Flightfax
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# Standard Operating Procedures:
## *This is the way we've always done it.*

**As we near the end of the 4th Quarter of Fiscal Year 2020, the year has been fraught with numerous challenges requiring individual units, Army aviation, and the Army as a whole to review how it operates. Whether this is due to changes in the unit mission, in airframes, progress in future vertical lift, or the results of COVID, everyone must review how to execute training and operations within the new environment. Additionally, over the past 6 months, FlightFax focused primarily on the 4th Quarter Spike looking at how we assess, train, and transition our units deliberately. To be most effective, we must ensure that we codify these changes and best practices in standard operating procedures (SOP) to maintain standardization and continuity across our organizations as well as reduce overall workload.**

**What is the purpose of an SOP?**

According to Joint Publication (JP) 3-31, Joint Land Operations, "a standard operating procedure is a set of instructions applicable to those features of operations that lend themselves to a definite or standardized procedure without the loss of effectiveness." Therefore, the purpose of an SOP is to standardize how a unit operates through the use of organizational best practices to preserve the efficacy of the organization. Through the use of an SOP, each individual Soldier has a ready reference to understand how a unit operates and how specific tasks are to be accomplished at a specific unit. The SOP itself clarifies the nuances of operating within the limitations and challenges specific to each individual unit's circumstances to preserve and often improve efficacy.

**How does the SOP reduce workload and improve safety?**

Standard operating procedures can vastly reduce workload by garnering efficiency in operations. When developing an SOP, standardization provides common, tested procedures for executing specific tasks whether maintenance, administrative,

operational or many others in accordance with the best practices of the specific unit and mission. Additionally, since the procedure is established in writing and derived from appropriate regulations, it provides a single point of reference for all Soldiers conducting the task. This process eliminates wasted effort from each Soldier trying to determine his/her own version of the best way to execute a task. Furthermore, as part of the assessment process, SOPs address associated safety challenges to prevent accidental loss, preserve Army assets, and maintain unit effectiveness. Finally, it eliminates the loss of best practices due to Soldier turnover in the unit. The standardized procedure is codified for continuity, safety, and efficiency in the SOP.

**Is this really how we do it?**

When someone asks the question of "Why are you doing it this way?" during a task, many hear the response of, "Well, that's the way we've always done it." However, this statement alone doesn't give a sufficient answer as unit operational environments change. If an action is in fact the way it has always been done and is the best way to preserve effectiveness, then, it should be reflected in the unit SOP for standardization across the organization. If the action is not the most effective or codified in an SOP, then, the organization must conduct a reevaluation of the task to determine the best way to execute and then standardize the process. Following this evaluation, the determined best practice should then be incorporated into the unit SOP. The answer should never be "That's the way we've always done it." The answer should be "Because it's in accordance with our SOP."

Over time, the environment of the organization will continue to evolve with some changes more drastic than others. At a minimum, all SOPs should be reviewed and verified with the change of every program manager, coordinator, and/or commander to ensure the SOP remains valid. Essentially, whenever the signature block of the SOP changes, the SOP must be updated. In order to do this, the reviewer and signer must assess how the unit operates given the most current situation or forecasted unit environment and update the SOP. This ensures that the unit remains effective and efficient.

**How has this changed recently?**

Over the past 6 months, the operational environment has changed drastically due to the introduction of COVID-19 as part of our everyday lives. It has impacted daily routines, training, and operations due to social distancing requirements, changing schedules at work, additional personal protective equipment (PPE), changes in a permanent change of station (PCS)/deployment timelines, and other aspects peculiar to each unit. Over time, units continue to develop new ways to mitigate these challenges and change operations for safety, effectiveness and efficiency. These hard lessons learned have provided numerous modified and standardized procedures that should be codified in an SOP for all members of the unit to understand. As the environment and COVID-19 restrictions change, new challenges will arise necessitating a review of the SOPs to adapt to the next environment.

**Conclusion**

When was the last time your unit reviewed its SOPs? SOPs are there to support unit effectiveness, reduce workload, and improve safety through standardization of processes. SOPs must be validated often and updated as the environment, personnel, and standards evolve over time. They are designed to alleviate the need to tell each individual Soldier how to do a particular task instead of having them know, understand, and internalize a proven, standardized process. Standard operating procedures are there to improve overall unit performance. ■

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# Aviation Branch: *A UAS Template for Safety*

**Since 9/11, the world of unmanned aircraft systems (UAS) has rapidly evolved to meet the needs of combat commanders and our Army as a whole. Once a specialty of military intelligence, UAS now falls under the aviation branch and is integrated from the squad/platoon up through battalion, brigade, division and corps. Every UAS platform has proven indispensable as a combat multiplier and, most importantly, a lifesaver due to their invaluable surveillance capabilities without risk to human crews. Yet, the unfettered demand and growth of UAS during the past decade-plus has come at a price, namely lags in training, standards, safety and maintenance procedures.**

On the surface, these deficiencies might not seem a big deal but the second-order affects are costly. One of the chief appeals of UAS has been conducting dull, dirty and dangerous combat missions with high payouts relative to the cost of replacing crashed manned aircraft and the loss of life. But as we transition back to a posture at home, we cannot continue to be cavalier in accepting risk during unmanned missions. We typically lose UAS at a higher rate versus manned platforms, and with price tags ranging from the mid-tens of thousands (Class B and C accidents) to millions of dollars (Class A accidents). Budgets are constrained as funding shortfalls occur in line with priorities set by the Department of the Army. Even more significantly, we must have the utmost concern for UAS accidents occurring here in our home airspace, where population density on the ground and crowded skies above present the potential for deadly mishaps.

The biggest challenge for commanders, program managers, operators, and aviation safety officers training stateside is the fact that Army UAS are still largely untested in a garrison environment (with few exceptions i.e. Ft Huachuca and a few others). To date, approximately 90 percent of the 2 million-plus hours flown by our UAS fleet have been logged


in combat, with missions originating in some of the world's busiest airports and airspace shared with all types of manned aircraft. Those procedures have been fine-tuned out of necessity, and they work well in that setting. It goes without saying, however, that the level of risk and loss accepted in theater is untenable in the Continental United States (CONUS).

Small platforms are growing, embedded throughout the Army (but not under aviation's umbrella), and still require the same loss prevention programs. Regardless of where UAS fall within our larger tactical formation, commanders have an obligation to address common issues like airspace restrictions, training shortfalls, crew currency, and proficiency, gaps in maintenance practices and policies, and risk mitigation and acceptance in mission planning. Currently, some Gray Eagles and Shadows fall within a combat aviation brigade (CAB) or other aviation units with well-established safety processes, while other Shadow units are fielded to brigade combat teams (BCT) that may lack comprehensive training and loss prevention programs.

These programs need to address the hundreds of "tactical small" platforms to include: Short Range Reconnaissance (SRR) in Initial testing, Medium Range Reconnaissance (MRR) RQ-11 C Raven, and Long Range Reconnaissance (LRR) RQ-20 Puma which are occupying the same airspace. Standards, safety, accident reporting, maintenance practices, airspace usage, risk assessment and acceptance, are part of aviation's DNA, it has to be the same for UAS.

While the UAS program is still promulgating new systems and lower echelon unit usage, UAS proliferation has a profound impact on the way we fight today and far into the future. Manned-Unmanned teaming or MUM-T and multi-domain operations are not just buzz words but a reality. Changes have to be made at home stations to provide airspace availability for operational training for large UAS and the integration of the small platforms.

The answer to these challenges can be found in the aviation branch by adopting lessons learned from manned systems. We have proven and well-established manned aircraft in our fleet, with systems and procedures in place to maintain historically low accident rates. Lessons learned from decades of manned flight have allowed us to professionalize our crews, adopt realistic and tailored training strategies, and continually refine and improve aircraft to meet mission needs. In other words, aviation has an evolving safety culture that transcends location or aircraft type — aviators, non-rated crewmembers and maintainers are all raised on safety from their first days on the flight line. This template is absolutely applicable to UAS, let's use it. ■

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# 2410, It is More Important than You Think

**The recent Safety of Flight message for AH-64 and H-60 T700 series engine stage three nozzle inspection, required an initial records check and engine/power turbine module (PTM) data plate of every Blackhawk and Apache aircraft in the Army inventory. The serial numbers collected were compared to a list of 757 PTMs and 604 engines in an effort to find the suspect equipment. If the serial numbers were not on your aircraft, the inspection was complete and the aircraft was cleared for flight. If an engine with a suspect PTM module serial number was on the list, the engine had to be removed and the power turbine module removed from the engine for inspection. The inspection required locating the stage three nozzle seal and obtaining the serial number for comparison against a list of 38 serial numbers. If the seal was on the list, further inspection was required and the power turbine was placed in quarantine pending engineering analysis to prevent the possibility of uncontained engine failure that could injure aircrew/maintenance crews and cause significant aircraft damage.**

Technical Bulletin (TB) 1-1500-341-01 (available on LOGSA) requires all activities maintaining, stocking, storing, issuing, modifying, repairing and/or overhauling aircraft, aircraft components or assemblies assigned to the Department of the Army to comply with its content. This includes COMPOs one through three, depots and commercial contractors. BEFORE any managed component without the required documentation is installed the maintenance activity must contact the AMCOM "2410 Hot Line". Interchangeable replacement components listed in TB 1-1500-341-01 or in the Logistics Information System (LIS) Parts Master Legitimate Code File (LCF) received through supply channels with a part number not listed within the TB or the LIS Master LCF must coordinate the pending replacement action with the 2410 Hot Line PRIOR to the component being installed an aircraft.

Aviation maintenance management and historical data collection on important aircraft components/ parts are prescribed in DA Pam 738-751 (The Army Maintenance Management System-Aviation (TAMMS-A)). Timely processing/submission of all prescribed forms ensures successful utilization and collection of historical data. DA Forms 2408-16/16-1/16-2/33 and 2408-34 serve as permanent records for important historical data applicable to components, sub-components and parts. These forms identify the components, sub-components and parts installed on an end item (e.g. manned or unmanned aircraft). Data entry on the required forms is critical because it will be used for the completion of the DA Form 2410. The DA form 2410 allows AMCOM to track where the item is currently installed and where it has been installed in the past, tracks time on the item, documents repairs/ overhauls, and provides other current and historical data to be used by AMCOM, the engineering community, and Program Managers for analysis. The DA 2410 provides commanders and maintenance managers at all levels with data required for effective management of components and modules.

When a component, sub-component or part is removed from an aircraft or higher component, a new DA form 2410 will be completed and distribute in accordance with DA Pam 738-751. Failure to comply with this requirement may result in the mandatory condemnation or early overhaul of the affected component which wastes economic

and maintenance resources. Incorrect reporting could permit the use of a critical item beyond its prescribed maximum allowable operating time (MAOT) which could increase the danger of an in-flight failure. Only one DA Form 2410 is required when a major/higher component is removed. DA Forms 2408-16/16-1/16-2/33/34/5-1 for installed sub-components/parts will accompany the major/higher component through the repair or overhaul cycle. If a sub-component/part is removed (and not reinstalled) during repair or overhaul a separate DA Form 2410 will be processed for that item.

The maintenance burden of each Aircraft Mission, Design Series (MDS) in the Army inventory varies greatly and is affected by operational environment and OPTEMPO. Quality Control (QC) sections process hundreds of transactions in the Army Logistics Information System (LIS) annually. Staying ahead of the paperwork (data entry) is a challenge for even the most efficient/adequately staffed QC shops. If you have enough personnel available, assign a technical inspector to a shift opposite of when the majority of maintenance is occurring to facilitate data entry with minimal disruptions. Attention to detail is required to ensure all required data fields are annotated correctly in the Maintenance Consolidated Data System (MCDS), one wrong keystroke and the DA 2410 can get hung up in the system. While often necessary to accomplish the mission, controlled exchange exacerbates this challenge by literally doubling the number of transactions required; minimize controlled exchange to the maximum extent possible to ease the maintenance and data entry burden on your maintainers and technical inspectors. As a best practice, technical supply should coordinate with QC on parts, components and sub-components as they are received to ensure the appropriate paperwork arrives with the item. This practice can allow the appropriate coordination (i.e. contacting the 2410 hot line) to occur before the item is needed to return an aircraft to fully mission capable. Removed items should have a material condition tag and a DA 2410 prepared to accompany the item and be returned to tech supply expeditiously. Safety of Flight, ASAM, and AMAM compliance/non-compliance will be annotated on the material condition tag. When items are packaged or stored in a container a duplicate tag should attach to the outside of the container.

In the end, quality maintenance requires quality paperwork. The 2410 item in particular is about tracking the condition of parts over time and ensuring that items are operated to design specified limitations. This aids in preventing the unexpected failure of critical flight components that could lead to a catastrophic incident in the air or on the ground. Quality paperwork aids in the accurate identification and tracking of these components for safe continued operations. The soul of maintenance is providing safe and effective combat power to support operations through total quality management. ■

**2410 Hot Line:**

DSN 897-2410 or commercial at (256) 313-2410 or Toll Free at (877)-511-8139 or usaarmy.redstone.usamc.mbx.immcdata2410@mail.mil.

**References:**

*AR 750-1 Army Materiel Maintenance Policy*

*DA PAM 738-751 Functional User's Manual for the Army Maintenance Management System - Aviation*

*TM 1-1500-328-23 Technical Manual Aeronautical Equipment Maintenance Management Procedures*

*TB 1-1500-341-01 Aircraft Components Requiring Maintenance Management and Historical Data Reports*

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# Sling Load Fundamentals

**Ask any CH-47F "Chinook" pilot or crewmember about conducting a sling load mission and the most likely reply will be "Is it a Blackhawk?" Sling load operations are a base task for CH-47 and UH-60 pilots and crewmembers and often become second nature. Even with the motto "You Call, We Haul" the Chinook has its limitations like other aircraft. Let's take a closer look at a couple of critical areas of sling load operations which sometimes are overlooked during preparation for sling load operations.**


**Inspection of Loads:**

During mission planning, units need to evaluate their inventory of slings to ensure they are serviceable and meet inspection criteria before use. Army loads must be inspected prior to the arrival of the supporting aircraft by a current and qualified inspector. These inspectors must be in the grade of E4 or above and a graduate of one of the following: Pathfinder, Air Assault or the Sling Load Inspector Certification Course (SLICC). Documentation of the inspection is vital to the flight crew that will transport the load. Flight crews need this information to be accurate for performance planning, validation of the weight of the load, and to ensure the aircraft will maintain within center of gravity limits while in flight. Once the aircraft is on the ground the supported unit will provide the flight crew with their copy of the load inspection. As an additional safety measure, always make time for the flight engineer (FE) to conduct a visual inspection of the load. Rated crewmembers (RCM) will verify DA Form 7382-R is complete and on file and that the aircraft will remain within gross weight (GWT) and center of gravity (CG) limitations. This will be validated during the hover power check before takeoff. Before the load is picked up, the non-rated crewmembers (NRCM) ensure the aircraft is prepared for external load operations and inspect the sling(s) equipment in accordance with (IAW) Technical Manual (TM) 4-48.09, Multiservice Helicopter Sling Load: Basic Operations and Equipment. Remember that the pilots make the final decision on whether

the cargo will be moved, based on the weight and validation of the performance planning of the aircraft.

**Training:**

Commanders have a responsibility to train their Soldiers and they can accomplish this by providing them the opportunity. A simple DA Form 4187, Personnel Action, can be submitted through both the S1 and S3 to send Soldiers to Pathfinder, Air Assault or the Sling Load Inspector Certification Course (SLICC). The unit will need to coordinate to conduct early coordination to schedule these classes. While Pathfinder and Air Assault schools are ATRRS courses, the SLICC course is conducted as a resident course at Fort Lee, and as a mobile training course at various host installations. More information on this course can be found at the following link: https://quartermaster.army.mil/adfsd/adfsd_sling.html

Aviation and ground units have a responsibility to ensure the individuals selected to execute these tasks are current and qualified. Leaders should not assume that everyone in aviation or ground units are Air Assault or Pathfinder qualified. Unit commanders are responsible for training their personnel and determining the level of proficiency for personnel involved in sling load operations. Appendix J of TM 4-48.09 provides a recommended list of types and hours of sling load training. As a reminder units cannot train or certify personnel as sling load inspectors. An aviation liaison officer (LNO) will ask during the coordination between the supporting and supported units to assist in risk reduction and implementing controls to the sling load mission. Communication between the flight crew and ground personnel is an important part of ground crew training for the safety of both the ground and aircrew. Flight crews can provide more detail of what they expect during the pre-mission planning and verify during rehearsals.

**Safety:**

In order to safely conduct sling load operations, each individual must be aware of the safety hazards they will face, such as static electricity, rotor wash, and other hazards possible while in close proximity to the aircraft. The helicopter crew will conduct the flight IAW applicable service procedures and regulations. Static electricity must be discharged in all helicopters prior to connecting a cargo sling or net to the aircraft's hook. Whether the flight crew lands the helicopter or a static line is manned by the hook-up crew, there is a risk of being shocked. Units are required to ensure Soldiers are trained and equipped with the correct personal protective equipment (PPE) for every mission and to assist in the reduction of risk.

Personal protective equipment is critical when rotor wash is present. Protection of the eyes and head is vital to personal safety. Flying debris can cause injury to the Soldiers and damage to equipment or surrounding structures. An inspection of the landing zones (LZ) and pick-up zones (PZ) can reduce the risk of flying debris like pallets, boards, parachutes, or trash. Knowing the conditions of the LZ/PZ can greatly reduce the workload of the flight crew. With winds exceeding 120 knots it can be difficult to walk or see when maneuvering under the aircraft and the load. Minimizing the amount of personnel on the hook-up team will also reduce the risk of injuries.

**Stats:**

Below are a few mishaps related to sling load operation over the last 10 years. Although not all of these resulted from improper inspection of the load or a lack of trained sling load personnel, this does not mean we shouldn't care about these hazards relating to the critical phases of sling load operations. Every potential overlooked hazard could lead to the next mishap. So, we must ensure that leaders know what right looks like and evaluate every phase of the operation to mitigate any potential risk.

| DATE | A/C | CLASS | FACTORS | COST | CAUSE |
|---|---|---|---|---|---|
| April 2010 | CH-47 | E | Human | $15,999 | During hookup forward reach pendant contacted VOR antenna |
| May 2017 | UH-60L | C | Unknown | $55,000 | Un-commanded release on final |
| September 2019 | UH-60L | C | Human | $321,537 | Sling rope tore during flight and dropped load |
| October 2019 | CH-47F | A | Human | $2,500,000 | AH-64E damaged during sling load upon setting load down |
| November 2019 | UH-60A | D | Human | $22,807 | Water bucket contacted trees |
| December 2019 | CH-47F | B | Materiel | $1,340,000 | Un-commanded release of shipping container |
| April 2020 | CH-47F | E | Human | $6,611 | Reach pendant lower loop failed |

**Summary:**

Whether an aviation unit is conducting training or supporting a ground force commander down range, it is critical to look at all aspects of sling load operations to ensure we are mitigating risk and executing our mission to the fullest. From a sling load training block to a non-standard sling load, ground personnel, and flight crews need to treat every load with attention to detail as if it was the first load they ever rigged, inspected, or, slung. For additional information about sling load operations please reference the Aircrew Training Manual (ATM) associated with the particular aircraft.

Knowing that the sling load and equipment were inspected by a properly trained individual is one less thing the pilots and crewmembers have to worry about and helps to mitigate risk during sling load operations. "Asking is not checking, checking is checking," so please validate your personnel and make sure you are on the right side of risk. ■

**References:**

*CH-47 Series Aircrew Training Manual*

*Task 2048, Perform External (Sling) Load(s) Operations*

*Task 2052, Perform Water Bucket Operations*

*TM 4-48.09 Multiservice Helicopter Sling Load: Basic Operations and Equipment*

*TM 4-48.10 Multiservice Helicopter Sling Load: Single-Point Load Rigging Procedures*

*TM 4-48.11 Multiservice Helicopter Sling Load: Dual-Point Load Rigging Procedures*

**Links:**

*https://quartermaster.army.mil/adfsd/adfsd_sling.html*

**Videos:**

*https://www.dvidshub.net/video/455400/ch-47-chinook-sling-load*

*https://www.dvidshub.net/video/288064/sling-load*

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# Mishap Review - CH-47D Unique Sling Load

**While conducting an external load training operation with a CH-47D and a stripped-down Sea King aircraft fuselage (unique load) as the training load, the flight instructor transmitted an improper command, an imminent danger call, which resulted in the crew executing an emergency release. When the flight crew released the load and repositioned the aircraft to the right as briefed in case of an emergency, the aircraft rotor wash caused the load to become unstable and to roll. During the load rollover sequence, a ground crew member positioned on top of the load fell to the ground, and the load rolled over him causing fatal injury.**

### History

The mishap crew's mission was an external load operation in support of an allied nation army. The CH-47D was to transport a de-milled Sea King helicopter, a unique load, from an airfield to a field site in support of a notional combat search and rescue/battle damage and recovery mission with a second aircraft transporting a film crew (a Discovery film crew would be videoing the operation.)

The load was inspected by crewmembers several times prior to execution to ensure the rigging was correct. During the inspections, the crewmembers did not ensure the load was rigged in accordance with (IAW) the appropriate manuals (the load was being stabilized by several straps to maintain it in an upright position which was not IAW proper sling load rigging procedures.) The crews received the appropriate briefs and departed as a flight of two aircraft, with the unit aviation safety officer (ASO) as the air mission commander in Chalk 2. The aircraft arrived on the airfield and positioned behind the unique load. The flight instructor (FI) exited the aircraft and met the ground sling crew noncommissioned officer (NCO) in charge and again inspected the load.

The mishap crew then proceeded to lift off and hooked up to the unique load. Once hooked the sling crew removed two of the stabilizing straps from the right side of the unique load. Once these were removed the load started rocking. At this point instead of giving a normal release command after informing the crew why, the FI gave them an imminent danger call and the crew executed an emergency release and repositioned to the right as was briefed. As the CH-47D hovered away to clear the load, the aircraft's rotor wash blew the load over and it began to roll. The hook-up crew, which was still on top of the fuselage were thrown off the load, with one of the hook-up crew members being caught underneath the load as it rolled over. The load came to rest on its left side with the Soldier, fatally injured, beneath it.

### Crew

The PC had 2,309 hours in MTDS and 2,651 hours total time. The pilot (PI) had 1,302 hours in MTDS and 3,955 hours total time. The flight instructor (FI) had 1,293 hours in MTDS and 1,293 hours total time.

### Commentary

The leadership and crew failed to properly execute risk management for this mission. The unique load presented a significant hazard due to the unit having never executed a sling load of this type. No training and rehearsal was executed to familiarize the crew with the task. Additionally the load was improperly rigged and incorrect sling load equipment was utilized for the task. The crew was complacent and overconfident in their ability to execute the sling load of a unique load with modified rigging.

Executing sling loads requires the appropriate training and mission rehearsal to ensure that all possible hazards are identified. This is inclusive of the ground hook-up crew, the aircrew, and the unit leadership. While the ground hook-up crew, aircrews, and AMC were involved in the mission briefing and the inspection of the loads, the hazards of this unique load were not identified and mitigated. Proper crew coordination begins at the notification of a mission and continues until the mission post-brief is completed. Leaders should ensure that each mission is reviewed and hazards identified and risk mitigation controls put into effect. The aircrews executing the mission continue this hazard identification and additional control implementation executed to continue to drive down the risk. Don't forget about the ground hook-up crew in the risk management process. They are just as important in reducing the risk as the supporting unit crew and leaders. Make sure they understand how to identify and drive down the hazards. Remember, in Army operations, there is no room for taking shortcuts in training, rehearsing, and managing risk. ■

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

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# Getting Back to the Basics

***Failure to execute "the basics" is costing the Army precious resources that we cannot afford to lose.***

**The basics may include using the proper equipment to inflate a split-ring rimmed tire, properly training and licensing drivers, conducting a thorough passenger briefing, or making on-the-spot corrections during training exercises. Combinations of high optempo, fatigue, personnel turnover, overconfidence, and complacency have caused us to forget the basics, and our Soldiers and our Army are paying the price. Injuries, destruction of equipment, and most tragically, fatalities are often the consequences of letting our guard down during basic day-to-day operations.**

The leading causes of aviation and ground accidents continue to be overconfidence and complacency that often result in soldiers failing to execute operations using the task, conditions, and standards to which they were trained. Evidence suggests that leaders rarely check to ensure that routine duties— the simple things—are performed to standard. Unsupervised, a soldier's desire to accomplish the mission can lead to taking shortcuts. Shortcuts in routine duties often lead to shortcuts in more complex tasks, and those shortcuts often lead to disaster.

**"We are destroying equipment and putting Soldiers at risk because they are taking shortcuts and not executing the basics."**

Examples of accidents caused by overlooking the basics are located in the database here at the Safety Center and are too numerous to list. These accidents share a common thread--somewhere in the accident sequence, someone knowingly violated a basic standard or standard operating procedures (SOP), usually with good intentions, often trying to make things easier, and with mission accomplishment as the goal. In many of the cases, leaders failed to take corrective action either before or during the accident sequence.

Active leadership is the key to halting this alarming trend. When Soldiers violate a procedure or standard, leaders must take immediate action to correct the situation. In effect, failure to correct the violation sets a new, lower standard. It legitimizes the shortcut. Leaders at every level must establish procedures, and set and enforce standards that focus on doing things, including the routine things, the right way every time. This is something that we owe our Soldiers. Tasks, conditions, and standards; SOP; and regulations have been developed over time for a reason: to ensure safe, efficient operations. Enforcing them is one of the best ways we can take care of our Soldiers. Taking or allowing shortcuts does not help our Soldiers nor does it help us maintain an Army that is combat ready.

Setting the standard is a function of command; however, the primary responsibility for ensuring execution to standard lies with first-line leaders. The squad leader, instructor pilot, team chief, and even the "battle buddy" must understand fully what the standards are and understand that shortcuts are not the answer. Our junior NCOs and officers must be the commander's controllers. Tell them what you want and the standards to which you expect your Soldiers to perform. Give them the authority to enforce those standards and halt unsafe activities. Then hold them accountable. They must set the example and be the commander's representative in garrison, in training, and during deployments.

We are an Army of standards, and we know the basics contained within those standards. We execute them every day. But the trends indicate that collectively we are letting our guard down. We are destroying equipment and putting soldiers at risk because they are taking shortcuts and not executing the basics. Don't let the next fatal accident be on your watch because you took the basics for granted. ■

# Class A - C Mishap Tables

| | Manned Aircraft Class A – C Mishap Table | | | | | | as of 24 Aug 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 | 2 | 3 | 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 | 6 | 0 |
| 4th Qtr | July | 2 | 1 | 2 | 0 | | 0 | 2 | 8 | |
| | August | 1 | 0 | 3 | 1 | | 0 | 2 | 4 | 0 |
| | September | 2 | 1 | 8 | 1 | | | | | |
| | Total for Year | 12 | 9 | 41 | 3 | Year to Date | 6 | 9 | 47 | 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: 0.73 | | | |

| | UAS Class A – C Mishap Table | | | | | as of 24 Aug 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 | 6 | 1 | 3 | 10 |
| MQ-5 | 1 | 0 | 0 | 1 | Hunter | 0 | 0 | 0 | 0 |
| RQ-7 | 1 | 13 | 38 | 52 | Shadow | 0 | 11 | 19 | 30 |
| 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 |
| | | | | | Other | 0 | 0 | 1 | 1 |
| UAS | 11 | 15 | 42 | 68 | UAS | 6 | 12 | 24 | 42 |
| Aerostat | 1 | 1 | 1 | 3 | Aerostat | 3 | 0 | 0 | 3 |
| Total for Year | 12 | 16 | 43 | 71 | Year to Date | 9 | 12 | 24 | 45 |
| 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: 7.11 | | |
| RQ-7B Class A-C | 5 Yr Avg: 58.29 | | 3 Yr Avg: 69.64 | | FY 19: 106.20 | | Current FY: 118.39 | | |

# Mishap Briefs #93

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

## ROTARY WING

**Attack**
**H-64**
**E Model**

• The mishap aircrew was conducting a multi-ship training flight and was practicing landings to a point in an open field. During an approach, the mishap aircraft touched down with a 300-400 foot per minute rate of descent. The aircrew heard a sound which led them to suspect the 30mm gun came in contact with the ground. The mishap crew had their sister ship visually inspect the 30mm gun and they confirmed dirt and grass were seen in the gun cradle. The pilot-in-command (PC) of the mishap aircraft terminated the training flight and returned to home station. The crew identified damage to the B90 and B210 panels and the area weapons system mount. (Class B)

• During the conduct of a night vision device currency reset flight prior to the unit stop fly date (due to upcoming National Training Center deployment), while the aircraft was on the auxiliary power unit the aircraft registered pressure reducing shutoff valve faults on the engine No. 1. Upon returning, crew chiefs noticed that the No. 1 nacelle was open. The crew shut the aircraft down and discovered structural damage to the No. 1 nacelle and No. 1 wing. (Class C)

**Utility**
**H-60**
**L Model**

• While performing preflight on an aircraft in parking, an aircrew member noticed damage to a tail rotor paddle. It was determined that it was incurred from a lightning strike from a storm that occurred a couple of days prior. In addition, the stabilator actuators were reported damaged. The aircraft was inspected in accordance with the lightning strike work package. (Class C)

**M Model**

• During routine training, while conducting landings, the aircrew landed the aircraft on uneven terrain. During the landing, the aircraft forward-looking infrared (FLIR) made contact with the ground causing damage to the FLIR. (Class C)

• While conducting an environmental training flight, the crew conducted a dust landing at a landing zone. The crew noticed when landing that their right main landing gear was in a slight depression previously unnoticed. The PC directed the crew chief (CE) to check the FLIR as a precaution. The CE reported that the FLIR lens was damaged but the FLIR was not suspected to have impacted the ground. The FLIR appeared to still have plenty of clearance, and the crew suspected the lens was damaged by a rock or some other object during the dust landing. Upon further inspection, the FLIR operates normally with the exception of having a damaged lens. The initial cost of the accident is based on 15 percent of the major component having to be returned to FLIR systems for repair. (Class C)

**Cargo**
**H-47**
**F Model**

• A group of Soldiers removed both engines from the aircraft and placed them on a ground support equipment (GSE) engine mount on 6 Aug 2020. The following day, another Soldier was conducting a ground inspection on one of the engines when the engine came loose and rolled off the GSE. The rolling motion triggered the other engine to roll off of the GSE mount as well. As a result, both engines and the GSE were damaged. The Soldier conducting the inspection suffered minor cuts to his right middle and pinky fingers. There was no other personnel injured. The mishap is under investigation. (Class B)

## UNMANNED

**MQ-1**
**CER Model**

• The unmanned aircraft system (UAS) experienced a drop in fuel rail pressure with subsequent full authority digital engine control degrade to 4. The crew received a Low RPM warning caution advisory (WCA) with an associated Engine Out WCA. The

crew attempted to restart at 5,000 feet, but the restart was unsuccessful. The UAS impacted terrain approximately 35 nautical miles west of the airfield with two HELLFIRE missiles onboard. A downed aircraft recovery team (DART) deployed to recover the UAS. (Class A)

**RQ-7V2**

• While executing an approach, initial indications from the instruments showed a headwind. At 300 feet, there was a change in wind direction indicating a tail wind but within limitations. Approximately one second prior to a decision point, indications changed to a tail wind greater than 5 knots (outside of aircraft limitations). As a result, the UAS experienced a hard landing and broke the front landing gear upon impact. This caused damage to the prop, payload camera, and communications relay system antennas. (Class B)

• The UAS skipped the primary and secondary pendants, but the landing gear/tail hook caught on the net during its final bounce. The landing gear was ripped off the UAS. The UAS then hit the taxiway and came to rest in the dirt. (Class C)

**FVR-90**

• During initial takeoff, the UAS was unable to attain its transition airspeed of 40.2 knots indicated air speed. Since the UAS was unable to transition into flight mode, the vertical takeoff and landing (VTOL) motors continued to run and were completely depleted after 300 seconds. During this time, the aircraft operator (AO) attempted to land the UAS but was unable to maneuver the UAS prior to the VTOL motors dying. Once the VTOL motors were depleted, the UAS transitioned into flight but was still unable to gain altitude. The AO found a suitable ditching point to use and then ditched the UAS. (Class C)

**Flightfax**

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## SLING LOAD OPERATIONS

Sling load operations are of vital importance to the Army during combat operations. The ability of Army aviation utility and cargo aircraft to provide support to ground forces utilizing external load capabilities gives the ground forces commander combat critical re-supply on demand across the battlefield.

While Army aviation units conduct these operations routinely, this can lead to crews performing the tasks to become complacent and overconfident. This too can occur for the ground hook-up personnel. After performing rigging and hook-up procedures for utility and cargo aircraft routinely, the ground personnel can fall prey to complacency and overconfidence.

So how can Army aviation crewmembers and ground personnel who conduct the rigging and hook-ups to aircraft stay out of the pitfalls of complacency and overconfidence? Here are some measures that can be utilized to increase performance of the tasks and decrease the likelihood of becoming complacent or overconfident.

**Understand**

Understand the task. For aviation personnel they can refer to their aircraft aircrew training manual (ATM). While the ATM addresses the flight crew task, condition and standard for external loads, it doesn't cover the "other stuff". To preclude complacency or overconfidence, the crew should also understand the ground side of the task, the rigging and the hook-up task. Crews should understand the certification process for being able to sign off an external load as correctly rigged. Additionally, the crew should interact face-to-face with the hook-up team to ensure they are fully briefed and understand the procedures. If possible, the rigging and face-to-face coordination should take place well before the external load mission has to occur. This gives more time for the aircrew and ground crew to ensure the loads are rigged correctly, address any hook-up personnel issues, and assess risk to the mission and force. Review these publications to meet the standard: Army Regulation (AR) 95-1, Flight Regulations; AR 95-27, Technical Manual (TM) 4-48.09, Multiservice Helicopter Sling Load: Basic Operations And Equipment; TM 4-48.10, Multiservice Helicopter Sling Load: Single-Point Load Rigging Procedures, TM 4-48.11, Multiservice Helicopter Sling Load: Dual-Point Load Rigging Procedures, TM 10-1670-295-13&P, Operator and Field Maintenance Manual Including Repair Parts and Special Tools List (Sling and Cargo Net); Aircraft Operator's Manual, Training Circular (TC) 3-21.60, Visual Signals; and unit standard operating procedures (SOP).

**Train**

Train the external load task. Training for external loads should be conducted routinely. Every iteration that can be executed with units that the aviation team support habitually provides a synergistic effect. There is no substitution for live training during external loads, for aviation and ground teams. And leaders, don't forget you are just as important in the training sequence. Mission briefing officers should be just as integrated into the training as their flight crews and the supported unit ground team. To fully understand what they are briefing requires more than a cursory knowledge of the task. This also provides live training to understand the task and manage controls to reduce risk.

**Rehearse**

Rehearsals are a critical part of getting the task and mission done right. Just because an aviation team and ground team have conducted the external load task a thousand times doesn't mean a rehearsal isn't required. Every mission has different variables, while the task may be the same. Leaders provide your aviation and ground teams the time to rehearse and be part of the rehearsal. Rehearsals are the most important task to find the bugs in the plan and task to be conducted while affording ample time to identify hazards and implement controls. The time to figure out two of the three ground hook-up team members have never conducted a live hook-up isn't when you hover over the load and there is a mishap.

## 5 Questions

1. What manual provides aviation crews with external load task standards?
2. What manual tells you about the sling sets and cargo nets?
3. What manual should ground external load hook-up teams be familiar with for rigging single-point?
4. As an aviation crewmember, there is no reason to meet with the ground hook-up team? Yes/ No?
5. Leaders don't need to be involved in the rehearsal, right? Yes/ No?

# HIGH HOT HEAVY

***A recipe for disaster if you don't do proper planning!***

- **Know the environmental conditions you will be operating in during the mission**
- **Know your aircraft performance limits**
- **Make sure your crew knows and understands your performance planning numbers**
- **Brief performance parameters to the crew and address critical tasks associated with performance**
- **Rehearse the mission and define where power will be marginal during the mission**

## PLAN IT, BRIEF IT, REHEARSE IT

***take the danger out of high, hot, and heavy***

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