# Flightfax

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**Senior Leaders,**

During the past five fiscal years, a discernable trend has emerged that shows the risk for Army Aviation mishaps is highest during the fourth quarter. We've suffered 40% of our aviation Class A mishaps during this window, with almost half of those mishaps occurring in the month of August alone.

We're rapidly approaching that point now. The Army Chief of Staff is also our Army's senior aviator. Gen. McConville released the message on page 2 to the force highlighting both hazards and risk mitigation measures. These include:

- Managing transitions
- Understanding the environment
- Managing crew mix
- Being present as leaders

As always, my team stands ready to help. Please contact me with questions or concerns and we will support.

**People First - Winning Matters!**

**BG Andy Hilmes**
***Commanding General***
***US Army Combat Readiness Center/Director of Army Safety***

UNITED STATES ARMY
THE CHIEF OF STAFF

To the Soldiers and Army Civilians of Army Aviation:

Since our community was formally established in 1983, we have served as a model of safety across the force. Rigorous training, maintenance and currency standards keep aviators at the forefront of all Army operations across the globe. As the Army's senior aviator, I know too well the risk inherent to our profession and the measures we take to mitigate them daily.

The past five years have shown that we are approaching the most dangerous time of year, with August being the worst month. While flying hours remain the same during this time, accidents and deaths increase exponentially. We can and must do better.

This sustained pattern is alarming, but we have time to address potential issues now if we observe the following call to action:

- Manage Transitions: Risk increases significantly during transitions, whether it is between operations or leaders. During the summer PCS season in particular, changes in key personnel invite some hazards to slip through the cracks during handover. Identify who is most qualified for risk approval and as risk acceptance authority in your transition plans.
- Understand the Environment: Aircraft performance and the visual environment degrades with increasing heat. All members of the aviation team, from maintainers to crew chiefs to pilots to commanders, must be aware of the effects of weather on aircraft and personnel and adjust flight schedules accordingly.
- Manage Crew Mix: Similar to the challenges with transitions, personnel flux can create issues with crew selection. Leaders at all levels must holistically assess their aviators, regardless of time on station, and conduct a thorough assessment of their abilities and challenges to ensure appropriate crew selection based on the complexity of the mission and operational environment.
- Be Present as Leaders: Ensure the right leaders are present in all phases of operations – planning, rehearsals, and execution. Mission success depends upon leaders deciding how best to mitigate risk and authorize mission briefing officers and approval authorities.

I am confident Army Aviation will remain Above the Best. Continue to take care of your people, and always do the right thing the right way. Thank you for all that you do.

People First — Winning Matters — Army Strong!

FLY SAFE!

James C. McConville
General, United States Army

# Commander's Unit Assessment: *Is your unit achieving the standard?*

**Over the past five years, the Combat Readiness Center has noticed a marked increase in the number of incidents occurring during the fourth quarter of the fiscal year. Cumulatively, these incidents account for almost double the number of incidents of any other quarter. During this time, there are varying issues that contribute to this increase, but one of the most notable is the transition of leadership, formal and informal, during the late third and early fourth quarters. The summer months account for the largest number of permanent change of station movements during the year and the largest turnover of leaders at all grades. Units and leaders must manage these transitions.**

During transitions, outgoing leaders typically plan transitions based on the operational environment they faced and what worked well for the outgoing chain of command. However, in the course of operations, a large number of leaders get stuck in the "that's how we've always done it" mentality and may or may not have evolved with the changes in rules, regulations, and doctrine over their tenure at the unit. Unfortunately, the result may be a unit that, while well-intentioned and seemingly well trained, is actually operating outside of the established Army standard and the expectations of the new leadership. To determine how best to lead a unit, incoming leaders must conduct an initial assessment, establish a baseline, and then continue conducting continuous assessments of the efficacy of the unit at executing its mission essential tasks to standard.

**How does a commander determine if his/her unit is achieving the standard?**

Regardless of echelon, commanders are responsible for everything the unit does or fails to do, and charged with ensuring their units operate to standard in all operations – administrative, tactical, supply, maintenance, etc. However, opinions vary on the professionalism and efficacy of a unit based on proximity to the unit, necessitating assessment from multiple sources. External evaluations provide an unbiased evaluation of the unit based on doctrine, regulations, and higher-level guidance. Internal evaluations enable units to validate if they are operating within the guidelines and limits set within the unit. Finally, command assessments validate if the unit is operating within the commander's guidance and vision. In order to assess their units, commanders need to use varying techniques that provide a holistic review of their organizations.

**External Evaluations – The View from the Outside**

Historical external evaluations are an excellent tool for new commanders to gain an initial assessment of their unit. Some of these inspections include the organizational inspection program (OIP), staff assisted visits from the higher command, the FORSCOM Aviation Resource Management Survey (ARMS), or external "Objective T" evaluations (EXEVAL). Conducted annually or during significant unit events, external evaluations use checklists derived from doctrine, regulations, and Army-level directives to ensure the unit is achieving the minimum requirements established for like units across the Army. The checklists provide objective questions to evaluate the unit's incorporation and enforcement of required standards into their operations. In most cases, the results of these inspections must be maintained for a minimum of two years while noting particularly outstanding performance, but also requiring documented corrections bringing the unit into compliance with any failed standard. By reviewing previous inspections, commanders can see where the unit typically excels and where it has challenges achieving the standard.

**Internal Evaluations – The View from the Inside**

One of the largest challenges when arriving at a new unit, is determining the overall command

climate which alludes to the performance of the unit. Whether intentional or not, each unit has a certain culture associated with it based on the leadership inside the organization. Good units have the following: self-disciplined Soldiers, leaders who enforce standards, standards-based training, clear/practical standards, and support for task performance (DA Pam 385-1 *obsolete). While the regulation summarized may be obsolete, the statement remains true as a measurement of a good unit – disciplined Soldiers regularly achieving the standards enforced by leadership.

In order to assess the unit internally, the commander has various tools at his/her disposal to anonymously survey the members of the unit and, while not peculiar to aviation, definitely assess the health of the unit. Required within 60 days of assuming command, one of the key surveys offered to commanders are the command climate survey which evaluates the climate and culture of the unit. The survey asks questions related to organizational effectiveness as observed from all pay grades in order to develop themes throughout the unit. Often these themes indicate how well the unit communicates, enforces standards, and treats personnel. Additionally, at the battalion level, the commander must complete the Army Readiness Assessment Program (ARAP) survey within 90 days of assuming command in order to assess the safety climate and culture in the organization. The ARAP survey addresses and scores five segments: process auditing, reward systems, quality control, risk management, and command and control (C2). Historical data shows that units that score in the bottom quartile may be twice as likely to have a Class A mishap than units in the top quartile. Commanders can combine the results of these two surveys to have a fairly sound understanding of the culture in the unit. Is the unit "a good unit"? Do the Soldiers see it that way?

## The Commander's Assessment – The View from the Commander

Being the new commander is a challenging position when it comes to assessing the unit and becoming immediately responsible for the entire unit following the passing of the guidon. However, it does not have to be difficult since commanders are chosen and trained for their positions. You don't have to wait 30 days to decide to take action; have a plan of assessment ready prior to the ceremony. I had breakfast with LTG(R) Hal Moore one morning and he gave me four leadership points to guide me as a leader: 1) Three strikes and you are not out; 2) There is always one more thing you can do to influence any situation; 3) When nothing's wrong, nothing's wrong other than nothing's wrong; and 4) Trust your instincts. These four points of leadership can guide commanders in assessing their units and developing a course of action.

In the paragraph above, each leadership point indicates how important leadership is when assessing a unit. First, three strikes and you're not out. If you see the same failure three times, ask yourself why and what you as a commander need to do to prevent it. Second, there is always one more thing you can do. As the commander, you have the ability to resource and provide guidance to vector your formation to success. Third, when nothing's wrong, something is wrong. If you are not continually assessing your formation and evaluating ways to help it become more successful, you're wrong. Always seek to exceed the standard, be your team's biggest fan to them and higher, and ensure continuous growth. Finally, trust your instincts. When you look at something and the hairs on the back of your neck stand up, something is probably wrong. Always look at your unit in a constant state of assessment to bring it to the next level.

## Conclusion

While Army Aviation has seen an increase in accidents during the fourth quarter over the past five years, our branch is a learning force and can eliminate this spike. Increased transitions during the third and fourth quarters will remain as part of the manning cycle. However, properly managing these transitions both before and after they occur will ensure success. Using external, internal, and commander's assessments, coupled with candid feedback from leaders at all levels, will provide the commander with a holistic assessment of the unit and vector the force to success. ■

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# Assessing Aviation Maintenance Programs

**When assigned to an aviation organization with organic maintenance assets, it is important to assess the status of the organization's maintenance program. The Army measures the operational availability of aircraft in minutes, so your first inclination may be to look at last month's Department of the Army (DA) Form 1352, Army Aircraft Inventory, Status and Flying Time, which will indicate the organization's past aircraft operational status as a metric of how well the aviation maintenance program has performed. But, is this snapshot in time an accurate barometer for an entire maintenance program?**

To determine the true health of your aviation maintenance program use the U.S. Army Forces Command (FORSCOM) Aviation Resource Management Survey (ARMS) guide for maintenance and aviation support equipment operations. The guide provides a systematic method to assess and manage your maintenance operations. Page one of the guide provides an applicability guide which will determine which elements apply to your particular organization. In this article we will concentrate on four areas from the guide: standard operating procedures (SOP), quality control (QC), controlled exchange, and aircraft ground support equipment (AGSE).

### Standard Operating Procedures

The purpose of the SOP is to formally describe "how" a unit performs maintenance on weapons, vehicles, communication equipment, chemical, biological, radiological and nuclear gear, and other individual and unit equipment in order to meet regulatory requirements. The unit maintenance SOP will be written in enough detail to give recently assigned personnel, a firm grasp of how maintenance is to be accomplished in the unit (Army Regulation (AR) 750-1, Army Materiel Maintenance Policy). If the SOP addresses all the required areas in the ARMS guide and Soldiers are using the SOP, the maintenance organization should be in excellent shape, executing to standard. Make sure the maintenance SOP is written in a "how to" format and can be understood and applied by any member of the organization. For an example of a maintenance SOP, see Appendix A, Army Techniques Publication (ATP) 3-04.7, Army Aviation Maintenance.

### Quality Control

Quality Control is the heart of any aviation maintenance organization. Technical inspectors (TI) and maintenance test pilots (MTP)/functional check pilots are the last line of defense when it comes to airworthiness of Army aircraft. Technical inspectors should be the most technically proficient Soldiers in their particular aviation maintenance skill set and

will be selected based on their skills, qualifications, and experience. Rank alone may not be the best indicator of technical competence; aviation has more than its fair share of MOS transfers from other career fields within the Army.

Soldiers assigned as TIs must be competent at skill level thirty (Staff Sergeant Grade) and have it annotated on their DA Form 7817, Aviation Maintainer Training Record, in the AMTP training folder. In order to achieve this, the QC shop is responsible for maintaining aviation maintenance training program (AMTP) folders and integrated critical task lists (ICTL) for every assigned 15 series military occupational specialty (MOS) Soldier. Technical Inspectors ensure that procedures in the Army Maintenance Management System-Aviation (DA Pamphlet (PAM) 738-751) are being followed which facilitates the accuracy of aircraft forms and records. Additionally, QC is responsible for ensuring aviation safety message compliance/implementation and documentation is complete for all aircraft in the organization. By requiring maintainers to accurately perform and document maintenance actions, the QC TIs force strict adherence to procedures in aircraft technical manuals (TM) and other supporting publications.

Shop/hangar and flight line safety are the responsibility of the QC shop which develops and runs specific programs within the unit maintenance operation including confined space, machine guarding, lock-out tag out, fall protection, explosives, and radiation among others. The QC personnel have this responsibility when maintenance organizations don't have an authorization on their modified table of organization and equipment (MTOE) for an aviation safety officer (ASO). The organization must use the next higher (e.g., battalion/squadron/brigade) safety office to ensure these programs are being executed correctly to protect our Soldiers. This ensures that the subprograms of unit maintenance are operating appropriately with proper oversight.

**Controlled Exchange**

Controlled exchange requires approval at the O-5 level or higher. Army Regulation 750-1 has an exhaustive list of when it should be used. Remember, when a component is removed to make another aircraft serviceable, that component must be inspected for serviceability before it can be installed on that aircraft. It must be annotated as removed on the donor aircraft historical record and installed on the receiving aircraft historical records. There must be a continuous dialogue between production control (PC), QC, technical supply,

and maintenance personnel before, during, and immediately after the controlled exchange (Army Techniques Publication (ATP) 3-04.7, Army Aviation Maintenance). Direct involvement by both the command and maintenance personnel in decisions to conduct controlled exchanges will enable rapid identification of supply shortcomings and potentially reduce duplicate work for maintenance personnel.

**Aircraft Ground Support Equipment**

Aircraft ground support equipment and peculiar ground support equipment (PGSE) aid maintainers in moving and maintaining/servicing aircraft. Some AGSE/PGSE (air compressor and up) requires training, licensing and testing for operators in accordance with AR 600-55, The Army Driver And Operator Standardization Program (Selection, Training, Testing, And Licensing). The Standard Army Towing System (SATS), hydraulic servicing carts, Generic Aviation Nitrogen Generator (GANG),nitrogen servicing carts, cranes, and aviation ground power units (AGPU) are examples of equipment that require licensing. Additionally, commercial off the shelf (COTS) items are to be operated and maintained in accordance with the manufacturer's instructions and should require licensing if they are more complex than an air compressor. Lifting devices such as jacks, overhead cranes, traditional cranes, slings, and maintenance stands are required to be inspected and marked with their maximum load capacity and when the next inspection is required. By ensuring that AGSE/PGSE remains fully mission capable, the unit will have the required tools to complete necessary aviation maintenance without delay, resulting in sustained combat power for all missions. See Appendix F of ATP 3-04.7 for information on the AGSE maintenance program.

**Summary**

The success of aviation maintenance organizations is a direct reflection of leadership in the unit. The formula for maintenance success is contained in the organization's SOP and validated by the QC shop. Review SOPs annually, anytime major processes change, and after changes of command. Assign subject matter experts specific content areas for the best product. If leaders know and enforce standards contained in ARs, accompanying DA pamphlets, general and aircraft specific TMs and doctrinal publications it will be evident in everything the organization does.

Assessing maintenance operations requires diligence and utilization of the ARMS guide as a concise compilation of Army Standards. The guide, as a process evaluation tool, assists in evaluating programs and determining where to apply resources. The guide, as a competency tool, will assist in evaluating maintenance team competency and determining where to apply corrective training if necessary. ■

**Accessing Current ARMS Guides**

https://fc.forscom.army.mil/sites/G3/g3avn/g3-avn/SitePages/ARMS_AVN.aspx. (Must be on government server or VPN and use your e-mail CAC certificate) or on Joint Technical Data Integration (JTDI) under the FORSCOM tab at https://www.jtdi.mil/.

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# Aviation Standardization: A Better Understanding


**The Commanding General (CG), United States Army Aviation Center (USAACE) serves as the proponent for the Army aviation standardization program and is responsible for ensuring aviation units are standardized and prepared for the combined arms mission. Program objectives seek to improve and sustain proficiency and readiness among aviation Soldiers and units throughout the Army. Additionally, personnel trained to the same standard, regardless of their location, reduce turbulence and adverse effects following reassignments. Likewise, local changes that creep into approved standardized practices and procedures are eliminated.**

The CG, USAACE utilizes two agencies to meet standardization objectives. The Directorate of Training and Doctrine (DOTD) is the lead agency responsible for Army aviation training, doctrine, and tactics development in support of aviation operations, gunnery, aviation materiel and support equipment, manned and unmanned aircraft systems, initial military training, professional military education, and functional training focused on supporting an aviation force at war. DOTD further is responsible for the Aviation Branch efforts in orchestrating the Aircraft Survivability, Development, and Tactics Branch, Aviation Gunnery, Aviation Tactical Operations Program. Additionally, the Directorate of Evaluation and Standardization (DES) is the proponent agency for the enforcement and oversight of the Army aviation standardization program. DES assesses units in the field to ensure compliance with the approved aircrew training program (ATP) and Army aviation standardization policy. Adherence to approved practices and procedures is a critical element in a unit's ability to prevent accidents.

### Aviation Commander Responsibilities

The aviation commander is responsible for the

unit's standardization program and must include it throughout the overall training strategy and all training tasks. The commander has a host of personnel available to implement and monitor the unit standardization program to include: subordinate leaders, unit standardization officers, maintenance examiners, safety officers, instructor pilots, aviation mission survivability officers, master gunners, and non-rated crewmember (NRCM) standardization instructors. These individuals formulate and implement the unit's standardization program in accordance with established command guidance to maintain continuity with the Army aviation standardization program.

To determine the success of the standardization program, periodic assessments (internal and external) are conducted to ensure aviation units meet standardization program objectives. Two external assessments are conducted on a 24- to 36-month cycle for aviation units:

**(1) Army Aviation Unit Assessment.** This assessment, generally conducted by DES for combat aviation brigade (CAB) level and below units, is designed to measure the effectiveness of an aircrew training program (ATP). The assessment concentrates on unit standard operating procedures (SOP), required training programs, mission processes, and flight evaluations to determine individual proficiency.

**(2) Aviation Resource Management Survey (ARMS).** Additional internal assessments may be conducted by individual units or higher headquarters on a more frequent schedule to ensure standardization objectives are being met. The ARMS checklist is a valuable tool in completing assessments. It outlines aviation program requirements and associated references to meet inspection standards and assess the readiness and resource management of the aviation unit. It will help identify areas of strength and those in need of attention.

## Standardization Resources

Army Training Circular (TC) 03-04.11, Commander's Aviation Training and Standardization Program, enables aviation leaders, trainers and evaluators to develop, manage, and administer a comprehensive aviation training and standardization program by providing requirements to improve and sustain proficiency and readiness in aviation skills. They also provide approved standardized practices and procedures that allow units in the field to manage and execute a standardized aviation training program. It concludes by guiding the management of flight records. This guidance helps units of any size - crews, multiple-aircraft formations, teams, companies, troops, squadrons, battalions, or brigades - to readily function together to accomplish the warfighting combined arms mission strategy.

The commander utilizes his personnel to assist in managing and making sure the standardization program is running smoothly resulting in personnel fully trained, mission qualified, and current. When a task is conducted to established standards, small tasks, or collective tasks, it means the task is completed correctly and in the safest manner possible. This is especially true in aviation, where failure to properly perform tasks increases risk and the potential for catastrophic results. By-the-book procedures in maintenance, mission planning, and aviation air/ground operations yield the highest benefit for unit preparedness and mission accomplishment.

## Conclusion

All members of the aviation unit involved in training, maintenance and aviation support activities must instill a sense of discipline to maintain the standards required to successfully accomplish the mission. The checks, double checks, training programs and operating procedures as well as surveys and evaluations were developed to ensure equipment and crews operate with the highest efficiency and lowest risk in the performance of their duties. ■

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# What is an Aviation Resource Management Survey?

**The Aviation Resource Management Survey (ARMS) evaluates the resource management of aviation unit programs, provides staff assistance and identifies internal and systemic issues for resolution. The focus of the ARMS includes all aviation components of both manned and unmanned units. So, what can the survey do for a unit to facilitate its efficient operation and maximize its most valuable resource, the Soldier?**

Typically, aviation unit performance is measured and assessed on how well they performed across each functional area of the ARMS. U.S. Army Forces Command (FORSCOM) is the lead agency for the ARMS program designed to assist the commanders in assessing the readiness and resource management of all assigned aviation units. FORSCOM continually updates the guides to maintain relevant and industry standards allowing commanders the ability to maximize mission readiness and prevent mishaps.

### How to Manage a Program

The FORSCOM ARMS survey guides should be utilized to manage each functional area. These guides have the information which assists a unit with survey questions and the references to correctly manage the functional area. The guides are neither a regulation nor regulatory but are used as a tool to assist units to set up and manage their programs. The functional area guides provide the unit with the question, reference, and answer to what the inspector will identify if the area is operating to standard. If units manage their programs using the guides as the reference to meet the standard, the next ARMS inspection (they are scheduled every two

years for active-duty units and 24-36 months for Army Command (ACOM), Army service component command (ASCC), direct reporting unit (DRU), and Army National Guard (ARNG)) should result in units passing all functional areas.

**Annual Surveys**

In accordance with Army Regulation (AR) 385-10, The Army Safety Program, paragraph 15–3, under aviation accident prevention surveys (AAPS), "commanders of all aviation units and aviation support facilities will conduct an aviation accident prevention survey annually, at a minimum. A survey of a functional area (or subarea) will be accomplished within 60 days of a new program manager being appointed. When possible, the AAPS should be administered from the battalion or squadron level, consolidating the safety staff into a survey team and using supplemental expertise from outside the unit." Units are encouraged to use the current version of the ARMS guide which is located at https://www.jtdi.mil/. The guides are updated throughout the year to continually improve the program.

New unit commanders should review previous unit AAPS and ARMS results shortly after assuming command to see where the unit was, is, and where it needs to go. Commanders should schedule and accomplish an AAPS annually to maintain program oversight. Conducting an audit of all functional areas will allow commanders to get the pulse of the unit and see the areas in need of assistance. Selecting audit team members should be based on their experience in the functional area. These auditors will have experience and a working knowledge of how the program is required to run and be able to mentor those being inspected.

**Assessing ARMS Results**

Once the FORSCOM audit teams complete their survey the findings are briefed and considered confidential communications between the ARMS team and unit commanders. This ensures an open, candid exchange of information between the ARMS team and the commander. Commanders are encouraged to use these results to improve areas that are found lacking proper management. Correcting these deficiencies enables the unit to operate with greater efficiency and safety. Successfully passing each ARMS inspection area positively impacts unit operational safety, equipment, and combat readiness.

The ARMS is not about the score, but what it represents. Program managers and commanders shouldn't stress over whether they received red, amber, or green, but should focus on how effective the programs are administered. All functional areas have to work concurrently in order to safeguard the Soldiers and equipment. Mismanagement or lack of oversight, no matter the program can lead to a lack of mission readiness, a shortcoming with training and combat ineffectiveness. Positive command engagements will allow for a logical way to validate your SOPs to ensure they are feasible and in accordance with regulations. Productive SOPs allow the unit to operate painlessly and amend its errors when needed during the process of managing the unit's programs. Finally, using the performance-based metrics inside of the ARMS guide will allow commanders the ability to observe if their units are actually following their SOPs (ARMS Requirements) and determine if the unit needs more resources, training, or a command adjustment.

FORSCOM ARMS teams continually update the guides to maintain relevant and industry standards allowing commanders the ability to maximize mission readiness and prevent mishaps. ■

**References:**

*AR 95-1, Aviation Flight Regulation*

*AR 385-10, The Army Safety Program*

*DA PAM 395-90, Army Aviation Accident Prevention Program*

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# Fighter Management: What's the Big Deal?

**I can't count how many times as a young safety officer, I was directed to establish and monitor the company and battalion fighter management program. Not wanting to reinvent the wheel, I was able to ask senior aviation safety officers (ASO) for a copy of their fighter management tracker and just add our pilots and crew members. This tracker most often was an Excel spreadsheet that had a simple formula to calculate the limits based on the units standard operation procedure (SOP). The tracker is supposed to be a tool for the commander to assess the crew rest and flight time of each aviator and crew member in the formation. Based on crew rest and flight time, commanders, platoon leaders, or whomever creates the flight schedule use the tracker to assist in selecting the best crew mix for the mission and as a risk mitigation tool.**

The fighter management/crew endurance programs often turn into a paperwork drill or become an ineffective tool that is not used properly. Individuals do not see it as a mitigation tool, but just another step in their routine that prevents them from going home. Soldiers need to be honest about their duty day and flight time. Fighter management and crew endurance applies to more than just aviation units. Ground personnel have been found to violate crew rest and are more likely to be pushed beyond the normal work-rest cycle. Army aviation does a better job enforcing the standard, but can always improve in the management of the program. Fatigue, whether acute, chronic, or burnout, can severely impair one's ability to make sound decisions. An efficient and well managed program can save lives. Referring to the unit SOP for fighter management briefs well, but isn't worth the paper it is written on if no one actually knows how to implement and manage the program.

Effectively managing the program requires each staff position to understand their role in the commander's fighter management program. At the unit level this is the operational positions (operations officer and ASO). A fighter management program which is managed and integrated into flight operations by the operations officer, and actively monitored by the ASO, will result in improved on-scene real time risk assessment and risk reduction by utilizing rested crews to execute the mission. A program which is haphazardly managed and poorly monitored is a quick recipe for turning a low risk mission into a life or death situation. Below are a couple of excerpts that define the Army's take on crew endurance:

Excerpts from Department of the Army (DA) Pamphlet (PAM) 385-90, Army Aviation Accident Prevention Program, dated 28 AUG 2007, Paragraph:

**1-4. Functions**

**l. *Operations officers.*** (Pg. 3)

(5) Monitor the crew endurance program and provide feedback as necessary to meet mission requirements.

p. ***Flight surgeon.*** (Pg. 4-5)

(7) Advise the commander on crew endurance issues.

**Section II**

Terms

**Soldier endurance** (Pg. 28)

Also referred to as crew rest/crew endurance/fighter management. A program designed by the unit commander and tailored to the unit mission to prevent fatigue from becoming a risk factor in aviation operations.

Excerpt from Army Regulation (AR) 95-1, Aviation Flight Regulations, dated 22 MAR 2018, Paragraph 3–16. Crew endurance states:

**a.** Commanders will design a crew endurance program tailored to their unit mission and include it in their standard operating procedures (see DA Pam 385–90). The leader's guide to crew endurance is available at https://safety.army.mil/.

**b.** Crew endurance is an integral part of the overall risk management program. It is used to control risks due to sleep deprivation or fatigue and to prescribe thresholds for command decisions whether to accept those risks.

**c.** Commanders should consider the advice of the FS and aviation safety officer in designing their programs.

If you notice in these excerpts the commanders and operations officers will monitor the program with advice from the ASO. In the terms it stipulates the program is designed by the unit commander. In essence, it is designed and implemented by the commander and monitored by the operations officer with safety oversight by the ASO. In my experiences, the ASO became the default owner of the program. Commanders own the program and implementation is an operations process ingrained in the operational risk reduction measures along with the risk assessment worksheet (RAW) and the risk-common operating procedures (R-COP). ASOs monitor not just as a paperwork check but to ensure that crews are following the fighter management program and inform the commander on how effective the program is.

The fighter management program is defined and implemented by the commander and requires each Soldier to do their part in making it effective. Remember the program is not only for crewmembers, it is for every Soldier in the unit and provides leaders the information necessary to make the best risk decisions when conducting daily operations. I encourage every Soldier to be engaged in the unit's fighter management program and watch out for the Soldiers on their left and right. If you notice someone is not well rested or not performing at the top of their game, say something to your leadership. Don't be the individual that did not speak up when you notice your "Battle Buddy" is off their game. ■

**References:**

*Army Publishing Directorate (APD) https://armypubs.army.mil/*

*AR 95-1, Aviation Flight Regulations*

*DA Pam 385-90, Army Aviation Accident Prevention Program*

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# Mishap Review:
# UH-60L Maintenance Test Flight

**The crew was conducting a limited maintenance test flight on a UH-60L when the No. 1 engine failed during the conduct of the maintenance task. Upon initial indication of the LOW main rotor rotations per minute (RPMR) audio annunciation, the aircrew failed to enter an autorotation. The aircrew failed to lower the collective, adjust their airspeed, and exit the maintenance maneuver by placing the No. 2 engine power control lever (PCL) to the FLY position. As a result, the crew allowed the aircraft rotor to decay below limits. The aircraft entered a high rate of descent with RPMR well below operational limits which prevented the crew from arresting the descent. The aircraft impacted the terrain at a high rate of speed resulting in three fatalities and the total destruction of a UH-60L.**

**History**

The mishap crew began their duty day at 0700. The mishap crew's mission was to conduct a limited maintenance test flight (LMTF) for the mishap aircraft. The mishap aircraft underwent continuous troubleshooting for a fuel leak in the No. 1 engine bay. The mission was conducted during the normal duty day for the maintenance test pilot (MTP) and the pilot (PI).

The mishap aircraft required maintenance procedures for a No. 1 engine fuel leak which was the primary indication for the engine fault write-up. The aircraft had numerous trouble shooting procedures conducted in accordance with (IAW) the interactive electronic technical manual work package. The final procedure was the completion of a LMTF for replacement of the No. 1 engine common hydro-mechanical unit (CHMU).

The mishap aircrew departed the airport at 1355 for the local maintenance test flight area (MTFA). The aircrew departed and climbed to 6,500 feet mean sea level (MSL), enroute to the MTFA. Upon arrival into the test flight area, the aircrew entered the planned test flight maneuver from the UH-60 Series Aircrew Training Module (Task 4220 Perform Maximum Power Check/ TGT [Turbine Gas Temperature] Limiter Check). The MTP initiated the maneuver by retarding the No. 2 engine PCL while the PI maintained the required maneuver parameters. The mishap aircrew completed the 1st and 2nd phases of the test by checking the lower limiter at 866 degrees and the upper limiter at 891 degrees turbine gas temperature (TGT). After reaching the upper limiter of 891 degrees the aircraft experienced a loss of power from the check engine. The rotor rpm decreased rapidly and activated the Low RPMR audio. Neither the MTP nor PI on controls made collective adjustments to maintain RPMR within limits. The MTP did not return the No. 2 PCL to the FLY position. The RPMR decayed below 85 percent which caused the main generators to drop off line and without a reduction in collective pitch, the aircraft RPMR continued to decay precluding continued flight. At some point thereafter, the No. 2 engine experienced a power loss. The MTP executed a MAYDAY call shortly before the aircraft impacted the ground.

## Crew

The MTP had 778 hours in MTDS and 860 hours total time. The PI had 424 hours in MTDS and 508 hours total time.

## Commentary

While conducting a daytime LMTF, the PI and MTP failed to follow procedures and respond to a critical situation during a test flight maneuver. That is, the PI and MTP did not respond correctly to the LOW RPMR audio annunciation by failing to place the No. 2 engine PCL to the FLY position in contravention to the UH-60 Series Aircrew Training Manual (ATM). UH-60 Series Aircrew Training Manual, Task 4001 Respond to Critical Situations during Test Flight Maneuvers includes the following warning:

**WARNING**
**If the simulated situation requires manipulation of the power control levers, the first step will always be to get out of the maneuver by placing the power control levers to fly.**

Army aviation is inherently dangerous in normal conditions. It becomes even more dangerous during maintenance test flights when aircrews are evaluating maintenance performed or trouble shooting aircraft systems, so important that it has its own ATM task.

The ATM provides the task, conditions, and standards to correctly perform Army aviation flight operations for each aircraft series. While some tasks are common across all aviators and non-rated crewmembers, others are not. The master task list (MTL) spells out which task are to be completed by job title (instructor pilot, MTP). Aviation leaders should ensure they assess their standardization programs and that a regimented training program is actively utilized to maintain performance standards necessary to successfully operate during conduct of each mission and job title. While MTPs are instructed in the maintenance task and complete flight evaluations in the conduct of test flight tasks, it may be an added benefit to the unit and the safety of operations for PIs to undergo a short training evolution. This would focus on their crewmember responsibilities during MTFs and should be oriented toward operating as a functioning crewmember. Maximize training non-MTP aviators in how to perform emergency procedures during a failure of the system being checked during MTF tasks so the PI can actively assist as a crewmember. ■

# Class A - C Mishap Tables

| | Manned Aircraft Class A – C Mishap Table | | | | | | as of 22 Jun 20 | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Month | FY 19 | | | | | FY 20 | | | |
| | | Class A Mishaps | Class B Mishaps | Class C Mishaps | Fatalities | | Class A Mishaps | Class B Mishaps | Class C Mishaps | Fatalities |
| 1st Qtr | October | 1 | 1 | 4 | 0 | | 2 | 1 | 4 | 0 |
| | November | 0 | 0 | 3 | 0 | | 1 | 0 | 2 | 2 |
| | December | 1 | 1 | 2 | 0 | | 1 | 1 | 2 | 3 |
| 2nd Qtr | January | 1 | 1 | 0 | 0 | | 0 | 0 | 5 | 0 |
| | February | 2 | 0 | 0 | 0 | | 1 | 0 | 6 | 0 |
| | March | 0 | 1 | 5 | 0 | | 1 | 1 | 4 | 0 |
| 3rd Qtr | April | 0 | 1 | 3 | 0 | | 0 | 1 | 1 | 0 |
| | May | 2 | 2 | 6 | 1 | | 0 | 0 | 6 | 0 |
| | June | 0 | 0 | 5 | 0 | | 0 | 0 | 1 | 0 |
| 4th Qtr | July | 2 | 1 | 2 | 0 | | | | | |
| | August | 1 | 0 | 3 | 1 | | | | | |
| | September | 2 | 1 | 8 | 1 | | | | | |
| | Total for Year | 12 | 9 | 41 | 3 | Year to Date | 6 | 4 | 31 | 5 |
| | Class A Flight Mishap rate per 100,000 Flight Hours | | | | | | | | | |
| | 5 Yr Avg: 1.08 | | 3 Yr Avg: 1.09 | | FY 19: 1.15 | | Current FY: 0.89 | | | |

| | UAS Class A – C Mishap Table | | | | | as of 22 Jun 20 | | | |
|---|---|---|---|---|---|---|---|---|---|
| | FY 19 | | | | | FY 20 | | | |
| | Class A Mishaps | Class B Mishaps | Class C Mishaps | Total | | Class A Mishaps | Class B Mishaps | Class C Mishaps | Total |
| MQ-1 | 9 | 2 | 3 | 14 | W/GE | 5 | 1 | 3 | 9 |
| MQ-5 | 1 | 0 | 0 | 1 | Hunter | 0 | 0 | 0 | 0 |
| RQ-7 | 1 | 13 | 38 | 52 | Shadow | 0 | 8 | 14 | 22 |
| RQ-11 | 0 | 0 | 0 | 0 | Raven | 0 | 0 | 0 | 0 |
| RQ-20 | 0 | 0 | 1 | 1 | Puma | 0 | 0 | 1 | 1 |
| SUAV | 0 | 0 | 0 | 0 | SUAV | 0 | 0 | 0 | 0 |
| | | | | | | | | | |
| UAS | 11 | 15 | 42 | 68 | UAS | 5 | 9 | 18 | 32 |
| Aerostat | 1 | 1 | 1 | 3 | Aerostat | 3 | 0 | 0 | 3 |
| Total for Year | 12 | 16 | 43 | 71 | Year to Date | 8 | 9 | 18 | 35 |
| UAS Flight Mishap rate per 100,000 Flight Hours | | | | | | | | | |
| MQ-1C Class A | 5 Yr Avg: 9.56 | | 3 Yr Avg: 9.87 | | FY 19: 8.77 | | Current FY: 7.62 | | |
| RQ-7B Class A-C | 5 Yr Avg: 58.29 | | 3 Yr Avg: 69.64 | | FY 19: 106.20 | | Current FY: 103.15 | | |

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

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

## *Sloppy Records is Sloppy Maintenance!*

**"Sloppy records is sloppy maintenance." That phrase will stick with me forever. Following an aircraft incident, one of the accident investigators made that comment to me as we were discussing the aircraft's maintenance and historical records. As a quality control (QC) noncommissioned officer-in-charge (NCOIC), I was answering questions and defending my QC shop when I heard that phrase. I continue to share the phrase and how it changed my way of doing business.**

I was assigned as a lead TI at Ft. Hood, Texas, with a company of 15 CH-47D aircraft. I had three junior inspectors with strong maintenance backgrounds, one Soldier in the Advanced Leader Course (ALC), and, for a short period, one seasoned inspector. Prior to my arrival, the unit experienced a Class A accident with five fatalities and the loss of an aircraft (reference Safety of Flight CH-47-95-02: Inspection and Torque Check of Lower Drive Link to Swashplate Retaining Hardware and FY 95 Class A flight Accidents, Flightfax Issue November 1995). The accident was the result of maintenance oversight.

Shortly after my arrival, the investigation was concluded, but there was still the question of "how did this happen?" The unit's mission continued, and a few months later, our unit was tasked to support 1st Cavalry Division at the National Training Center (NTC). While in the final phases of the exercise, one of our aircraft, with a crew of four, experienced a lateral vibration in the flight controls during sling load operations. The pilot announced he had a flight control malfunction, but as a crew, they elected to continue to the destination, reference Flight Fax September 1995, Investigator's Forum. During shutdown, the aft red rotor blade came out of phase, striking the tunnel cover, and in turn was struck by the forward green rotor blade. Fortunately, there were no injuries, but the aircraft was damaged. Immediately, the six month file and maintenance records were secured in accordance with following proper protocols. Soon after, the accident investigation team out of Ft. Rucker arrived, and the investigation began.

As I was being questioned by a senior warrant officer, non-contributing factors were pointed out with the recently completed phase inspection checklist. During our discussions there were also concerns about our maintenance records (Department of the Army Pamphlet (DA Pam) 738-751, Functional User's Manual for the Army Maintenance Management System – Aviation (TAMMS-A), section 2-11, DA Form 2408-13-1 (Aircraft Inspection and Maintenance Record) documentation); "sloppy" is the word I remember.

Even though we are in an electronic age now, using an Army Logistics Information System (LIS), the requirements remain unchanged. DA Pam 738-751 gives us guidance on forms and records documentation, but like most regulatory guidance, differences of interpretation are common. Units should develop their standard operating procedures (SOP) to clarify the interpretations. With that said, my intent for the remainder of the article is to induce a thought process while performing and documenting maintenance.

We will start with a fault. The person who finds a fault or removes a component/module or part called a widget, shall immediately make an entry in the first open Fault/Remarks section. A pilot enters a fault "Widget has excessive lateral movement." The symbol entered is a red X status symbol. The mechanic reviews the task in the aircraft technical manual and sees that there is a parameter of 0.010" to 0.050" lateral movement allowed.

The mechanic addressing the lateral movement fault completes the task in accordance with the work package in which a dial indicator was used to perform the measurement of the lateral movement. The mechanic inputs the corrective action* taken and enters either "Inspected O.K.", or "Checked and found O.K." What was the amount of movement measured? What does it mean to someone else reviewing the fault correction? It doesn't say much to the pilot, the TI, or worst case, an investigating team. How about "Inspected O.K. IAW" TM, Task or Work Packet number and step, and include the "measurement of movement was found to be 0.032 inches laterally." Now we have established a record of the component wear, shown that it is within limits, and we have a documented

measurement to establish a baseline for determining a follow-on replacement course of action. Prior to releasing the aircraft, we can create another fault entry using our previous findings. We can enter "Widget has 0.032 inches lateral play; 0.050 inches allowed as per (include manual, and task information)", and place it on a diagonal status. Order the part and provide a document number. Over time, the 0.032" lateral play is going to get worse, and depending on the forces applied, may get worse over a short period of time. My point is, we have provided a record of a fault, a record of maintenance checking the fault, and established a follow-on course of action, available for view in open faults page of the DA Form 2408-13-1.

Per DA Pam 738-751, under Disposition, 2-12 e. (1) Maintenance supervisors shall check the completed DA Form 2408–13–2 for accuracy, and ensure that all entries agree with the related fault listed on the DA Form 2408–13–1 or DA Form 2408–13–3. Are we doing this? While we as supervisors are reviewing the documentation, is it making sense to us? Are we asking questions because there isn't enough information in our related maintenance? This is an important part of getting the maintenance right. We should be doing this!

With the Major Maintenance Events (MMEs) tool, QC can save a lot of time for the end user. It is a lot of work for the QC shop, but should be performed with the maintenance folks and supervisors' input. This tool is used to input common maintenance events into the Logistics Information System (LIS), whether Unit Level Logistics System-Aviation (ULLS-A) or Aircraft Notebook (ACN). QC pre-loads disassembly/removal of aircraft components documentation on the DA Form 2408-13-2 (-2), such as removing rotor blades or engines. There may be 50 or more "-2" entries for some maintenance instances; with an MME, maintenance personnel can "pull" a packet (electronic of course) and attach it to the DA Form 2408-13-1 initial fault entry. It's an awesome tool especially when used with RESET and phase maintenance. This helps clear up some of the interpretations or inconsistencies with documenting maintenance, and can be added into the unit SOP.

**Measurement Traceability.** Many of you may not be familiar with this term, but this is our Test, Measurement, and Diagnostic Equipment (TMDE) program for our calibrated tools. If we refer to Technical Manual (TM) 1-1500-204-23-9, General Aircraft Maintenance (Tools and Ground Support Equipment), Section 8-8 Repair and Calibration, note the Change Bar (Change 7 dated 24 April 2015). "Should the tool or equipment fail local testing or being coded unserviceable by your ATST (Area TMDE Support Team), tracking documentation will assist in identifying aircraft and CSI (Critical Safety Items) components that unserviceable TMDE tools were used on." In the event the torque wrench was inaccurate or marked unserviceable at the next calibration, did we go back and check the aircraft? We should be documenting the torque wrench serial number or other TMDE used, which gives us traceability.

**Historical Records.** J - G (or) H + E = K; who remembers that? It doesn't matter as we are no longer paper records and our LIS does it for us, right? Garbage in is garbage out. For example, historical records are how we confirm or deny the above is being accomplished. If we as maintainers are entering data into the electronic maintenance and historical records, we must be accurate and careful with the process. Historical records are a critical component of aviation maintenance and safety of flight.

In closing, aircraft maintenance is a dangerous business, and it is up to all of us to make good decisions and keep our crews and equipment as safe as possible. As a platoon sergeant, my1SG would always tell me; "If it isn't documented, it didn't happen." I challenge you leaders to review some of your past maintenance records. Put yourself in an "Investigators" position; do your records capture maintenance without leaving open questions? ■

***Note**:*

*Correcting Information. Do not use the word "corrected". This is not an approved entry as stated by DA Pam 738-751 (paragraph 2-11, c. General Instructions, d. Disposition, Part II- Correcting Information, (a)), but "use words such as "applied," "tested," "installed," "serviced," "replaced," "repaired," "adjusted," or "erroneous entry" with other brief information about the action to describe the corrective action." The DA Form 2408-13-1 is what captures our attention while reviewing records prior to a daily or preflight so we should add information to identify the end result of the corrected fault.*

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

Flightfax
Volume 11
Number 20
6 October 1982

*The following Flightfax issue provides an assessment of instructor pilot (IP) performance as it relates to aircraft mishaps. It provides an example of how assessments of mishaps involving IPs provided causal factors which a unit can then execute training to overcome and reduce the risk.*

# IP Doesn't Stand for Infallible Performance

Instructor pilots were listed as a definite cause factor in 17 Class A, 12 Class B, and 75 Class C accidents for the 20month period ending 31 August 1982. The causes included procedure violations, overconfidence in the student pilot's ability, overconfidence in self, faulty judgment, inexperience and command supervision, and, by far the most common cause, too late with corrective actions. Let's review some of these accidents to see if they could have been prevented.

### Procedure Violations

It is the IP's responsibility to insure he is proficient in his area of training. He should be totally familiar with the operator's manual and other regulations governing flight of his aircraft.

- A UH-1 Huey IP was on the controls during a nap-of-earth (NOE) training flight. Visibility was poor, and the IP became disoriented and deviated from the intended flight route. Flying about 5 feet above vegetation, the Huey hit a wire. The IP had failed to remain within the parameters for NOE flight outlined in FM 1-51.
- The right main landing gear of a U-21 failed to retract during climb out. The crew tried to get a safe gear indication and then landed with the gear unlocked. The gear collapsed during rollout after landing. The IP did not use the correct emergency procedures called for in the operator's manual. He did not use the backup manual gear lowering system and did not apply light braking force to the gear after touchdown.
- The pilot of a UH-60 inadvertently shut down both engines during a simulated single-engine approach at night. The IP took the controls and turned toward the runway. Contrary to the operator's manual, he allowed main rotor rpm to decay below 90 percent, flared the aircraft, and pulled collective pitch too low to stop the rate of descent. The aircraft crashed tail low and was destroyed.

### Overconfidence in Student Pilots

Instructor pilots must not develop excessive confidence in the abilities of student pilots undergoing training. The unexpected must be expected, no matter how good the student pilots have performed in the past.

- A UH-1 IP had demonstrated two NOE decelerations. The pilot had completed two slow decelerations (one of them satisfactorily) and was doing a faster third one. At a speed above effective translational lift, the pilot incorrectly applied abrupt aft cyclic and insufficient collective pitch. The aircraft rotated about the mast and both tail rotor blades hit the ground. Directional control was lost, and the aircraft crashed. The student pilot had not demonstrated he was capable of performing the maneuver at a speed above effective translational lift after having done one successfully at airspeed below effective translational lift.
- Another UH-1 IP allowed his student pilot to continue a landing until the aircraft hit the ground on the tail stinger and skid heels. The tail rotor (TR) driveshaft was severed and the tail boom

damaged. The IP did not take or command control of the aircraft throughout the maneuver. He was confident in the pilot's ability to terminate at a safe recovery point.

**IP Performance**

- A third UH-1 IP permitted his pilot to descend below the prescribed point of initial pitch application during a low-level autorotation. When the IP tried to recover with power, anti-torque control was lost and the aircraft crashed. The pilot had been performing all of his contact maneuvers in a superior manner, and the IP was confident the pilot would complete the autorotation successfully.
- The pilot of a U-21 was making a single-engine approach to landing. He allowed his airspeed to dissipate below VMC as the aircraft approached the landing threshold. The IP, who had flown with the pilot before and was confident in his ability to fly the aircraft in all flight regimes, allowed the pilot to continue until a safe recovery was impossible. The aircraft became uncontrollable during an attempted go-around and crashed.

**IP Overconfidence in Self**

Just as an IP must not become overconfident in the abilities of his student pilots, he must also guard against overconfidence in himself. He must be aware of his capabilities and never exceed them.

- A UH-1 IP was evaluating a student pilot during a simulated instrument takeoff. The aircraft rolled rapidly to the right and crashed. The IP was looking to his right rear at a nearby aircraft and did not notice the change in the attitude of the aircraft in time to recover. He said he had ridden through many "hairy" instrument takeoffs and had always been able to assume control in time to recover from a poor maneuver.
- A CH-54 IP directed an approach with a sling load, with one engine at idle, to a confined area to simulate a one-engine-inoperative emergency procedure. The maneuver, not required in any course of instruction nor included in the aircrew training manual (ATM), exceeded the power available to safely terminate at the selected landing site. The sling load went through the trees and then hit the ground. The main rotor blades (MRB) then hit the trees and the helicopter crashed. The IP had shown by past performance a tendency to tax his flying skills to his personal limits. To have initiated this maneuver would require a high degree of confidence in his ability to fly a critical approach, with no margin for error.

**Faulty Judgment**

Sometimes IPs initiate or contribute to an accident through their faulty judgment.

- An OH-58 IP gave the pilot a simulated engine failure over a soft, boggy soil covered with thick, bunchy grass. At touchdown, the toes of the skids dug into the soil, and the aircraft came to rest on its left side. Suitable areas, runways, and taxiways with hard surfaces were available nearby.
- The left engine propeller of a U-3 malfunctioned during a simulated single engine approach. After taking control of the aircraft, the IP chose not to go around or retract the landing gear to insure he could reach the runway. The aircraft was damaged when it landed off the runway. The IP did not believe the aircraft would fly on one engine.

**Inexperience and Command Supervision**

Inexperience and command supervision are lumped together because commanders should insure their IPs are properly qualified and proficient in the area of training they are to conduct. Some commanders haven't done this.

- A newly assigned IP was not given local area orientation training or a briefing of the prerequisites for emergency procedures before beginning his instructing duties. One of his students required additional training in autorotations to the sod. The IP was told where to find a landing zone (LZ) he could use for the required training. The LZ was located and a confined area approach was made. The IP hovered the UH-1 over the sod to check its suitability for autorotations. The student pilot then made a maximum performance takeoff. The IP had not performed a sod autorotation in about six months and did not demonstrate an autorotation before having the student do one. The student began his simulated forced landing and began to decelerate about 100 feet above ground level (AGL). He applied initial collective pitch about 10 to 15 feet AGL. As the aircraft neared the ground, the student pilot applied cushioning pitch without proper antitorque pedal application, and the helicopter yawed to the left. The IP took the controls but was unable to prevent the aircraft from touching down

on the aft part of the left skid, bouncing, and coming to rest inverted.

- An IP and pilot were on a UH-1 high altitude mission in mountainous terrain. The IP had no hands-on mountain flying training and no mountain experience in more than six years. On short final, the pilot was unable to maintain directional control, and the aircraft began to turn to the right. The pilot tried to fly out of the turn instead of landing as required by the operator's manual. Flight control inputs were ineffective and the aircraft crashed. The battalion commander had not checked the qualifications of his IPs who were managing and conducting the high altitude mountain training.
- A UH-1 student pilot was told to do a practice autorotation from a hover. Excessive application of right pedal early in the maneuver was detected and corrected by the IP, who allowed the maneuver to continue. The IP then waited too late to correct the student pilot's failure to apply cushioning pitch. When the IP did begin to take corrective action, the student suddenly applied collective. The aircraft climbed and fell about 20 feet, landing hard. The IP involved and another IP who witnessed the accident, both said they had received little to no training in recovery techniques required for common student errors.

**Too Late with Corrective Action**

Late corrective action by the IP is almost always a factor when accidents occur because of some incorrect action on the part of the student pilot. In some cases, IPs were not staying close to the controls. In other cases, IPs were "on top" of the controls but unable to prevent the accident.

- During termination of an autorotation with turn, an OH-6 student pilot was late with initial pitch while in a decelerating attitude. The tail skid hit the runway and separated, allowing the TR blades to hit the runway. The IP was too late with corrective action.
- A UH-1 student pilot was attempting an instrument takeoff from a level surface. Collective pitch was applied abruptly, causing the helicopter to roll to the right. The IP applied corrective control inputs but not in time to keep the aircraft from coming to rest on its side.
- During an autorotation, a UH-1 student pilot applied initial pitch without maintaining aircraft alignment with the antitorque pedals. The IP was unable to realign the aircraft with the antitorque pedals because his feet were incorrectly positioned for a quick response. The aircraft yawed to the left, touched down on the right skid, and rolled over inverted.

**Commentary**

Understandably, for maximum training benefit, IPs must allow student pilots to go as far into a maneuver as possible before assuming control of the aircraft. But when there is any doubt in the instructor's mind as to the safety of a particular phase of a maneuver, he should assume control immediately. The trick is to be able to anticipate rough situations just moments away and then take over.

To prevent accidents like these, commanders need to be especially careful about the selection of their IPs. After selection, commanders should insure that each IP is proficient in what he will be teaching. Insist that IPs demonstrate a maneuver before having student pilots try it. Make sure regulations and standard operating procedures (SOP) are strictly followed and prohibit the performance of unauthorized maneuvers. Support your IPs in their responsibilities. Don't demand more of them than can be reasonably expected. And remember, IPs are not infallible just because they are IPs.

IPs can improve their accident rate by never acting in an unsafe manner. If you don't think you are proficient enough to teach a certain maneuver or don't feel physically and emotionally capable of performing your duties, tell your commander. He just might listen. Obey all regulations and SOPs. Do not take shortcuts. Your students will quickly pick up shortcuts and continue to jeopardize flight safety.

IPs must have confidence in their abilities but guard against overconfidence in themselves and their students. Always be prepared to take corrective action. And, IPs must rely on their best judgment as to when to take control of the aircraft. This is one area of operation that cannot be dictated by rules. Knowledge, training, and experience must tell the IP when he should take over.

If commanders and IPs remain aware of the fact that IPs are human and just as capable of human error as anyone else, many IP accidents can be prevented. ■

# Mishap Briefs #91

*Information based on preliminary reports of aircraft mishaps reported in June.*

## ROTARY WING

**Utility**
**H-60**
**A Model**

- A Soldier was participating in hoist training operations. After being lowered to the ground, the Soldier was unhooking from the hoist cable when he slipped on uneven terrain and fractured his ankle. Flight Related. (Class C)

**L Model**

- During live hoist training of search and rescue (SAR) personnel, the incident aircraft experienced an issue that required the flight crew to cut the hoist cable with the SAR personnel approximately 3-5 feet above the ground. The cutting of the hoist cable caused the personnel to tumble resulting in non-life-threatening injuries. (Class C)

- The tail rotor (TR) de-ice cable broke off of the blue TR blade in flight resulting in damage to the TR de-ice assembly and an eight-inch by eight-inch T-shaped hole in the top skin of the stabilator. (Class C)

## FIXED WING

**UC-35**
**B Model**

- During takeoff the crew felt something abnormal and aborted the takeoff. The aircraft was taxied off the active onto the first available taxiway. Crew was notified by the control tower that there was smoke coming from their landing gear area. The crew shut the aircraft down on the taxiway and egressed the aircraft along with the passengers. The crew identified damage to the aircraft's main landing gear and tires. (Class C)

## UNMANNED

**MQ-1C**

- During post-flight, foreign object damage was found. (Class C)

**RQ-7V2**

- As the aerial vehicle (AV) was approaching the airstrip, the instructor operator (IO) noticed the tactical automatic landing system (TALS) was in suspend mode. The IO cycled power and the system completed a built-in-test. Once it was confirmed that the TALS was working correctly, the TALS began to bring the AV in for a landing. Just prior to reaching the airstrip, the AV suddenly dropped in altitude and landed hard just short of the beginning of the airstrip. The TALS failed to shut-off the engine upon landing which allowed the AV to go airborne for several more feet. During the landing, the arresting hook was pushed upwards striking and lodging itself into the center wing. This caused the AV to impact the arresting net without slowing first. (Class C)

## AEROSTAT

**Persistent Surveillance Systems-Tethered**

- Aerostat experienced a breakaway event during high winds. The system was tracked to a location within 10 kilometers of the base and recovered. (Class A)

**Flightfax**

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# Flightfax 5

## ASSESSMENTS

Assessments are a vital part of evaluation and validation of unit readiness. Assessments are not just one time efforts designed to tackle a readiness problem and then move on. Assessments, to be effective, must be ongoing efforts. Aviation units in particular use assessments in the form of no-notice flight training evaluations and annual flight performance evaluations. The aircrew training manual (ATM) is the bible for conducting aviation training for rated and non-rated crewmembers.

**Did You Know?**

There are other assessments which are just as vital to the health and operational capability of a unit. Field Manual 7-0, Train to Win in a Complex World, covers assessments in detail. Effectively assessing or analyzing unit readiness should be the first step for an incoming commander. As part of the analysis, the commander reviews the last assessments of the essential tasks to notate the company's current training readiness. This review helps the commander understand and visualize what the unit needs in time and resources to accomplish and support the battalion mission.

**Importance of Assessments**

For units to perform effectively and to standard requires the commander to complete an initial assessment and then manage the training required based on this assessment. From this point the commander and their team can focus on producing the appropriate training program to correct those areas where the assessment showed the unit was untrained or partially trained and bring it to a fully trained level. Once establishing the fully trained "T", the commander should ensure that continuation training and ongoing assessments occur to maintain the trained status. Assessments help the commander learn the unit, the mission, and personnel. This proves beneficial in developing and planning training while concurrently helping the commander drive down risk to mission and force by understanding the unit and personnel strengths and weaknesses.

Aviation unit standardization functional areas use initial assessments of crewmember performance to standard and follow with a detailed flight training program to bring the crewmembers to a fully mission capable ("T") status and conduct on-going evaluations to maintain the training levels. In the same respect, the assessment of the unit provides the commander with a method to evaluate, validate, and understand where the risks are in the unit. A clear understanding of elevated risks assists with developing a plan to reduce the risk.

## 5 Questions

1. Unit assessment by the incoming commander isn't necessary? Yes or No?
2. What reference should you look in to better understand assessments?
3. Besides unit training status, what else will the assessment provide?
4. Are assessments limited to aviation crewmember flight training?
5. Do assessments help the commander understand and drive down risk?

# ASSESSING YOUR UNIT

## COMMANDER IMPERATIVES

- Standards Section
- Maintenance Operations
- Mission Briefer and Approval Training
- Review ARMS Results Previous 2 Years

## ASSESS, IDENTIFY AND FIX!

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## KEYS TO AVIATION COMBAT READINESS