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The Unit Training Plan:
Is your unit ready to run?

During the last few issues of FlightFax, we have looked intently at the 4th Quarter Aviation Spike in Class A accidents, specifically those occurring over the past 5 years. After being introduced to the myriad challenges during the 4th Quarter, the Combat Readiness Center provided different recommended mitigations to dampen the spike. Topics included Crew Selection, Environmental Training, Managing Transitions, and Unit Assessments in order to proactively approach this challenging time of year. There must be a deliberate plan of attack to preserve our Army assets while continuing an aggressive training program. While the focus of these past FlightFax articles was on issues during the 4th Quarter, it is now time to take a long-term approach to plan in order to minimize spikes throughout the entire year. Careful and focused unit training plans prepare units progressively to perform at levels that are more complex.

Assessments drive training

Many have said that the best place to start is at the beginning. While that may appear to be a basic fundamental, new leaders arrive at a unit that is already operating at a run. They then often decide to assess unit deficiencies while watching the unit conduct its mission at a running pace. However, this is a reactive response to an already established problem instead of proactively driving the training plan based upon established regulations, standards, and the true unit Mission Essential Task List (METL). Assessments are the beginning and help the unit determine not only if they are performing tasks to standard, but also whether they are training appropriately for their specific wartime mission.

Perhaps the most important tool to help with assessing the unit-training plan is the Army Training Network (ATN) which provides the unit Standard METL. The basis for each unit is the Standard METL provided for the battalion and company levels and includes a list of all mission essential tasks as well as their supporting collective tasks. Additionally, each supporting collective task is further subdivided into smaller collective and individual tasks with Training and Evaluation Objectives (T&EO). By reviewing the Digital Training Management System (DTMS) training records, new leaders can determine if the necessary individual tasks are complete to standard prior to moving on to collective training. Essentially, through review of the Unit Status Report (USR), Unit METL, and training records in DTMS, leaders can determine if their unit is at the crawl, walk, or run status of training prior to executing a task for which the unit may or may not be ready. This is the same reverse planning methodology used when planning a mission: determine the end state and work backward to develop the phases of the training plan.

Training is a Mission Essential Task

Leaders cannot expect to successfully execute their METLs without training. A unit's METL is the list of required capabilities in support of the Combatant Commander. It is the culmination of training from the individual to the collective level to provide a specified task to have the desired mission effect. In order to achieve this desired end state, training is a Mission Essential Task and requires deliberate planning by the commander.

To help new leaders, ATN provides the supporting Combined Arms Training Strategy (CATS) to assist leaders at all levels in developing unit training plans through a template so that they don't have to develop the plan from scratch. CATS provides a generic unit training plan that is tailored to a specific type of unit and grouped together through a logical

progression of training. It lists the recommended resources, frequency and number of iterations, and the type of training event, such as Sergeant's Time Training, Field Training Exercise, or possibly a Table Top Exercise. After assessing the unit through USR and DTMS, new leaders can tailor the CATS for their specific training deficiencies and requirements prior to executing any training. Then, the unit can execute focused training that is more efficient and effective. Additionally, the CATS template provides a method to conduct initial, refresher, and continuation training thereby maintaining the unit in a fully trained status through the development of long-range training plans.

Readiness Level (RL) Progression and Integration is the model

Developing a unit-training plan is nothing more than RL Progression for the unit prior to full integration into a combined arms team. RL Progression is the model for a solid training plan through training at the individual level prior to full integration at the collective level. From RL3 to RL1, each aviator must do individual tasks that create a fully functioning member of a crew. This is the same for all members of any unit, based on the specifics of their particular Military Occupational Specialties (MOS). These individual tasks create Soldiers capable of integration at the full unit level and integration into unit collective tasks.

Once all Soldiers are "RL1," leaders integrate them into collective training, whether in a ground vehicle or an aircraft, to train the unit as a whole. Progressively, this starts at the team level and continues moving forward to more complex operations achieving company and battalion METL tasks. As individuals become more capable of performing collective tasks, the unit achieves and hones its METL skills to become a member of a combined arms team. Once unit "RL Progression" is complete and evaluated, the unit can be assessed as trained and ready. Then, the unit can steadily execute continuation training to remain ready to deploy when called – ready to run into battle.

Safety is crucial to the Training Plan

Finally, safety cannot be an afterthought when it comes to developing a training plan. In fact, the entire purpose of the progressive training model from the individual task to the collective level is about safely training Soldiers and incrementally improving their performance by providing additional skills and knowledge. During the assessment of the unit, leaders must evaluate how safely a unit executes tasks to ensure that units are not just completing a task but conducting the task most efficiently, to standard while preserving Army resources.

Furthermore, part of the unit-training plan must include training Soldiers on how to dynamically assess risk while executing their mission. Many times, the Deliberate Risk Assessment Worksheet (DRAW) is seen as a mere formality to get a training area or to get training approved instead of as a method to preserve Army resources. Leaders must train their Soldiers to operationalize risk in such a way that risk assessment and mitigation are second nature during mission execution. Training Soldiers how to dynamically assess risk during a training environment will increase their ability to execute safely in a combat environment that is more complex and dynamic.

Conclusion

A unit-training plan is a contract with Soldiers to ensure that they will be ready to deploy, fight, and win on any battlefield. Leaders must ensure that the unit is training in order to execute the right missions to standard and make certain that Soldiers are constantly progressing in their skill levels. Assessments drive the training plan by evaluating where Soldiers and the unit are challenged or exceptionally successful to determine the allocation of training time and resources. Progressing the unit to a fully trained status requires a training plan that grows with the unit. Ultimately, the unit training plan will determine the success of a unit in combat when winning matters! ■

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Army Training Network (ATN) - https://atn.army.mil/

Digital Training Management System - https://dtms.army.mil/

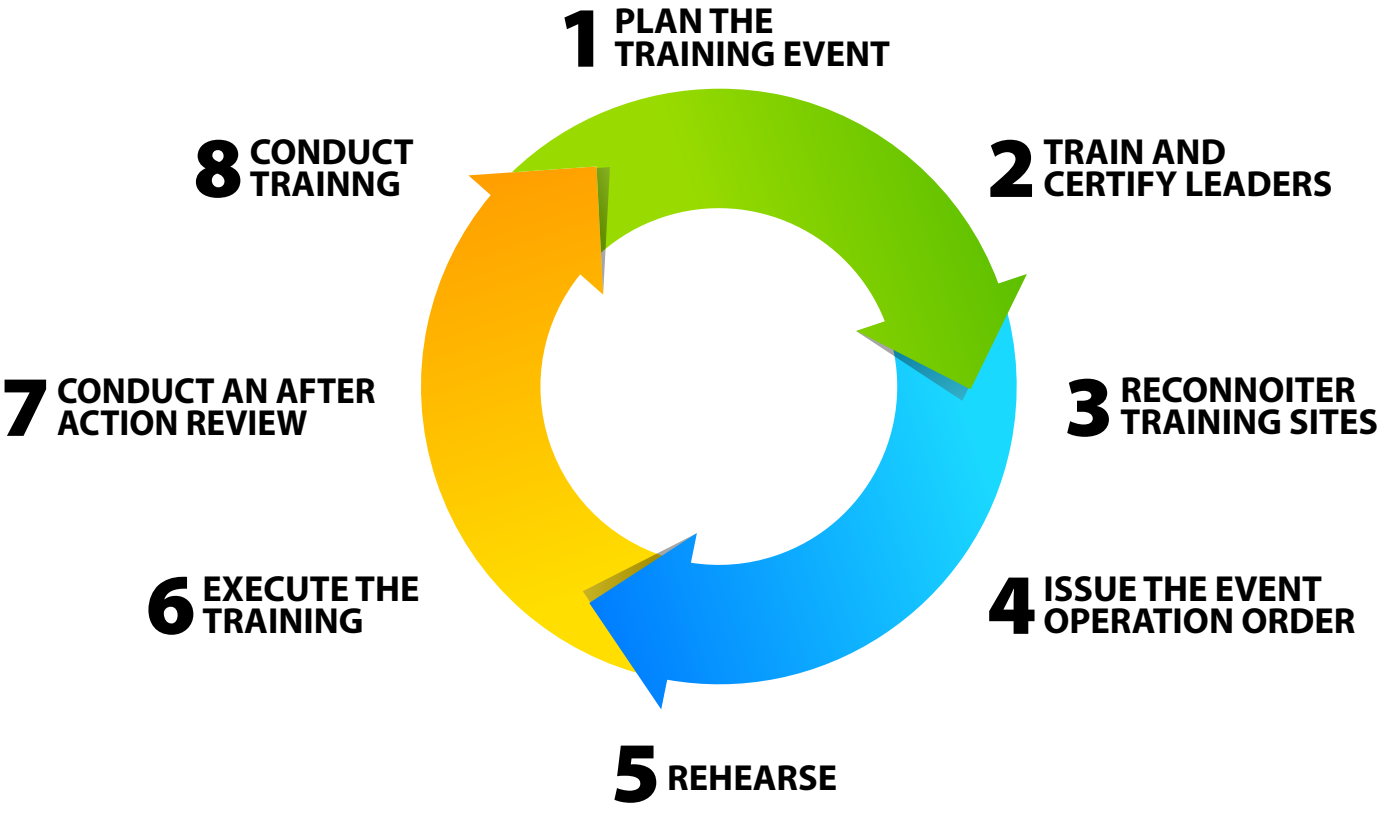
Situational Training Exercise Development

Field Manual (FM) 7-0, Train to Win in a Complex World, states, "Leaders use situational training exercises (STXs) and lane training exercises (LTXs) to assess unit collective training. An STX is a mission-related, limited exercise. This short, scenario-driven exercise trains a group of related tasks or battle drills through practice. An STX usually contains multiple collective tasks linked to form a realistic scenario of a military operation, sometimes incorporating free play. STXs are used for training and evaluation, especially sustainment of task proficiency. STXs are developed by Army branch proponent schools reflected in the unit CATS or developed by a unit as required." In particular, for aviation units, they are a valuable tool that allows the commander to conduct directed training in simulated combat conditions using aviation simulation devices (some examples are: full-motion simulator, reconfigurable cockpit trainer.)

The ability of units to train these scenarios provides an opportunity to reduce risk to mission and force. Going through scenarios prior to executing the mission in the aircraft, in real time, allows risk to be identified and controls integrated. Follow-on scenario execution with controls integrated allows the commander to further assess if the controls manage the risk appropriately. This gets at putting assessment in the beginning as well as at the end of training.

Army aviation units can utilize STXs developed in the Combined Arms Training Strategy (CATS) while also having the ability to develop STXs particular to a specific training strategy the commander determines will bring their crews to a fully trained status. To develop an STX, the unit can use the 8-Step Training Model which is found in FM 7-0, Chapter 3. The graphic below summarizes the 8-Step Training Model.

Units should use the 8-Step Training Model as shown in FM 7-0, at the company and platoon level,



the training models are developed and used as a simple and effective planning and execution tool for small-unit, individual training events. FM 7-0, states about using models that "they serve as a useful tool for subordinate leaders to ensure major activities and steps are accomplished. Training models help manage training events that are not complex in planning or execution. Units modify training models in the number of steps and procedures based on experience and the efficiencies gained by their use. The 8-step training model provides a flexible and reliable vehicle for creating continuity for planning and managing simple training events."

Following are the eight steps and a short description of each.

Step 1 – Plan the Training Event

Leaders develop specific, obtainable, and measurable training objectives for the upcoming event based on guidance from the commander. Leaders allocate and ensure that there is:

- Adequate time scheduled for the event and on unit training calendar (includes time for re-training).
- Scenarios and instructions to support the training objectives are created (task, condition, standards).
- Resources, including necessary training areas and possible trainers have been identified (instructor pilots, simulator instructor operators, range areas, training areas).
- Identify hazards and eliminate or mitigate associated risks (safety officer assessment, risk-common operational picture, mission briefings, implementing controls).
- Training support and assessment plans have been created (maintenance, fuel, aircraft, and evaluation criteria).

Step 2 – Train and Certify Leaders

The leaders can consist of officers, non-commissioned officers (NCO), civilians, and Soldiers. The key to success is qualified leaders training and certifying other leaders. Using the train-the-trainer (standardization instructor pilot trains the unit instructor pilots) concept can provide the proper level of validation to ensure standardized training.

Step 3 – Reconnoiter the Training Site

Leaders reconnoiter proposed training areas and facilities. Leaders verify that the location can adequately support the proposed training and enable the unit to accomplish training objectives (e.g., the STX requires a landing zone big enough for three aircraft). During step 3, leaders check that all

resources, training areas, and training support plans are properly coordinated and prepared for execution. They make contact with support site personnel and review scheduling and coordination issues (ranges, simulation devices, weapons, etc.)

Step 4 – Issue the Event Operation Order

Commanders and leaders ensure subordinates have all available information to perform the training. Through the operations order (OPORD), the commander clearly identifies the tasks to be trained, training objectives, and a clear mission statement. The commander also defines the scope of the training, how to conduct training, and the tasks to train. A successful training event relies on all leaders understanding the expected outcome of the training, focused on the commander's training objectives.

Step 5 – Rehearse

Rehearsals are critical to the execution of any plan. Rehearsals ensure understanding, synchronization, and preparation for training and operational-tactical actions. Leaders supervise rehearsals to ensure that those responsible for the training are prepared to conduct efficient, organized, and effective performance-oriented training.

Step 6 – Execute the Training

Commanders ensure the training event occurs as planned and on schedule. A training event requires maximum participation, minimum training distracters, and leaders checking and supervising where necessary.

Step 7 – Conduct an After Action Review

During and after training, commanders review the tasks trained, assess the unit's training level in respect to the objectives, and obtain lessons learned to improve the training and unit's tactics, techniques, and procedures (TTP). Commanders record assessments in the digital training management system (DTMS) for future use of other training events or include in unit standard operating procedures (SOP).

Step 8 – Conduct Retraining

Commanders assess whether the unit training event tasks were trained to standard and training objectives were met. Units retrain tasks as necessary until they achieve the standard before they conclude the training event. Training instills competency and confidence in units, leaders, and Soldiers and enables the unit to develop task proficiency. Step 8 is often the most critical step, ensuring the training was to standard.

Conclusion

Utilizing the STX as a training mechanism to train, evaluate, assess, and enhance mission tasks for Army aviation units provides the Army with a mission capable, fully trained crewmember and supports the unit attaining the training 'T' in their assigned missions.

Commanders at each level can use the STX program to increase their unit readiness and provide the maximum training value to prepare for combat operations. Army aviation is unforgiving to slight training errors. The ability to train to standard, utilize all resources available and integrate STXs into the unit training program can give commanders the edge over uncertainty and influence the outcome of large scale combat operations. ■

Reference Resources

Field Manual (FM) 7-0, Train To Win In A Complex World (2016)

UH-60 Series Aircrew Training Manual (ATM) (2020)

Training Support Package (TSP)

Army Regulation (AR) 350-28, Army Exercises (1997),

Army Techniques Publication (ATP) 3-04.2, Aviation Combat Tactics and Survivability (SIPR)

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FORSCOM ARMS Trends FY18/19/20: *What are they telling us?*

A review of the FY18/19/20 Forces Command (FORSCOM) Aviation Resource Management Survey (ARMS) shows several negative trends. Alarmingly, the trends noted with negative results concern general, everyday management of programs that make an aviation unit operational. Commanders should be aware that most of these trends can be eliminated with the Army standard preventative maintenance approach and leadership engagement.

Each functional area requires two things to run efficiently and to standard: management of the program (oversight) and program maintenance (execution). Day-to-day operations conducted to standard in accordance with (IAW) the proper regulation will change the negative trends found at the conclusion of an inspection. Each functional area should have a primary and secondary point of contact (POC). Commanders should maintain oversight and engagement with the functional area managers as a method to ensure each area attains or exceeds the ARMS guide standard. Discrepancies identified during an ARMS signals the commander that program management is not to standard and risk to mission and force are increasing; this is compounded further when the discrepancy is recurring. Let us look at some of the trends plaguing FORSCOM units over the last three years.

What Functional Areas Are Most Impacted?

For this article, we will focus on some errors found in unit standard operating procedures (SOPs) and training and documentation. These trends affect all functional areas in a unit.

SOP Trends: An SOP is only as good as its adequacy of reiterating the 'how' of regulations and implementation by Soldiers in a unit. ARMS audit teams continue to discover SOPs falling short when it comes to clearly define or adequately addressing requirements and procedures. For successful program management, a well-developed SOP will allow anyone to understand how a program is required to operate and how SOPs must be written in such detail to ensure tasks can be completed safely and efficiently.

Training Trends: A common theme spanning the last three fiscal years identifies that units are not clearly defining procedures for academic tracking. Every military occupational specialty (MOS) requires continuation training or annual requirements that help Soldiers stay proficient in their profession. When a commander evaluates an individual's ability to perform a task to standard, the commander understands the Soldier's ability to execute the mission with confidence and success and deduce the overall efficacy of the unit. Failure to complete/conduct required training leaves a unit not mission capable (NMC) and prone to failures or worse.

Documentation Trends: Bottom line upfront- if information/events are not documented or properly annotated it is left to interpretation whether the event ever truly took place. A lack of attention to detail while documenting or entering data for the record can show errors with calibration, inspections, currency of training, and expiration of products used servicing Army equipment. ARMS teams have identified a trend of units having limited or no documentation of training events. This trend was found across all functional areas. The management of any program requires documentation of training and completion of events. Documentation is validation units have completed an event and are meeting the standard. Missing or incorrect information related to documenting events as important as aircraft maintenance will lead to a breakdown in standards and results in a normalization of deviation from the standard. This deviation drives up the risk in operations by producing substandard task performance. Often you hear this non-standard term associated with normalized deviation from the Army standard, "That's how we did it at my last unit."

Reversing the Trends

It starts with the commander taking ownership and being present. The commander establishes and enforces the standard. Then, it is selecting the right person to assist him in managing the program. As a representative of the commander, this individual needs to be responsible and have the ability to speak up if assistance is needed. Command presence is important to ensure the proper training and operational actions are being executed. Enforcing high standards in training and operations provides the necessary leader model for the Soldiers of what the standard is, how to train to it, how to document it, and how to put it to operational use.

Program managers remaining fully engaged with the program will allow the proper oversight, guidance, and enforcement of standards. Continuity is key to a program's success and prevents negative trends from ever taking hold. Open dialog between the commander and the program manager about shortcomings in a program provides the commander with information that he can use to holistically understand how each of the unit programs deficiencies inter-relate. With this information, the commander can better identify key elements which, if fixed, reverse the trends in multiple programs. Every functional area is connected, and requires proper oversight and open communication up and down the chain of command to fix errors.

Conclusion

Each FY the ARMS team consolidates survey trends and publishes these biannually. The biannual trend data is for the benefit of all Army aviation units to see the overall management health of the force and to inform commanders of functional areas they may need to take a look at or place special emphasis on. The success of Army aviation is based on each individual unit meeting the standard and being combat ready. To ensure this, commanders should look at the FY18/19/20 trend areas (e.g., SOP, Training, Documentation, Lack of Command, and Equipment) and engage their team to place additional scrutiny on these areas and identify any trends requiring correction.

Commanders should never be blindsided by ARMS results. Applying appropriate oversight, they should know where their unit stands in each functional area, and for those not meeting the standard, they should execute a corrective plan of action. Leadership involvement plays a pivotal role in setting the standards culture for the organization. If the commander doesn't set high standards for the unit, it can easily continue negative trends. ■

References:

FORSCOM ARMS FY18/19/20 Trends

https://www.jtdi.mil/group/forscom/home

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Mishap Review:
AH-64A NOE Training Wire Strike

During a training mission, overconfidence resulted in a wire strike. The mission was continuation training of traffic pattern tasks, followed by transitioning to nap-of-earth (NOE) flight training in the local terrain flight area. After conducting traffic pattern tasks at a nearby airfield, the crew was attempting to join the local NOE route and flew beyond the route release point. The aircraft crossed a river, struck wires, and crashed. The aircraft was destroyed, and both crewmembers received fatal injuries.

History

The mishap crew's mission was to conduct traffic pattern tasks followed by NOE training in the local terrain flight training area. The crew pilot-in-command (PC) began his duty day at 0800 consisting of multiple medical appointments, while the pilot (PI) began his duty day at 1400. He began his day conducting pre-mission planning and pre-flight of the aircraft. The flight was planned to depart at 1800 but was delayed by the PC being stuck in traffic. The PC contacted the briefing officer over the radio and updated the briefing to conduct the traffic pattern and follow-on NOE training. The crew was instructed to complete the training flight no later than 2000.

The crew departed the airfield at 1853 and flew to a nearby airport to conduct the traffic pattern work. Following this, the crew departed and entered the NOE training area box and proceeded to fly northwest up a river near the designated route start point (SP). Upon arriving near the route release point (RP), the aircraft entered a different NOE box for 10 minutes then transitioned back toward the NOE route RP to re-join and transit the route in reverse. The aircraft flew north of the RP and crossed a river then turned to a heading of 280 degrees. While on this heading, the aircraft struck 1.25-inch diameter power lines that crossed the river near the NOE terrain flight area. The aircraft separated into multiple sections and fell to the water. The aircraft was destroyed and both pilots were killed.

Crew

The PC had 971 hours in MTDS and 1,863 hours total time. The pilot (PI) had 125 hours in MTDS and 469 hours total time.

Commentary

The crew assumed a flight profile on the river that was too low and too fast for their environmental conditions while failing to detect hazards and maintain airspace surveillance. The crew exhibited overconfidence in their ability to successfully navigate at terrain flight along a river with known wire hazards.

Terrain flight requires focused planning and adherence to training standards. Overconfidence allowed this crew to fly faster and lower in conditions that required slower airspeeds as you operate closer to the terrain. With Army aviation transitioning to supporting operations requiring terrain flight to operate against peer and near-peer threats with advanced air defense systems, it is paramount crews understand the necessity to train to standard. Training should build from the crawl level to the run level. While initial PI training is with standardization pilots, continuation training shouldn't be an open door to defy the standards. Aviation Safety Officers (ASO) must play an active role in monitoring unit training operations, planning processes, and remain an active pilot who can be the commanders' eyes and ears in an effort to identify and reduce the hazards to mission and force. ■

Class A - C Mishap Tables

	Manned Aircraft Class A – C Mishap Table						as of 31 Jul 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	1	7	
	August	1	0	3	1					
	September	2	1	8	1					
	Total for Year	12	9	41	3	Year to Date	6	6	42	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: 0.80			

UAS Class A – C Mishap Table									as of 31 Jul 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	10	17	27
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	11	21	37
Aerostat	1	1	1	3	Aerostat	3	0	0	3
Total for Year	12	16	43	71	Year to Date	8	11	21	40
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: 6.20		
RQ-7B Class A-C	5 Yr Avg: 58.29		3 Yr Avg: 69.64		FY 19: 106.20		Current FY: 112.43		

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

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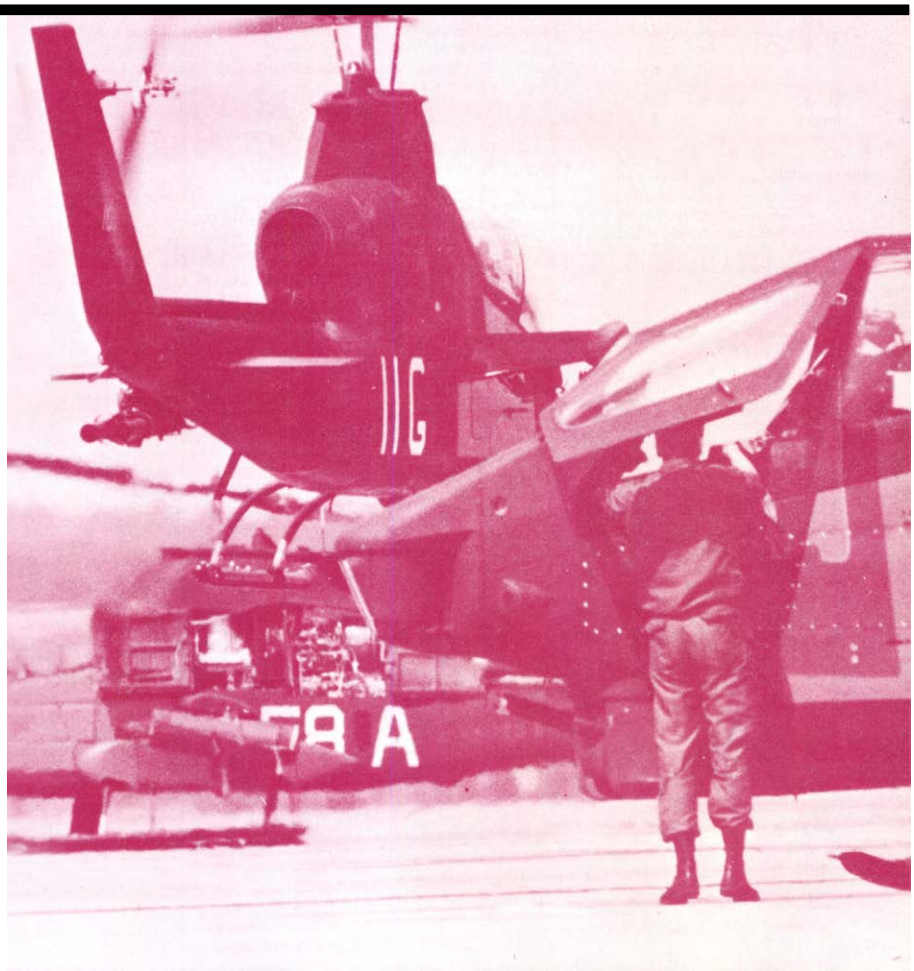
Training must be planned and executed to standard. This UH-1 simulated emergency procedure training question and answer still holds credence for our advanced aircraft we fly today. The focus point is without a planned training scenario, how can training continue to standard? Unplanned and un-focused training quickly loses any value to the pilot under training.

Focusing on progression of training and how synthetic flight training simulators (SFTS) help train these complex situations in a safe controlled environment provides training value while maintaining a realistic opportunity for the pilot under training to continue to learn. See "Aviation Training Strategy Evolution" in Flightfax 86, February 2020 for more information.



UH-1 Simulated Emergencies

Question: May an IP, in simulating flight emergencies in the UH-1, be permitted to pull circuit breakers, turn off generators or inverters, or "beep down" the rotor rpm as long as he remains within the operating limits of the aircraft?

Answer: The critical part of this multiple part question is the last part; all aviators, including IPs, must at all times work within the operating limits of the aircraft. It is difficult to perceive how an IP can confront an aviator with continuous, multiple inoperative systems and still expect training to continue and aircraft operations to remain within limits. There does not appear to be any correlation between this type of exercise and the requirements of the ATM (Aircrew Training Manual).

This type of technique could be better and more safely performed in the SFTS, but its usefulness in the real training world still appears highly questionable. A final thought-this type of instructor was supposed to have disappeared with the Neanderthal. Let's hear your thoughts on this question. ■

Forum

Op-ed, Opinions, Ideas, and Information

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

Non-Rated Crewmember Assessment, A DES View

Throughout several recent unit assessment visits, the United States Army Aviation Center of Excellence (USAACE) Directorate of Evaluation and Standardization (DES) has observed trends concerning the professional skill and management of critical maintenance non-commissioned officer (NCO) positions, non-rated crewmember (NRCM) standardization instructors (also known as N1s) and combat medics (68W). The trends range across Army aviation military occupational specialties and have become more apparent as the force continues to train for large scale combat operations (LSCO). They include issues with maintenance quality control (QC), aviation maintainer training, N1 personnel management, and combat medic proficiency. This article discusses each of these trends and provides recommendations for units seeking to address challenges within their formations with the ultimate goal of helping standardize the force through the communication of lessons learned and assistance by DES.

Maintenance Quality Control:

NCO's throughout the aviation branch are faced with evolutions of technology, doctrine, and transitioning between different missions, counterinsurgency (COIN) to LSCO. Recent COIN operations in Iraq and Afghanistan often leveraged non-green "suiter" aviation maintenance, which enabled a tremendous operational tempo (OPTEMPO) but also impacted Soldier maintenance proficiency in the force severely. The residual effect across many aviation brigades has been the creation of a generation of NCOs without a solid maintenance foundation necessary to mentor junior Soldiers. Units training for LSCO is now forced to place inexperienced NCOs in positions of high responsibility, such as the technical inspector in quality assurance. The result of this decision is increased risk to maintenance standardization and improper record keeping within the quality assurance office. DES has frequently observed units who inaccurately reported their data to higher echelons, such as non-mission capable (NMC) aircraft reported as fully mission capable (FMC) due to incorrect interpretation of maintenance manuals.

High fidelity maintenance QC is the foundation of any strong aviation maintenance program. Units should ensure they are incorporating the Aviation Branch Maintenance Standard Operating Procedures (SOP) and ensure the SOP is tailored for their operations. This is critical for the development of a high-quality maintenance program. Additionally, unit technical inspectors (TI), as the QC program's first line of defense, are critical to standardized maintenance of a viable aircraft fleet. Units seeking to standardize or improve their TI training programs may refer to the TI training program on the DES AKO 2.0 webpage. Finally, leaders at all levels must embrace changes to SOPs, training literature, and doctrine. This is necessary throughout the force to enable communication and build expertise.

Aviation Maintenance Training Program (AMTP):

Another trend frequently observed on unit assessment visits is limited incorporation of the aviation maintenance training program (AMTP) outlined in Training Circular (TC) 3-04.71, Aviation Maintenance Training Program. While TC 3-04.71 created a system to monitor and track Soldiers' progression, the program is just beginning to take hold in the field. The AMTP is designed to set the Soldier up for success as a maintainer and maintenance supervisor. The antiquated "Job book" was used to help write the guidelines of the TC. It will align tenure with expertise and correctly track the progression of his skill level. However, to those who have not experienced a positive maintenance program in the past, the AMTP likely appears overwhelming or not useful. As a result, the standardization instructors (SI) and standardization operators within DES provide structured NCO professional development and mentorship classes on TC 3-04.71. This provides continuity from USAACE to the force. Gradually, NCO supervisors are gaining an understanding of the basis of how this TC helps develop Soldiers into senior maintenance leaders

utilizing the correct training mechanism.

DES recommends any unit struggling to implement the AMTP visit the DES Best Practices webpage on AKO for examples on how to create Soldier Training folders. Additionally, DES NRCMs and Maintenance Test Pilot Evaluators are knowledgeable on the program and will provide mentorship to any unit that requests help.

NRCM Standardization Instructor (N1) Management:

Recent unit visits have shown recurring mismanagement of key N1 personnel at the senior NCO levels. Units that neglect to closely monitor N1 NCO placement in the unit run the risk of assigning these key individuals outside of the NRCM standardization role. This could vary from slotting N1s on the headquarters staff to placing them in a maintenance company, neither of which is a flying position. When this happens, the critical skill set of the N1 NCO is therefore wasted. Units across the Army have a specific amount of N1 slots on their modified table of organization and equipment (MTOE) and trends show N1 manning of numerous units at less than 50 percent across brigades. Some units have not filled the brigade or battalion level NRCM standardization positions due to lack of N1 tracking ability and have been filling the gap with platoon sergeants and at times even first sergeants. Additionally, retaining N1 identification for NCOs who are no longer qualified for flight status misleads the headquarters on the true status of the N1 population within the unit. Unfortunately, the additional skill identifier "N1" does not assist Human Resource Command (HRC) in managing the promotion, permanent change of station, or operational status of these key flight personnel.

The newest locally trained flight instructor (FI) training support package (TSP) is a prime example of the community moving forward in training and standardization. The locally trained flight instructor is a designated NRCM that will be trained at their unit by a USAACE Aircraft Crewmember Standard Instruction (ACSI) course graduate with the N1 identifier to assist with certain unit training. Under guidance through the TSP, this FI is identified to attend the ACSI course in the near future while gaining experience and training within aviation standardization. This training gives units the talent management option for producing NRCM N1 standardization personnel. In addition, USAACE leadership and HRC recently developed a system to remove the N1 identifier from a Soldier's record brief when he or she is serving in a non-flight status position. This prevents human resource managers from believing an installation has the required number of N1s to fill flight position authorizations when in actuality they don't due to N1s filling non-flight positions but still carrying the identifier. This will help unit leaders understand the true status of N1s within their formations and better manage these low-density instructors.

Combat Medic (68W):

The MEDEVAC company is a unique organization within each combat aviation brigade (CAB), from its MTOE to its garrison tasks. 68W flight paramedics arrive with minimal aviation school training and no aviation field training but they're then expected to operate as fully operational crewmember medics upon integration and progression. Accordingly, the DES focus on 68W mentorship during each unit visit is always high. At times, however, the unit is so task saturated that the amount of medics available for evaluation or training is minimal, so the unit misses out on critical mentorship opportunities. Additionally, flight training is often such a high priority in a MEDEVAC company that medical training receives a relatively small percentage of training time and key medical skills within the 68W population decline. During unit assessments, DES administers the medical evaluation, the DES written evaluation, and also trains the hoist TSP for all units who request it.

Newly assigned flight paramedics must be trained and tested on medical protocols and then trained and tested on the hands-on performance of those protocols. In a business where the actions of the flight paramedic have a direct impact on patient survivability, the training must reflect the accuracy of medical protocols. Establishing a brigade medical training program incorporating commander and flight surgeon oversight is a great way to ensure that we are providing a quality service to the force. Additionally, units can help prepare their medics for crew chief duties by ensuring they are conducting the Hoist TSP training and are knowledgeable in their general crew chief duties. DES mentorship of 68W flight paramedics is one of the most valued commodities we offer.

Conclusion

Recent updates to Army aviation doctrine and training have seemingly left a void between rated and NRCM knowledge and training focus. Many units are struggling to stay afloat with the current OPTEMPO and manning challenges. Progressive standards, talent management, and consistent N1 forums of communication will help alleviate the mismanagement of NRCM. Non-rated crewmember N1 mentorship is a key focus for DES during assessments, which helps improve the unit's ability to produce quality crewmembers. This approach also enhances relationships and encourages front line units to reach back to USAACE for assistance.

As the Army is transitioning to LSCO, DES has transitioned also, adopting "Gray Hat" (as opposed to the strict "Black Hat") approach to unit assessments. This approach acknowledges the link between training and successful evaluations: in a training environment the "Black Hat" approach may be a hardnosed instructor providing only criticism, but the "Gray Hat" instructor provides guidance and mentorship while enforcing the standard.

DES believes the best way for units to improve is through the delivery of meaningful and relevant instruction. The "Gray Hat" approach has gained momentum across the enterprise and is building great rapport and communication throughout the NRCM N1 community. It has provided units with the perspective that DES is there to assist with increasing readiness while decreasing risk through standardization training. As the future presents challenges for units struggling to build aviation maintenance expertise, DES, as part of the entire Army Aviation Enterprise, stands ready to assist units through guidance, mentorship, training assistance, and standardization. ■

MSG Alejandro Rodriguez
NCOIC, Directorate of Evaluations and Standardization Senior Standardization Instructor

Retrospective Review of Spinal Injuries in U.S. Army Rotary-wing Mishaps: January 1990–December 2014

A retrospective review of spinal injuries in U.S. Army rotary-wing mishaps occurring between 1990 and 2014 were conducted. This report describes the spinal injury trends experienced by seated occupants in mishaps during this study period. Data from U.S. Army Class A and B, rotary-wing, in-flight mishaps between 1990 and 2014 were obtained from the U.S. Army Combat Readiness Center aviation mishap database. Included in the analysis data were survivable, partially survivable, and non-survivable occupants with spinal injuries sustained by seated occupants. A total of 739 Class A and B mishaps occurred involving 765 rotary-wing aircraft and 3,117 occupants. Out of 3,117 occupants, 1,147 were seated when the mishap occurred; 460 of these occupants sustained a total of 547 spinal injuries. Lower thoracic and lumbar vertebrae experienced the largest frequencies of injuries. The frequency and location of spinal injuries found in this study were consistent with historical data on spinal injuries sustained in similar mishaps between 1979 and 1985. ■

The complete technical report is at: https://discover.dtic.mil/results/?q=USAARL

Safety of Flight messages save lives

When aircraft artisans at Corpus Christi Army Depot, Texas, recently identified a non-conforming honeycomb seal in a Black Hawk engine, it set in motion a series of events designed to keep the Army's Black Hawk and Apache fleets safe from a potentially devastating mechanical failure.

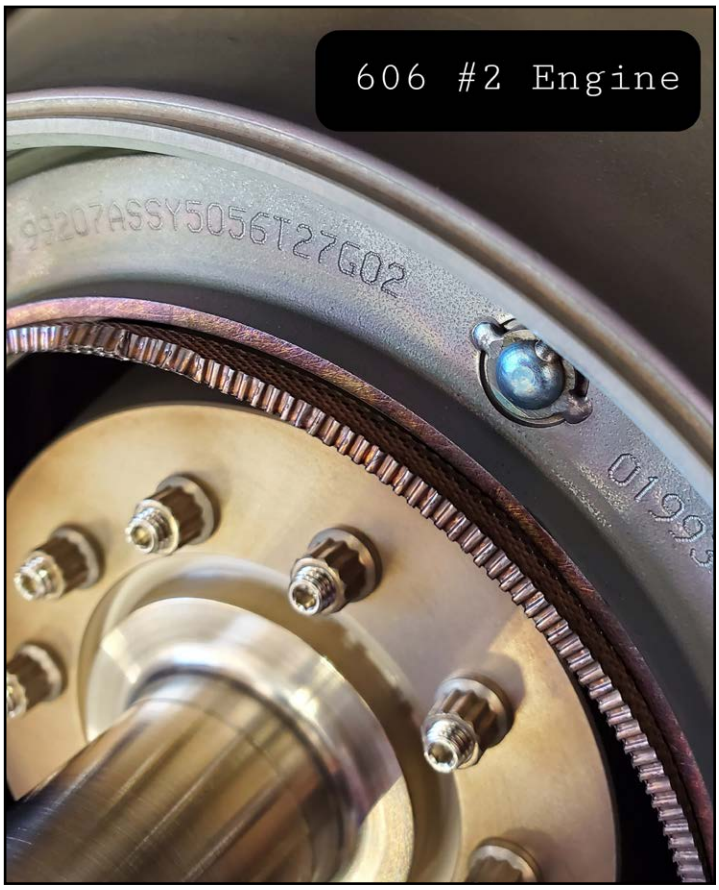
Initial efforts to isolate the faulty component led U.S. Army Aviation and Missile Command aviation safety specialists to work with the Combat Capabilities Development Command (CCDC) Aviation & Missile Center (AvMC) to conduct a hazard assessment of the situation.

"Because of the potential for in-flight engine failure, members from AMCOM, AvMC and Program Executive Office-Aviation worked together to generate a Safety of Flight (SOF) message for the entire Army Aviation enterprise," said Chief Warrant Officer 5 Mike Cavaco, AMCOM's Aviation Branch Maintenance Officer.

Safety of Flight messages are high-priority notifications pertaining to any defect or hazardous condition of an Army-fielded system that can cause personal injury, death, or damage to the system. SOF messages can restrict specific performance capabilities, operational limits, or require immediate maintenance actions for a variety of reasons that could include material defect conditions. Depending on the severity of the defect, the entire fleet or a portion of the fleet could be grounded.

"When the non-conforming seal fails, other internal engine components overheat and will eventually fail, potentially resulting in a catastrophic event," said CCDC AvMC senior engineer Keith Jones.

In the event that a safety message is issued requiring the grounding of aircraft, the already heavy maintenance workload increases due to the urgency of the situation. The process of crafting the safety message is important and involves collaboration between subject matter experts to ensure the maintainers receive a clear message. Those developing safety messages must also consider the additional maintenance burden is minimized in the field and the corrective action the maintainers take is effective in getting the fleet back to a high state of safety and readiness.



"The SOF message process averted at least one mishap this summer," said Kevin Pulliam, Tech Chief, T700/T55 Product Office, Aviation Turbine Engines Project Office. Whether you write the SOF message or read the SOF message, these are some of the most important words you may touch in your career."

In this case, a non-conforming seal assembly was identified and a message requiring immediate action was sent out to Army Aviation units. The SOF required the removal and disassembly of the suspect engines for visual inspection and repair (if needed) before the aircraft could be returned to flying status.

Because of this SOF, a number of suspect parts were found. According to Cavaco, although numerous engines had to be inspected, it was worth the effort to find the suspect seals.

By going through the clearly defined SOF message process in accordance with AR 750-6, Army Equipment Safety and Maintenance Notification, the hard work and effort expended across the Black Hawk and Apache maintenance crews to quickly

comply with this SOF message averted what could have been a catastrophic event had an engine failed in flight.

"The emergency SOF message is a critical force protection measure to forestall a potential catastrophe. The SOF process is essential for continued airworthiness of Army aircraft." said CCDC AvMC's Director for Airworthiness, Keith Darrow. ■

Douglas Miller
U.S. Army Aviation and Missile Command

Editor's note:
Whether a message is issued for information that may assist in system operation, a required special maintenance action to enable aircraft performance, or for an immediate intervention that could potentially save lives, the importance of communicating and executing through this process is clear. Feedback on how to improve the process is welcome. All comments related to improving the safety message process can be directed to the AMCOM Safety point of contact on any recently issued safety or maintenance message.

Mishap Briefs #92

Information based on preliminary reports of aircraft mishaps reported in July.

ROTARY WING
Attack
H-64
E Model

• While conducting a production test flight on a new-build AH-64E Apache helicopter, the crew received a No. 2 engine chips caution and proceeded with the emergency procedure. They brought the No. 2 engine to idle and flew single engine back to the production facility. Shortly after bringing the engine to idle, they received an engine fire audio with no associated fire light. On descent to the facility, they received another engine fire warning audio with an associated emergency procedure displayed on multi-purpose display (MPD), again without the engine fire light illuminated. The crew safely landed and determined the engine fire indication was erroneous due to a recent history with false engine fire indications. After further inspection in the engine compartment, heat damage was found on the engine and the engine nacelle. The full extent of the damage is still being investigated. (Class C)

• A group of Soldiers were moving the aircraft from the flight line to the hangar following the notification of a storm warning. While moving the aircraft, a strong gust of wind started to rock the aircraft. The rocking motion caused the left main tire to blow out and potential damage to the left strut, which is currently being inspected. Following the incident, the Soldiers chained the aircraft tie down points to the aircraft tugs to prevent further damage due to the aircraft not being moveable and an incoming thunderstorm. The amount of damage on the main rotor head and strut is unknown at this time and pending additional inspection. (Class C)

Utility
H-60
L Model

• During a blade fold, the ground crew did not install the main rotor hub bracket on the main rotor hub to limit the travel of each blade. When the crew swung the red blade, the root of the blade accidentally contacted the main rotor hub and produced a dent at the point of contact near the cannon plug connector for blade deice. Research revealed that unit-level maintenance is not authorized on the main rotor blade and the blade had to be replaced. (Class C)

M Model

• A UH-60 (the damaged aircraft) and a CH-47 were on a routine supply and personnel run which required two hot refuels. On the second refuel, after both aircraft sat down on their respective refuel pads (with one space between them), the CH-47 picked up to readjust its position to be in a more conducive posture for refuel. When it did, it blew a considerable amount of dust and rocks, which flew into the cockpit and rotor system of the adjacent UH-60. The crew of the UH-60 only noticed the large amount of dust that accumulated in the cockpit and cabin at the time and continued on to their home base after refuel. Once at home base, the crew noticed a cracked windscreen upon post-flight inspection, followed by completing the maintenance write-up for the windscreen damage. The next day, while conducting a more thorough investigation of damage to the aircraft, maintenance confirmed the damage to the windscreen as well as damage to the main rotors, the tail rotor paddle and the top of the stabilator. It was determined the rocks from the repositioning CH-47 flew into the rotor system of the UH-60 and then were flung, causing this damage. (Class C)

• The aircraft was conducting a multi-ship air assault training exercise. The aircraft had a full crew of two pilots and two crew chiefs and 10 passengers. The aircraft was damaged as a result of a hard landing while attempting to land on sloped terrain. There were no injuries. (Class C)

H-72
A Model

- The crew was performing readiness level progression, specifically slope operations at the time of incident. The instructor pilot (IP) demonstrated two slope landings — a left skid low first, then an upslope — to the pilot (PI) prior to transferring controls. The PI first successfully performed the left skid low slope. However, while attempting a 5 degree upslope landing, the mast moment limit was exceeded. Recorded value was the max allowed by the system, 111.1 percent. (Class C)

Cargo
H-47
F Model

- A thunderstorm moved through the area with peak gusts of 78 mph (at 0000 hundred hours) and 74 mph (at 0005 hundred hours). The wind gusts, with possible microbursts from the thunderstorms, caused the blades of four Chinook helicopters to break free from their restraints. Damage occurred to the blades, their pitch control links, weather shields and swashplates. All four helicopters were properly secured, tied down for the night and were left in the proper parking places on the ramp. This is common practice, as there is not enough space in the hangars located at the facilities. (Class B)

- The aircrew was performing a maintenance test flight when they heard a loud noise from the No. 1 engine area followed by a No. 1 engine chip detector light illumination. The crew declared a precautionary landing. During post-flight inspection, the crew identified that one turbine blade from the No. 1 engine had departed the engine and penetrated the left side of the aft pylon. There were no injuries to the crew. (Class C)

- The crew was conducting night training at a mountain training area landing zone (LZ). During decent and landing, one of the two crew chiefs on board noticed and called out the presence of an obstacle (a rock). However, the timing was too late. The belly of the aircraft made contact with the obstacle just forward of the ramp door. The obstacle punctured the sheet metal inward by roughly 2 inches, causing a lateral split of the sheet metal by about 40 inches. (Class C)

- Soldiers were closing a hangar door when one of the Soldiers did not notice that an aircraft rotor blade was not fully in the hangar. As the hangar door closed, it bent the rotor blade, causing damage to the blade root and possible damage to the rotor head. (Class C)

FIXED WING
RC-12
X Model

- The aircrew was conducting a service mission and struck a fence with the left wing pod of the aircraft while turning right onto Taxiway Delta from Taxi Lane 1 on the airfield. The crew of two was not injured. The aircraft was immediately shut down and the appropriate immediate notifications were made. Initial assessment shows damage to the left wing pod forward tip assembly, it's deice boot and an associated antenna. (Class C)

UNMANNED
RQ-7V2

- The aerial vehicle (AV) was involved in an incident during the landing sequence. The AV touched down at the correct position on the airstrip, but at touchdown the AV's main landing gear apparently sheared off and collapsed backward. This caused the AV to slide through the arresting gear pendants and into the recovery net. The AV stopped just short of the end of the airstrip. Damage was noted on the wings and belly of the aircraft. (Class C)

Flightfax

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TRAINING

Training is the key to Army success in combat operations and requires strict adherence to standards. When aviation personnel are trained to standard and perform to standard, the risk to mission and force is reduced to the lowest levels. This training is not confined to just flight crew personnel, it encompasses the whole of the unit and the tasks each aviation unit Soldier performs.

While aviation personnel have their training manuals, each military occupational specialty (MOS) also has training manuals and skill manuals. These manuals set standards of proficiency which provide a fully mission qualified Soldier in their MOS. Let's look at some examples of the manuals and documents which Army personnel use to train to standard.

Aircrew Training Manual (ATM), H-60 Series:

"Task Contents
3. Standards. The standards describe the minimum degree of proficiency to which the task must be accomplished. The terms "without error," "properly," and "correctly" apply to all standards. The standards are based on ideal conditions. Many standards are common to several tasks. Individual trainer, instructor, or evaluator pilot techniques are not standards and not used as grading elements. Unless otherwise specified in the individual task, the following common standards apply. Alternate or additional standards will be listed in the individual tasks."

Army Techniques Publication (ATP), 3-04.7 Army Aviation Maintenance:

"1-106. Soldiers receive initial technical training (skill-level 1) at Advanced Individual Training (AIT); however, AIT should not be considered the end of individual training for the aviation maintainer. With successful completion of AIT, the Soldier is equivalent to that of an apprentice. The gaining aviation unit commander assumes the responsibility for enhancing and expanding the training (skill-level 2) Soldiers received in AIT. This enhanced unit training will increase the maintainers' ability, skill, and knowledge. This training includes the integration of airframe and support maintenance specialties. An apprentice possesses entry-level knowledge and skill set that must be carefully groomed and honed to develop into a master or seasoned maintainer (skill-level 3 and 4)."

"1-114. Training individual tasks to standard and relating individual training to collective mission essential tasks remain the responsibility of trainers."

Soldier Training Publication (STP), Soldier's Manual And Trainer's Guide For The Air Traffic Control Equipment Repairer, MOS 94d, Skill Levels 1, 2, 3 And 4, STP 9-94D14-SM-TG dated 04/13/2020:

"1-6. b. Every task summary in this STP includes performance measures, which trainers may use year-round to determine if Soldiers can perform critical tasks to the specified standards. The performance measures identify what the trainer needs to observe to score a Soldier's performance. A blank space is provided for the trainer to check either the GO or NO-GO column for each performance measure. Some tasks require the trainer to watch the Soldier perform them (evaluate the process). Other tasks call for the trainer to focus on the results of the Soldier's performance (evaluate the product). Comments should not be written on the task summary." Remember there is an STP for every MOS, use it to determine if Soldiers can perform critical task to the standard.

The common training thread across all Army training is meeting a standard.

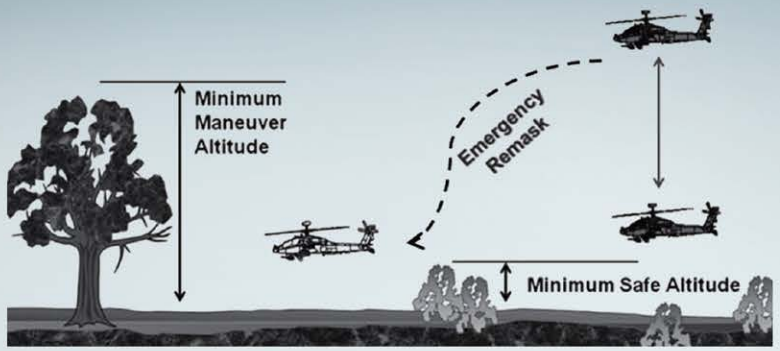
5 Questions

1. What manual provides aviation crews with training tasks standards?
2. Are individual trainer, instructor, or evaluator pilot techniques a standard? Yes/ No?
3. What responsibility do trainers have beyond training just the individual tasks?
4. What do trainers use year-round to determine if Soldiers can perform critical task to the standard?
5. Advanced individual training (AIT) is considered the end of individual training for maintainers. Yes/ No?

Winning Matters!

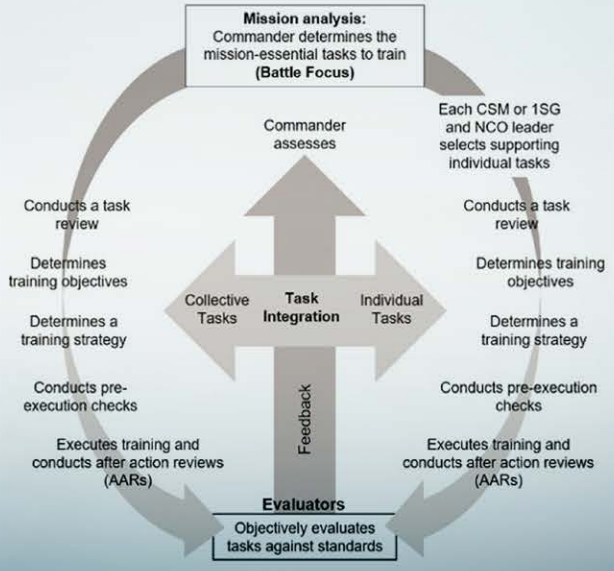
TRAIN LIKE IT

Battle-focused training — training that develops required operational skills and capabilities.



- Train as you fight
- Train to standard
- Train to sustain
- Train to maintain

- Be Innovative
- Continuous Improvement
- Clear Measures of Effectiveness



Objective evaluations, assessments, after action reviews, and applied lessons learned.

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