Flightfax
Number 81 September 2019 Online Newsletter of Army Aircraft Accident Prevention

AH-64 Five-Year Safety Performance Review FY15-19

In the nearly five-year period from FY15 through present (650,000-plus flight hours), 71 AH-64 Class A-C mishaps were recorded. There were 16 Class A mishaps , 14 Class B mishaps and 41 Class C mishaps with a total cost of $376.7 million in damage and injuries as well as 12 fatalities. The Class A flight mishap rate was 2.11 mishaps per 100,000 hours. The AH-64 Class A-C rate was 9.06. In comparison, the rotary-wing (RW) Class A rate was 1.29, and the A-C rate was 7.34. The Apache accounted for 18.5 percent of the RW flight hours, 31 percent of the Class A mishaps and 22 percent of the RW Class A-C mishaps. The AH-64E comprised 19 percent of the Apache Class A-C mishaps: six Class A, one Class B, seven Class C and six of the total fatalities.

Review of AH-64 mishaps shows human error was the primary causal factor in 81 percent of the Class A mishaps and 69.4 percent of the total Class A-C incidents. Materiel failure accounted for 19 percent of the Class A mishaps and 16.7 percent of the total Class A- C incidents. Four percent were environmental related (bird strikes) and 10 percent are not yet reported or unknown. The following are highlights of the more frequent types of mishaps:

Power Management

Power management/aggressive flight maneuvering was involved in one of the 11 Class A human-error mishaps. There were also two Class B and one Class C mishaps. Summaries of some of the power management mishaps include:

1. An aircraft descended to ground impact following takeoff. The main and tail rotor system, target acquisition and designation sights, pilot night vision system (TADS/PNVS) and fuselage were damaged. (Class A)
2. A crew was conducting an autorotation and failed to arrest the aircraft's descent in a timely manner. The aircraft contacted the runway and sustained significant damage to its underside and the 30 mm gun cradle. (Class B)
3. An aircraft descended into trees during combat maneuvering flight and landed without further incident. Post-flight inspection revealed damage to the main rotor system and right-side fuselage. (Class B)
4. An aircraft descended to ground contact during out-of-ground-effect (OGE) hover with a tailwind condition. (Class C)

Object Strikes

There were six terrain strikes, nine tree strikes and four wire strikes recorded in the 71 incidents, two of which resulted in Class A damage. Additional strikes included two main rotor blade strikes on the modernized (M)-TADS/PNVS and two bird strikes. Mishaps include the following (designated controlled flight into terrain (CFIT), wire strike, ground taxi or bird strike):

CFIT: An aircraft drifted rearward into rising terrain, resulting in a tail rotor strike and subsequent crash. (Class A)

CFIT: While conducting a night familiarization gunnery, the instructor pilot (IP) on the controls in the pilot's (back) crew station successfully recovered from a diving rocket fire engagement. During the subsequent left 180 degree turn, an aircraft impacted the ground in a nose-low left bank at a high rate of descent. The crew suffered fatal injuries and the aircraft was a total loss. (Class A)

CFIT: While conducting a night hasty attack and following transfer of the flight controls, the aircraft impacted the ground at a high rate of speed and descent, resulting in the deaths of the crew and destruction of the aircraft. (Class A)

CFIT: An aircraft rolled rearward and downslope after touchdown on the landing zone (LZ), and the

tail boom subsequently made contact with the terrain. The initial estimated cost of damage (ECOD) was minimal, but subsequent inspection revealed further damage. (Class B)

CFIT: While conducting contour flight, the aircraft struck a hilltop, forcing an emergency landing and causing extensive damage to the fuselage. (Class A)

CFIT: During a hovering illumination rocket engagement, the tail wheel struck the ground, resulting in the aircraft yawing and rolling to the right with subsequent airframe contact with the terrain. The aircraft sustained significant damage to the tail wheel landing gear assembly, tail boom section, right wing and 30 mm gun turret. The crew was not injured. (Class B)

CFIT: An aircraft sustained stabilator damage associated with an obstacle strike during terrain altitude flight. Damage was noted after the aircraft landed at the forward arming and refuel point (FARP). (Class B)

Wire strike: Aircraft struck wires during night vision device (NVD) training flight and crashed fatally injuring both pilots. Post-crash fire ensued. (Class A)

Wire strike: While conducting a night deliberate attack at the National Training Center (NTC), the aircraft struck wires and impacted the terrain. The crewmembers suffered minor injuries, and the aircraft was a total loss. (Class A)

Wire strike: The wire strike protection system (WSPS) cut three power lines during nap-of-earth (NOE) flight. The aircraft was landed without further incident, and post-flight inspection revealed TADS damage. (Class C)

Ground taxi: The main rotor system struck a concrete wall while ground taxiing. (Class B)

Ground taxi: The crew was conducting engine run-up when the aircraft spun on the pad and contacted an adjacent non-operating AH-64D parked in close proximity, causing damage and minor injuries. (Class A)

Ground taxi: The crew was ground taxiing to parking when the main rotor blades struck a concrete guard tower. (Class A)

M-TADS/PNVS: The main rotor blade dipped forward, striking the TADS/PNVS while landing in the FARP. (Class B)

Bird strike: Post-flight inspection revealed damage to the No. 2 nose gearbox (NGB) cowling following a suspected bird strike. (Class C)

Maintenance error

1. A crew was conducting a post--"500-hour phase" maintenance test flight (MTF) when the aircraft reportedly initiated an uncommanded right yaw from a 5-foot hover. The aircraft contacted the ground, sustaining significant damage, and the crew conducted an emergency shutdown. While reinstalling the No. 4 tail rotor driveshaft, the maintainers failed to apply the proper torque and conduct follow-on inspections to the forward portion of the No. 4 tail rotor driveshaft bolts. (Class B)
2. The main rotor pitch change rod (PCR) link lower rod end unseated from the rod end bearing in flight, resulting in a catastrophic failure of the main rotor system. Crew died and the aircraft was destroyed. (Class A)
3. A crew reportedly experienced a loud report, followed by a nose-down pitch and right yaw of the aircraft during flight. The crew executed an emergency landing to an open field. Post-landing inspection revealed the tail rotor had come off in flight due to improper torque to the tail rotor retention bolts. (Class B)

Materiel failure

1. A crewmember had just completed "hot" refuel and were at 100 feet above ground level (AGL) when they noted a loud report from the No. 2 engine area, followed by a low rotor audio indication. The aircraft touched down "hard" as the crew attempted to land on a firing pad. The compressor blade fractured and separated, causing catastrophic downstream compressor damage. (Class B)
2. After landing, the crew heard a "'squealing" sound, followed by low hydraulic fluid indicators and a burning odor. Post-flight maintenance inspection revealed the hydraulic pump had seized, resulting in transmission damage. (Class C)
3. The No. 2 strap pack assembly failed in flight, resulting in separation of the main rotor assembly and departure from controlled flight. The crew died and the aircraft was destroyed. (Class A)
4. An aircrew executed a precautionary landing

(PL) for a suspected No. 1 engine digital electronic control unit (DECU) failure. The maintenance data recorder (MDR) download discovered engine No. 1 turbine gas temperature (TGT) overtemp greater than 949 degrees celsius, single-engine No. 2 overtorque greater than 130 percent and main rotor overspeed greater than 115 percent. (Class B)

5. While conducting hovering flight at night under zero illumination, the aircraft experienced a rapid main rotor decay, massive torque spike and audible bang caused by the nearly simultaneous slippage then sudden re-engagement of the No. 1 and No. 2 sprag clutches. The aircraft's drivetrain was severely damaged and could not maintain enough main rotor RPM to remain airborne. The aircraft impacted the ground and sustained serious damage. (Class A)

Miscellaneous

1. All crews were conducting reconnaissance on a coalition air route when they fired on Afghan National Security Forces (ANSF) they reportedly perceived as hostile. (Class A)
2. During a night annual proficiency and readiness test (APART) flight evaluation at 435 feet AGL, both engines were placed in lockout. The aircraft lost altitude and impacted the ground. The crew died and the aircraft was destroyed. (Class A)
3. Inspection subsequent to AH-64 table XII aerial gunnery training identified a 30 mm round embedded in the root fitting of the No. 2 main rotor blade. (Class C)
4. The unit was conducting a live-fire exercise (LFX) when a rocket motor reportedly fell from the aircraft and started a ground fire that spread beyond the military reservation, consuming civilian property. (Class B)
5. Post-flight inspection revealed the No. 2 engine nacelle cowling was unsecured and came open during flight. (Class C)
6. The aircraft was hovering after landing when a stationary Gator and a maintenance stand were blown into the stabilator area of an adjacent parked aircraft, causing damage to the right wing store and stabilator. (Class C)
7. A hovering AH-64D blew over six CH-47 rotor blades being painted outside a hangar, causing two of the blades to sustain non-repairable damage. (Class C)
8. While conducting AH-64D Flight School XXI day contact training, the aircraft experienced an engine hot start during the engine start sequence. (Class C)

Summary

Nine of the 16 Class A mishaps occurred under night /NVS conditions. Four of the Class A mishaps occurred at NTC. Not all of the 71 mishaps are listed above. Others fall into incidents such as open cowlings, inlet covers left in place during start, single-engine over-torques from attempted aircraft movement with a power lever pulled back, Np/Nr overspeed due to DECU malfunctions, training, etc.

Human error continues to be the leading cause of aircraft mishaps. The ability to reduce these errors is available; it takes supervisors and each individual to make the difference. Taking advantage of attention to detail, solid mission planning, and training to standard in simulators and in the aircraft can give units and aircrews the edge over human error. Engaged leaders and crews can make the difference and prevent the mishap. It's up to you! ■

AH-64 CLASS A-C MISHAPS

FY	Class A	Class B	Class C	Fatal
2015	3	2	3	2
2016	4	5	7	4
2017	2	2	8	2
2018	4	4	17	4
2019	4	1	7	0
Total	17	14	42	12

Jon Dickinson
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The Funny Thing about Standards

The funny thing about standards is they can lead to a far better or worse outcome for Army aviation operations. When we talk about standards, we imagine units conducting missions safely and successfully with high standards. We don't typically picture a unit operating with low standards and failing in the mission or involved in a mishap.

Standards-based Operations

Standards are the linchpin of Army training and conduct. With these standards, the Army is able to manage and execute not only training and operational processes, but also the safety of these processes.

A leader's ability to define, train to and maintain a standard plays a crucial role in the effectiveness of the unit mission accomplishment and mishap reduction. Yet, within this standards-based organization, failing to set and manage standards and the standardization of operations and procedures can lead to problems. When leaders break the standard or when standard operating procedures (SOP) are vague, conflicts are created.

When Leaders Break Standards

Leadership breaking standards creates standardization issues which can have far-reaching impacts. As a leader, all the personnel within your unit, as well as others that have visibility of your actions, are always processing those actions and if you maintain or don't maintain the standard. Failing to maintain a standard or setting a low standard determines how your unit operates.

Examples of this range from minor to major infractions of the standard. These can be as simple as a noncommissioned officer (NCO) chewing out his platoon for leaving the hangar floor work area dirty, while his desk is disheveled. It's no wonder the platoon personnel find it easy to not meet the cleanliness standard in their work areas. The NCO's poorly maintained desk is still setting a standard — the wrong one. This creates a new low standard, which can lead to the next mishap.

Another example could be when an MBO "pencil whips" the brief and fails to actually understand the mission on which the crew or crews are being sent. So when the MBO doesn't actually take the time to review and understand the mission and its risk, he sets another low standard for the crews. Why do they really need to thoroughly understand the mission or the risk if the MBO doesn't care about it? Again, this new low standard sets the wheels in motion for the next mishap.

Standard: Ground guide for all aircraft ramp operations with hearing protection.

Commanders aren't immune from breaking standards. When commanders deviate from the standard, they elevate the impacts of setting those new low standards. For example, a commander may direct the training mission to go even when weather conditions are below the minimum because the air assault "has to go." This can directly impact the crews because they now think they can take higher risk because the commander is OK with it.

Setting the example is the best practice to gain the respect and emulation of your personnel. When leaders meet the standard in task and conduct, they set a high standard for their personnel. If you were to survey the field, odds are you would find subordinates are quick to point out how some leaders lead by the "do-as-I–say-not-as-I-do" principle. This attitude and these actions permeate through units to the lowest levels. Examples of this are as simple as officers and NCOs picking and choosing what regulations and directives they decide to follow. For instance, during a promotion ceremony, the commander hammers the rank into the promoted individual's collar, or an NCO does a hard pin of air assault wings to one of his Soldiers. While the directives say this is not condoned, you

just set the conditions for your Soldiers to emulate your disregard for standards of conduct. So when they fail to follow regulatory standards, it can easily lead to the next air or ground mishap.

SOP Conflicts

SOP conflicts can occur, which sets the conditions for a mishap. When the SOP directs actions that conflict with crew actions and situational awareness during flight missions, this can have a detrimental effect on safety.

Examples of conflicts could be in the SOP requirements for establishing contact, providing situation reports or battle handovers. When the unit or higher-level SOP requires an excessive amount of communications contact with aircrews while in high-workload environments, it can overwhelm the crew. At this point, there is a conflict in which standard to maintain. Does the pilot under high workload, at night in zero illum conditions take his full attention off maintaining the aircrew training module task of maintaining situational awareness to make the SOP-specified contacts or not?

Additionally, when aircrews launch but don't know the SOP or spirit of the SOP and leaders allow it to happen. For example, flights lining up or conducting improper commo checks outside of SOP creating excessive radio chatter and confusion.

What about when the radios light up in combat operations and the crew becomes intensely engaged in maintaining the base task-level standards while performing terrain flight but is also SOP required to push that situation report to higher or push the battle handover information to the relieving team. The higher the cockpit workload (i.e., degraded visual environments (DVE), actions on contact, brownout/whiteout conditions) the more conflicting it becomes. So based on the SOP not being thoroughly vetted and adjusted as a mechanism to actually decrease the crew workload and relay vital information while engaged in missions, it can produce the background noise to take the crew's attention at critical times and lead to the next mishap.

High cockpit workload demands minimal distraction.

Conclusion

Setting standards, high or low, has far-reaching effects operationally. A leader must have the ability to understand that minor infractions and failure to maintain a standard can morph to the unit next mishap. The eyes of the unit or units, depending on your level of organization and personnel in your charge, are upon you and your team of officers and NCOs.

Take the time to look at yourself, your leadership team and your SOP. Then take a look at your unit by walking around the admin areas, standards shop, unit supply, motor pool, hangar and maintenance offices. What are you seeing? Are the areas an indication of setting high standards or low standards?

Sit in on the next few air mission briefs. How well do your MBOs understand the mission and risk associated? Is it a detailed brief or are they just going through the motions? Is your standards team OK with this? Take a flight with your crews. Are they operating with high standards?

Finally, evaluate how your personnel conduct themselves. Do their actions on a daily basis or at events show they follow the standards and directives of higher? Do you — as the commander, first sergeant, standardization instructor pilot, pilot in command or unit leader — set high or low standards? The standards you witness your unit, platoon or flight team displaying on your walk-around are the standards you set for them to meet. ■

Aviation Division
Directorate of Assessments and Prevention
U.S. Army Combat Readiness Center

Mishap Review - AH-64E Sprag Clutch Failure

While conducting hovering flight at night under zero illumination, the aircraft experienced a rapid main rotor decay, massive torque spike and audible bang. As a result, the aircraft's drivetrain was severely damaged and could not maintain enough main rotor RPM to remain airborne. The aircraft impacted the ground and sustained serious damage.

History

The mishap crew was part of a battalion aerial gunnery qualification in preparation for an upcoming combat training center rotation. The battalion assets arrived at their aerial gunnery training area and began conducting operations two days later. The unit conducted briefings, crews were designated and appropriate risk assessments and mission briefings were executed. The mishap crew was slated to conduct a two-ship flight to engage in night aerial gunnery of Table VII, VIII and IX. The mishap crew was designated as "Gun 1."

Prior to departure, the crew experienced a few maintenance delays that required a ground run and maintenance operational check. Following a two-hour weather delay, the two aircrews had the weather to depart and execute the gunnery operation. Due to time constraints, the crews determined they could execute only the Table VII. They were re-briefed by the mission briefing officer and updated their weather.

Ready to execute one table, the mishap crew started and ran-up the aircraft on the parking pad. As the aircraft rose and hover taxied aft to exit parking at an altitude of 17 feet above ground level (AGL), it experienced a rapid main rotor (MR) RPM decay followed by a massive torque spike. The aircraft lost tail rotor authority while descending due to MR droop. The aircraft struck the ground left-side low with a rearward momentum and came to rest. The aircrew was not injured.

Crew

The pilot in command (PC) had 436 hours in mission, type, design, series (MTDS) and 1,078 hours total time. The pilot (PI) had 424 hours in MTDS and 1,793 hours total time.

Commentary

The aircraft experienced a materiel failure of the sprag clutches. This failure resulted in rapid MR RPM decay followed nearly immediately by a massive torque spike. It is believed the near simultaneous slippage of the No. 1 and No.2 sprag clutches released the drivetrain input. When the clutches re-engaged, it created a massive shock to the drivetrain and resulted in the aircraft engine droop, main transmission damage and loss of tail rotor authority. The mishap crew took immediate actions to get the AH-64E on the ground with no crew injuries and exited the aircraft.

This situation demonstrates that even when units take all actions within the scope of the known to reduce the risk to aircraft and crew, unforeseen events can still occur. For aviation personnel, aircrews and supporting personnel, it is important to ensure you understand the dangers of aviation operations. There are no guarantees that mechanical systems will not fail. It is imperative aircrews train thoroughly and know their emergency procedures while using simulator training to inject those situations into missions so crews maintain their "edge." Supporting personnel have that same implied task; train hard in your skillset and tasks so you become the resident expert. Use your knowledge to counsel those less experienced and impart lessons learned from your experiences. The ability to react to unforeseen events requires acknowledging they do occur in our operational environment. Prepare the best you can so when they do occur, you can react without hesitation and fly the aircraft. ■

Class A - C Mishap Tables

	Manned Aircraft Class A – C Mishap Table									as of 21 Oct 19
	Month	FY 19					FY 20			
		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities
1st Qtr	October	1	1	4	0		2	1	1	0
	November	0	0	3	0					
	December	1	1	2	0					
2nd Qtr	January	1	1	0	0					
	February	2	0	0	0					
	March	0	1	5	0					
3rd Qtr	April	0	1	3	0					
	May	2	2	5	1					
	June	0	0	5	0					
4th Qtr	July	2	1	2	0					
	August	1	0	3	1					
	September	2	1	7	1					
	Total for Year	12	9	39	3	Year to Date	2	1	1	0
	Class A Flight Accident rate per 100,000 Flight Hours									
	5 Yr Avg: 1.23		3 Yr Avg: 0.97		FY 19: 1.23		Current FY: 2.48			

UAS Class A – C Mishap Table									as of 21 Oct 19
	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	0	0	1	1
MQ-5	1	0	0	1	Hunter	0	0	0	0
RQ-7	1	12	37	50	Shadow	0	1	2	3
RQ-11	0	0	0	0	Raven	0	0	0	0
RQ-20	0	0	1	1	Puma	0	0	0	0
SUAV	0	0	0	0	SUAV	0	0	0	0
UAS	11	14	41	66	UAS	0	0	0	4
Aerostat	1	1	1	3	Aerostat	0	0	0	0
Total for Year	12	15	42	69	Year to Date	0	1	3	4
UAS Flight Accident rate per 100,000 Flight Hours									
MQ-1C Class A	5 Yr Avg: 9.22		3 Yr Avg: 7.75		FY 19: 9.86		Current FY: 0		
RQ-7B Class A-C	5 Yr Avg: 58.64		3 Yr Avg: 42.68		FY 19: 111.83		Current FY: 154.0		

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

VOL. 13, NO. 8 • 14 November 1984

Thurman emphasizes safety to Aviation Officers Advanced Course graduates

Safety was a major point of emphasis when General Maxwell R. Thurman, Vice Chief of Staff Army, addressed the first class of officers to graduate from the Aviation Officers Advanced Course at the U.S. Army Aviation Center, Fort Rucker. on 24 October 1984.

The VCSA briefly recapped for his audience the history of Army aviation from the time 75 years ago when Wilbur and Orville Wright conducted the first military aviation flight. The Wright brothers were given an order to provide the United States Army with one airplane, two pilots, the necessary spare parts, and two crewmen to repair the aircraft.

LTG James M. Gavin wrote in an article entitled "Cavalry, and I Don't Mean Horses," published in Harper's magazine more than 30 years ago, of the potential of the helicopter and air assault tactics on the modern battlefield. As G3, DCSOPS, General Gavin was able to lay some of the early groundwork for this new type of cavalry.

General Thurman spoke of other pioneers who in 21 years of Army aviation brought the air mobile concept into being, developed air assault tactics and doctrine, participated in the research and development of aircraft, and became the first leaders of air cavalry units forged in the crucible of Vietnam.

"You must be the most professional and professionally demanding branch in the Army. Your responsibilities on the modern battlefield- in fighting the Airland battle-far exceed those duties that aviators have shouldered in the past," General Thurman told the graduates.

"Part of the professionalism for which you must strive is in aviation safety. Aviation safety has two important aspects: flight safety and reliable maintenance. No branch operates in a more dangerous environment … and there is no branch in the service in which the lives of its officers are more in the hands of the soldiers, the crew chief and aviation mechanic, than the aviation branch." Paraphrasing a statement by a journalist in Southeast Asia, General Thurman added, "Planes have wings and want to fly; a helicopter has ten thousand parts trying to tear themselves apart."

"Kick the tire. Light the fire. First one off is lead. We'll brief on guard. That's an old saying in the Air Force about aviation procedures. That was a 'seat of the pants' kind of flying operation in an environment where equipment was cheaper, flying was less dangerous, and the world in which we and our adversaries lived was much more forgiving. Those days are gone forever - if they were ever here at all for Army aviators," General Thurman warned. He compared the position of the advanced course graduates to that of earlier aviation pioneers. "Your challenge is integration of Army aviation into the heavy forces. You will have the chance to develop the tactics and procedures, the standards and values, and to establish the enduring traditions of the aviation branch." At the same time that there is the onrush of equipment to the heavy side, the VCSA emphasized that attention will still be given to insure that the United States Army has the world's best light forces.

General Thurman told his audience that they must be not only aviators but the most technically and tactically competent of all the Army's leaders. "Technically you must know more about the mechanics of flight and

flying than those whom you will lead. You must also be tactically competent, able to plan and execute support of an armored brigade in a 30km deep counterattack, using M1/M2/M3 with multiple launch rocket systems in support."

Aviation accident reports are among the significant events on which the VCSA is briefed every day. Invariably, investigations show all too many of these accidents are the result of pilot error-usually because a pilot was flying beyond his own capabilities or outside the safety envelope of his aircraft.

"Aviation flying hours will increase up to 40 percent in the next 2 years. You officers of the first advanced class will be going into the force at a time when flying hours will be as high as 2.4 million. You understand that the more you fly, the more risk there is associated with it. We need your very best efforts on safety," General Thurman emphasized.

General Thurman related some of the things he was asked when as the DCSPER he was the Army's chief safety officer. One of them was to let units remove the seats from the Black Hawk so that the aircraft could carry 23 troops. His answer was a resounding "No!" "That aircraft was designed with seats that would be crashworthy so that people riding in them might live if there was an accident. If we had wanted an aircraft to hold 23 people without seats, we would have designed it that way."

Similarly, people have asked why a pilot-in-command must fly the aircraft from the pilot station. "Because it was designed to be flown from the pilot's station-that's why."

"Everybody doing their own thing is simply not in the cards, so get your head straight and those of your subordinates straight about what your obligations are on the way the equipment is designed to operate."

The VCSA added, "Last December, when I took stock of the first quarter FY 84 accident data, I directed a stand-down for a day for aviation safety. I asked people, 'Is one day out of the training program too much for aviation safety?' Of course it's not and when you take command of whatever unit you get, remember rule number 14- 'When in charge, take charge.' That means you can stand down your unit anytime you choose to in order to have an aviation safety day so that it can be rammed home to every single member of your organization what your standards are in aviation safety."

Accountability from people who give mission briefings is another Thurman initiative. He directed the Army Safety Center to report to him the names of individuals who briefed each Class A aviation mishap. (Class A mishaps involve a fatality, $500,000 in damages, or a destroyed aircraft.)

"The final point is we must hold ourselves accountable … You must not permit yourselves the luxury of not holding people accountable. You must do that; it is part of your job as an officer and it is part of my job as an officer. You understand that no one has an inherent right to fly an aircraft. I repeat, no one has an inherent right to fly an aircraft. They have to demonstrate their competency to fly it. Bear that in mind, and that's true in any job we have in the United States Army. I ask your support in that … We can't do otherwise. Equipment is expensive, but most important of all is the loss of life. That is the greatest price of all."

General Thurman concluded, "Equally important to being technically and tactically competent is developing your skill and potential as leaders. You must care for your Soldiers. Today's Army has dynamite kids-whom you will lead-and dynamite equipment-which you will fly. But never forget the Soldier and his sacrifices and aspirations." ■

General Maxwell R. Thurman
Vice Chief of Staff Army

FY 85 Class A Mishap Countdown

	Month	FY 84 Class A Mishaps	FY 84 Army Fatalities	Month	FY 85 Class A Mishaps	FY 85 Army Fata1ities
1st QTR	October	7	10	October	**3**	**0**
	November	3	3	1 -14 Nov	**2**	**1**
	December	0	0			
2nd QTR	January	4	0			
	February	4	4			
	March	3	1			
3rd QTR	April	1	3			
	May	4	3			
	June	4	5			
4Th QTR	July	2	3			
	August	2	0			
	September	4	3			
	Total for Year	38	35*	Total to Date	**5**	**1**

*Army personnel only. Total number of fatalities in Army aircraft flight accidents was 37.

Hot Topics

PS Magazine's Evolution Continues

PS Magazine is evolving to a fully online, mobile-friendly information portal — a combination blog and wiki. The November 2019 issue will be the last time it appears as a 64-page, illustrated magazine. The cartoons that have been part of its brand for the past 68 years will give way to new forms of illustration, predominately photographs and videos, although its iconic characters — particularly MSG Half-Mast — will continue to appear, although less frequently.

Why the change? The primary reason is speed. Producing a fully illustrated magazine takes approximately four to six months, with four months minimum just to render the illustrations, as well as conduct several editing reviews for correctness. With its new fully online platform, turn-around time from inception to publication will routinely be days rather than weeks or months.

It's been a great run. PS Magazine, founded in 1951, will have published 804 issues when its November 2019 appears. It's proud of its heritage as the Army's leading source for preventive maintenance and supply accountability procedures — a heritage that will remain unchanged as it evolves into a fully online, mobile-friendly information portal.

What will change, starting immediately, are the following:

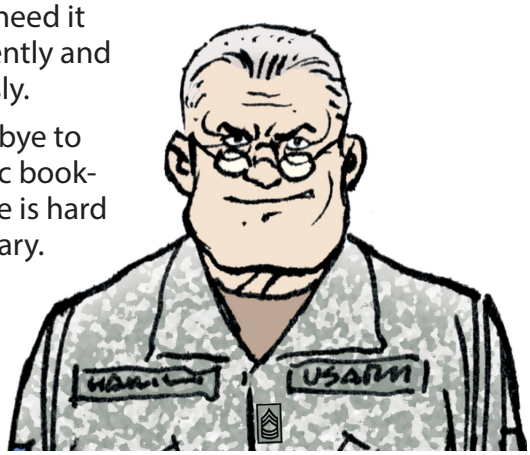
- No more traditional magazine. Rather than a 64-page, cartoon-illustrated periodical, the magazine will publish articles directly to its mobile-friendly website: www.psmagazine.army.mil
- No more hand-drawn cartoon illustrations or technical art. The era of being essentially a comic book will come to an end. Instead, the website will rely on photographs and computer-generated graphics along with occasional videos. However, its current iconic characters — MSG Half-Mast, Connie, Bonnie, etc. — will selectively appear on the website to sustain the PS brand.

- No more mobile application. Because the magazine is adopting a mobile-friendly web platform, articles will be readily accessible and readable using any mobile device's internet browser.
- Rapid dissemination of information. Because the magazine won't be illustrating every article with hand-drawn art, which takes time to produce and requires quality control, it'll be able to post articles faster.
- More emphasis on trends. The evolution of PS Magazine goes hand-in-hand with an evolution in the way the Army's logistics assistance programs and representatives go about their daily business. Moving forward, they'll be much more focused on identifying systemic trends that demand rapid information sharing across the enterprise if they're to be sustained or corrected. PS will be integral to this information sharing.

What doesn't change is:

- The Reader Service. The ability to ask PS Magazine questions, request information or clarification, or recommend best practices remains intact. Every query will continue to receive a fully researched and vetted reply.
- The magazine's commitment to the warfighter. PS's focus has always been on the Soldier/maintainer at the tactical edge. The changes it's making are aimed at enhancing this commitment by getting critical information to those who need it more efficiently and expeditiously.

Saying goodbye to the iconic comic book-styled magazine is hard but also necessary. Even though the vehicle or venue is changing, the mission



isn't. PS Magazine is committed to being the Army's — even the DoD's — go-to resource for information that enhances unit and fleet readiness. With your continued support and feedback, it'll ensure warfighters are ready to fight and win! PS Magazine's recurring question is, "Would you stake your life right now on the condition of your equipment?" The stories we provide are intended to help you answer, "Yes!"

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Mishap Briefs #81

ROTARY WING

Attack
H-64
D Model

- While flying nap of earth (NOE), aircraft struck wires, lost FLIR image, experienced vibration and sluggishness in the controls, and lost night vision system. Pilot turned on their white landing light to assist in landing, and subsequently main landing gear (MLG) collapsed during landing. (Class A)

E Model

- The aircraft was in a left orbit at 200 foot above ground level (AGL) and experienced an engine failure resulting in a temporary overspeed and over-torque event on the No. 2 engine. (Class C)

Utility

H-60
M Model

- Aircraft main rotor system contacted a tree causing aircraft to land on its side in a confined area. (Class A)

- Aircraft was descending into military operations on urban terrain (MOUT) site to conduct left wheel bump procedure on roof top. Main rotor blades (MRB) struck a roof top cupola. (Class B)

- During instrument training, at 3,000 feet mean sea level (MSL) and 130 knots indicated airspeed (KIAS), the No. 1 engine and rotor speed began to rise above normal limitations to 122 percent as the No. 2 engine torque decreased to single digits, upon recognition, crew diagnosed the emergency and began their initial steps. (Class C)

L Model

- During hoist training under night vision goggle (NVG) conditions the hoist cable oscillated with increasing frequency and began to swing side to side striking the left side of the aircraft. There was class C damage to the hoist guard, cable and left side of the aircraft. (Class C)

- Crew was conducting sling load operations when the sling rope tore during flight, resulting in separation of the load from the aircraft and impacting on a warehouse storage building. (Class C)

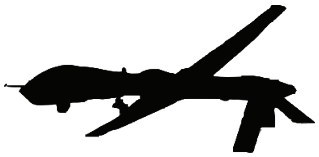
H-72
A Model

- Aircraft instrumentation reflected No. 1 engine turbine outlet temperature (TOT) exceedance readings during engine start up. Subsequent maintenance validation revealed module No. 3 and No. 4 sustained damage. (Class C)

Cargo
H-47
G Model

- Aircraft was hovering in a forward area refueling and rearming point (FARP) site when the No. 2 engine flamed out. While landing, the No. 1 engine was over-torqued and possibly over temped. (Class C)

UNMANNED



MQ-1
C Model

- Crew experienced decreasing oil pressure which caused the engine to fail. Aircraft crash landed into the sea. (Class A)

- Unmanned aircraft system (UAS) suffered a No. 1 alternator failure that led to lost link. UAS presumed to have crashed while enroute back to airfield. (Class A)

- During takeoff roll, UAS automatic takeoff and landing system (ATLS) did not meet parameters for system to continue takeoff. ATLS messaged the failure and aborted the takeoff. During abort UAS nose gear abruptly contacted the runway followed by aircraft left yaw. Aircraft departed the runway and came to rest on an adjacent runway. (Class A)

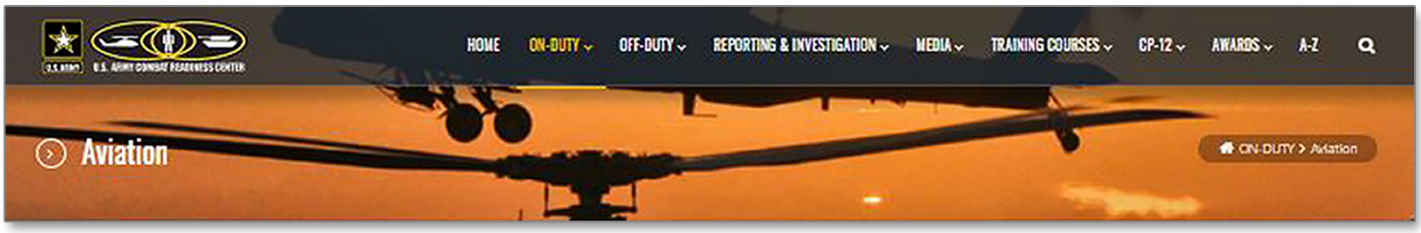
RQ-7BV2

- Engine temperature exceeded its limitations, therefore, aircraft experienced engine failure after approximately 4 hours and 30 minutes into flight. The flight termination system (FTS) was deployed and the UAS was recovered. (Class C)

- UAS experienced flaps servo fail and flaps fuse fail inflight at 5000 feet MSL. With minimal fuel onboard and above suitable terrain, the FTS was successfully deployed and the aircraft impact with ground caused damage. (Class C)

- UAS left wing struck the arresting gear assembly (barrier net and assembly pole) during a hard landing. (Class C)

Visit the U.S. Army Combat Readiness Aviation Division at: https://safety.army.mil/ON-DUTY/Aviation



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FIVE DEADLY WORDS

Five deadly words for Army aviation personnel continue to prove injurious and even deadly as mishap factors. To better prepare your crew and yourself for each mission, it is wise to know these five deadly words and what they mean. Each commander, leader, flight and ground support team member should get to know these words, not just as some "punch line" at the end of the mission brief or a safety class but for what they really are, mission and personnel killers! Take a look and commit these to memory, they are just as important as the chapter nine emergency procedures or your standard operating procedures in high risk task, the human factors analysis and classification (HFACS) codes are identified for further information.

- **UNTRAINED:** Is a factor when one-time or recurrent training programs, upgrade programs, transition programs or any other local training is inadequate or unavailable (HFACS SI003).

- **UNSUPERVISED:** Is a factor when the availability, competency, quality or timeliness of leadership, supervision or oversight does not meet task demands. Inappropriate supervisory pressures are also captured under this code (HFACS SI001).

- **UNDISCIPLINED:** Is a factor when an individual, crew or team intentionally violates procedures or policies without cause or need. These violations are unusual or isolated to specific individuals rather than larger groups (HFACS AV003).

- **COMPLACENT:** Is a factor when the individual has a false sense of security, is unaware of or ignores hazards, and is inattentive to risks (HFACS PC208).

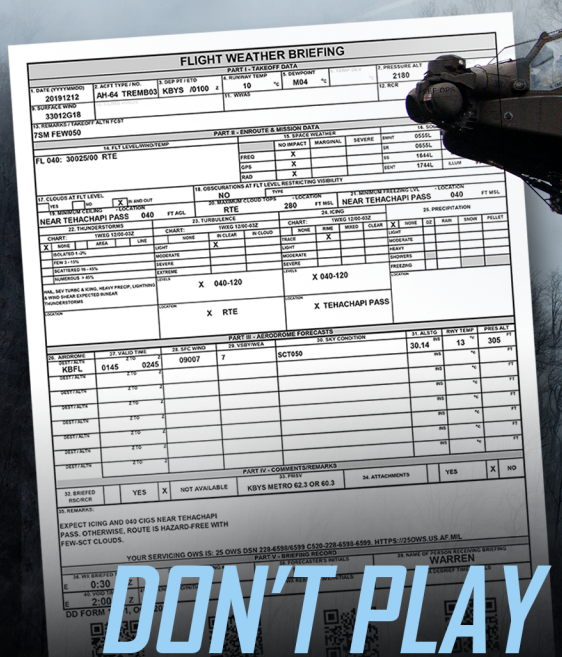
- **OVERCONFIDENT:** Is a factor when the individual overvalues or overestimates personal capability, the capability of others or the capability of aircraft/vehicles or equipment (HFACS PC206).

5 Questions

1. When was the last time you felt like you knew it all about the mission and didn't listen to the brief because it was the "same old brief?" Were you feeling overconfident maybe?
2. As a commander, how did you manage your unit's training program when a resource you required wasn't available? Did the training strategy you provided meet the requirements?
3. As a mission briefing officer, when you brief your crews, do you thoroughly understand the mission and the inherent risk? Do you provide your crews with options for unforeseen event actions?
4. You are a pilot in command and have made countless brownout landings. Is it necessary to brief actions for degraded visual environment (DVE) operations prior to flight when you expect you may be conducting brownout landings?
5. While conducting missions in support of ground forces, to make the mission happen is it OK to bend the rules as long as you get the mission done?

This looks worse than the forecast.
What is he thinking?

No problem!
We always make it through.



DON'T PLAY
Winter Weather Roulette
THE HOUSE ALWAYS WINS!

- Get a thorough weather brief
- Make sure you note en route factors (lower ceilings, icing, turbulence)
- Take geography along the route into consideration (mountain passes, terrain higher elevation)
- Brief contingencies on encountering winter weather hazards

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