, the two Class A accidents involving a hoist within an 18-month span could be cause to increase the probability from seldom to occasional.

Another argument against an Army-made product might be that flight hours can be tied into locally made products. Pre-loading the flight hours of each crewmember is an excellent idea, but this relies on someone updating the product on a regular basis. These products are usually password protected, and if that person has transitioned out of the unit, the password is normally transitioned with them. In this case, the data on the local product becomes inaccurate and needs to be corrected once printed out.

Standardize the Army aviation RAW:

• The instructions for all risks assessments should be removed from unit standardization SOP and placed in an appendix in ATP 5-19.

• Create a digital risk assessment, update quarterly and following post-accident analysis, applying higher risk levels to identified accident causal factors.

• Incorporate SOF messages into the dARAW to ensure the widest dissemination of the information.

Standardization will allow commanders, aircrews and mission briefing officers to accurately assess the risk for each flight, utilizing a standardized system which additionally allows real-time modification of risk level based on current mishap factors-related data. The Army runs on standardized operations, which give the overmatch necessary to defeat the threat. It is time to standardize the RAW, which will minimize confusion for aviators and mission briefing officers and provide field commanders with the most accurate risk management for their aviation units conducting training and combat operations. ■

[1] ATP 5-19, page Glossary - 3, 2014

[2] AR 95-1, page 9, 2014

[3] ERAW - Electronic Risk Assessment Worksheet

[4] R-COP - Risk Common Operating Picture

[5] SOF - Safety of Flight

Works Cited

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CW3 Emilio Natalio
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3-501st AHB, 1AD

Hot Topics

High Scrap Rate!!! Please return unserviceable parts to the supply system with the correct containers to avoid unnecessary damage to the functional components.

UH60 A, L and M
Hydraulic Motor Pump Unserviceable Return Request Scrap Rate: 46%
NSN: 1650-01-224-6682, Part No. 4730-20E
Required Shipping Container: NSN 8145-00-522-6907, Cost: $100.00 per container

UH60 A, L and M
Hydraulic Servo Valve Unserviceable Return Request Scrap Rate: 22%
NSN: 1650-01-263-7870, Part No. 70410-02540-102
Required Shipping Container: NSN 8145-00-301-2987, Cost: $224.00 per container

UH60 A, L and M
Auxiliary Valve Assembly (UH60 Critical Item) Unserviceable Return Request Scrap Rate: 22%
NSN: 1650-01-399-5104, Part No. 52900-2
Required Shipping Container: NSN 8110-00-254-5722, Cost: $119.99 per container

UH60 A, L and M
Hydraulic Accumulator (UH60 Critical Item) Unserviceable Return Request Scrap Rate: 20%
NSN: 1650-01-222-4316, Part No. 3197170-5
Required Shipping Container: NSN 8145-00-536-4925, Cost: $403.00 per container

UH60 A, L and M
Hydraulic Accumulator (UH60 Critical Item) Unserviceable Return Request Scrap Rate: 20%
NSN: 1650-01-250-3767, Part No. 0204-0004
Required Shipping Container: NSN 8145-00-536-4925, Cost: $403.00 per container

UH60 A, L and M
Primary Transfer Module Hydraulic Servo Valve Unserviceable Return Request Scrap Rate: 15%
NSN: 1650-01-162-5035, Part No. 60900-11
Required Shipping Container: NSN 8145-00-522-6907, Cost: $100.00 per container

For additional information contact: Heri Rodriguez
UH60 Airframe Division OFC: 256-313-4832
DSN: 897-4832
heriberto.rodriguez2.civ@mail.mil

Fleet Updates and Notes of Interest

It's About Time:

After years of research and development, the Aviation Engineering Directorate (AED)-Propulsion Division got it right. Along with three filter manufacturers, AED has designed, tested and qualified drop in replacement "robust" hydraulic filters (H-60, H-64, and AGPU) that exceeded everyone's expectations. Legacy filters are made from cellulose (paper) and fiberglass following a 40 year old specification. Propulsion challenged this outdated specification and advanced to stainless steel applications. This new stainless steel filter stands up to extreme temperature changes, pressure pulsations, and captures contamination at the extremely small particulate level unheard of in earlier filter designs. A complete drop in replacement! What does this mean to aircraft maintenance? Hydraulic components such as pumps, primary servos, SAS Actuators and Tail Rotor Servos quit leaking, remain on wing longer which improve aircraft readiness and operational costs. As an example of the success of this new robust filter, the following data was collected at Fort Rucker where 34,000 flight hours of testing was conducted:

Failed Component	Legacy Filters		New Filters		Percent Increase in MTBF
	No. of Failures	MTBF (Hrs)	No. of Failures	MTBF (Hrs)	
Hydraulic Pump	285	705.40	25	1389.48	97.0
Primary Servo	310	648.51	25	1389.48	114.3
SAS Actuator (Pitch Trim)	157	1280.50	19	1828.27	42.8
SAS Actuator (Roll)	34	5912.90	4	8684.28	46.9
SAS Actuator (Yaw Boost)	47	4277.42	5	6947.42	62.4
Tail Rotor Servo	69	2913.60	7	4962.44	70.3

The new filter cost is a little more but this filter saves components and is a complete AED Approved drop in replacement.
This filter can be ordered immediately: Part Number MIL-DTL-8815/32 NSN: 1650-01-601-1254

Matthew Boenker
Avion, Solutions Inc.
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Propulsion Division Fuels and Hydraulic Branch RDMR-AEP-S 256.313-9117 - office
256.509-8572 - mobile
256.885-4274 - home

Mishap Briefs of July 2018

Attack Helicopters

AH-64

D Model– Aircraft #2 MRB made contact with the tail rotor system during ground maintenance run-up, associated with reported, partial separation of the blade droop stop. (Class C)

D Model– Post flight inspection revealed damage to the #2 nose gearbox (NGB) cowling, following suspected bird strike. Preliminary ECOD is $53K. (Class C)

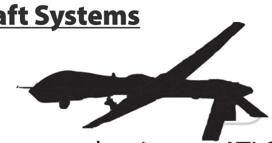
Utility Helicopters

UH-60

L Model– Aircraft sustained damage upon landing subsequent to an in-flight emergency. Class A damage initially reported due to airframe damage. (Class A)

L Model– Main rotor blade made contact with trees as crew conducted NVG training flight (terrain flight landing/takeoff). Aircraft was landed without further incident. No injuries were sustained. (Class C)

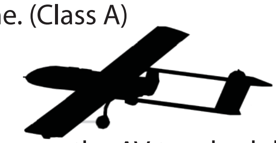
Unmanned Aircraft Systems



MQ-1

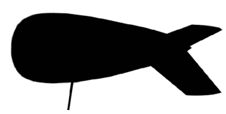
B Model– AV 316 was conducting an ATLS takeoff at CCFL for MOSP payload functional check flights. All operations normal up to and through initial rotation when AV appears to have entered "FLIGHT PLAN" mode descending to the ground in a turn impacting the ground approximately 45' off runway centerline. The AV remains on CCFL flight line/school property. On site recovery team has secured the crash site at this time. (Class A)

RQ-7



B Model– Upon recovery, the AV touched down approximately 150 feet early causing a hard landing. The main landing gear separated from the fuselage causing the AV to skid upon the runway and come to a rest on the payload. No personnel were injured. (Class C)

Aerostat



PTDS

Aerostat sustained damage upon contact with the ground during reported conditions. (Class C)

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