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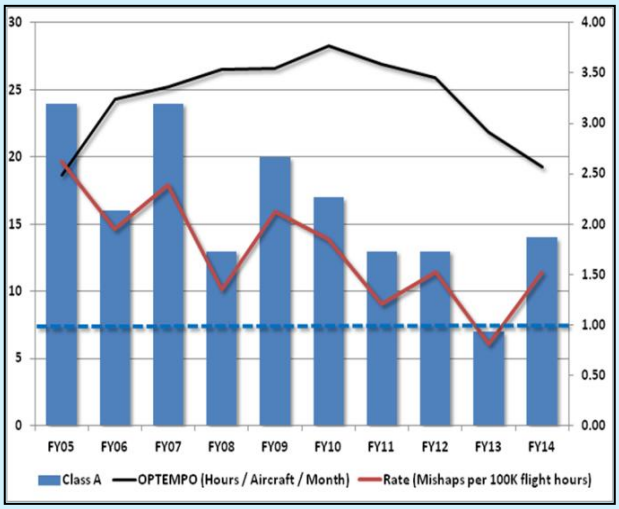
Online newsletter of Army aircraft mishap prevention information

Excerpt from the "Army Safety and Occupational Health Objectives for Fiscal Year (FY) 15"

Objective Three: Aviation Mishap Mitigation. Maintain aviation Class A accident rates at less than 1.0 per 100K flight hours. FY13 was the second safest year for Army Aviation with a Class A accident rate of 0.81 due to continued engaged leadership throughout the aviation chain of command. For special emphasis, spatial disorientation (SD)/degraded visual environment (DVE) is the human error mishap contributing factor that accounts for 24 percent of our aviation losses since the initiation of combat operations. Reduce SD/DVE accident by 50 percent through enhanced SD/DVE training and leader awareness of this loss contributing factor. GEN Odierno, Chief of Staff of the Army



Aviation leaders, air mission commanders, pilots in command, and non-rated aircrew members have been issued this challenge by the Chief of Staff of the Army… **reduce our manned aviation Class A mishap rate to below 1.0 per 100K flight hours.** Our 10 year trend is tracking toward meeting this goal, however, if we were measuring our FY14 results against this metric, we would have missed the mark with our mishap rate increasing from last year's rate of 0.81 up to this year's rate of 1.52.

When analyzing this year's mishaps and our operational trends, two factors are immediately evident. The first is that we flew fewer flight hours during this fiscal year with a 12 percent reduction in total number of hours flown. The Second factor is we reversed the trend of having more mishaps in combat than during training. In Fiscal Years 2010-13, 65 percent of the Class A mishaps occurred in combat. This year only 25 percent of the accidents occurred in combat, marking a significant shift in our operational environment and how leaders should evaluate their missions while operating at home station.

More importantly, pilots in command and air mission commanders must maintain their mission focus while in garrison with the same level of intensity as if they were still operating in the complex combat environment found in Operation Enduring Freedom. A sizable percentage of the mishaps that occurred during this fiscal year can be attributed to just plain not paying attention: two incidents with UH60s ground taxiing into stationary objects, two occasions of pilots in command becoming task saturated during training and drifting into trees, one incident of an instructor pilot not managing the workload in the cockpit properly and allowing the aircraft to drift into an unsuitable landing profile and one occasion of a mid-air collision resulting from poor airspace integration.

Human error contributed to 81 percent (13 of the 16 Class A) mishaps. If we are to meet the CSA's goal of a Class A mishap rate of less than 1.0 mishaps per 100K flight hours we, as a group of aviation professionals, need to work as a collective team to meet this threshold. We already have the tools on-hand to accomplish this feat: Engaged leadership to mitigate risks to the lowest level with good control measures enacted, crew selection that matches the correct levels of experience to the hazards present in the operation, good mission briefs to prepare us for execution, effective aircrew coordination during the flight to balance crew workload and manage emerging risks and post-mission after-action reviews to learn and capture the lessons that occurred during the flight.

There is nothing new in this process. If we apply what we know and fly as we were trained, then meeting the CSA's goal for Army aviation mishap rates should be readily attainable.

LTC Mike Higginbotham, Aviation Director, Future Operations, US Army Combat Readiness Center
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Preliminary Report on FY14 Aircraft Accidents

In the **manned aircraft** category, Army aviation experienced 60 Class A-C aircraft accidents in FY14. This is a decrease from the 75 Class A-C aircraft accidents in FY13, including a decrease in fatalities from 8 to 6. There was an increase in Class A mishaps from a total of 9 last year to 16 in FY14.

	2014	**2013**
CLASS A	**16**	**9**
CLASS B	**7**	**8**
CLASS C	**37**	**58**
TOTAL	**60**	**75**
FATALITIES	**6**	**8**

CLASS A and B Summary: There were 23 Class A and B mishaps, 18 of which occurred at night. Nine of the 23 occurred in OEF. Human error was the cause factor in 15 (83%) of the 18 mishaps reporting a cause factor. Materiel failure or suspected materiel failure was contributing in 3 (17%) of the 18 mishaps. Five of the 23 Class A and B mishaps had unknown or not yet reported cause factors.

The flight category Class A mishap rate (RW+FW) for FY14 was 1.52 (Class A flight mishaps per 100,000 hours of flight time). For FY 13, the rate was 0.81.

Operational Assessment Concerns:

Human Error: Dust landings were contributing factors in two Class A, one Class B, and one Class C aircraft mishaps. There was one fatality associated with the dust events. Power management contributed to three Class A, two Class B, and two Class C incidents. Additional Class A mishaps included two UH-60 ground taxi mishaps, one AH-64D mid-air, one KA300 (C-12 type), and three main rotor blade strikes during a NVD flight.

Materiel Failures: Class A materiel failures included one tail rotor gearbox failure, one electrical fire in flight, and one flight control malfunction.

2014 Breakdown by aircraft type:

	Class A	Class B	Class C
H-60	4	1	11
AH-64	7	3	7
H-47	3	1	3
OH-58D	1	1	8
LUH-72	0	0	0
TH-67/OH-58	0	3	0
AH/MH-6	0	0	2
Mi-8/17	0	0	0
C-12/UC-35/C-26/C-37	1	1	3
EO-5C	0	0	0

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Synopsis of selected FY14 accidents (* denotes night mission)

Manned Class A

- H-47: On climb-out at 150' AGL all three cargo hooks reportedly released and jettisoned a M777 howitzer sling-load.

* AH-64D: Departing refuel, aircraft experienced rotor droop followed by loss of tail rotor effectiveness. Aircraft descended to ground impact, rolled, and came to rest on its left side. Crew was able to egress with minor injuries.

* AH-64D: Aircraft drifted into trees during night vision system training. Aircraft came to rest on its side.

* AH-64D: Aircraft was Chalk 2 in a flight of two conducting mission training when it descended into a wooded area and crashed. Crewmembers were extracted with treatable injuries.

* H-60M: While conducting night insertion, crew encountered brownout conditions and power limiting factors. During a go-around the aircraft struck a cell tower and crashed. One passenger sustained fatal injuries. Aircraft was destroyed.

- H-47: Aft main rotor system made contact with the fuselage during a roll-on landing. Class A damage reported.

* H-47: Aircraft main rotor system contacted terrain during a pinnacle landing and crashed into a ravine. One crewmember fatality.

- H-60A: Flight of two were ground taxiing to parking when the lead aircraft contacted a light pole with the main rotor. Flying debris damaged the trail UH-60 as well as other parked aircraft on the ramp. Class A damage reported.

* AH-64D: Crew of aircraft #1 was conducting air assault training with a sister ship when it collided with a separate AH-64 conducting a recon in the vicinity. Both aircraft crash landed and were heavily damaged. No significant injuries reported.

* H-60M: Aircraft was conducting training in the traffic pattern when the tail rotor gearbox failed and the aircraft crashed. One crewmember sustained fatal injuries.

* KA300: Aircraft was on final approach when suspected wake turbulence from a preceding heavy aircraft caused loss of control. Aircraft crashed with three fatalities.

* H-60L: Aircraft was being ground taxied to parking when it made contact with the wing of a parked private plane. Class A damage reported.

* OH-58D: Crew was en route to a training area when they experienced a low rotor RPM warning while in low-level flight. Aircraft descended into tree line. Crew was able to egress with minor injuries. Aircraft was destroyed in a post-crash fire.

* AH-64D: Aircraft crashed just after take-off from the airfield and came to rest on its left side. Class A damage reported with one crewmember receiving minor injuries.

* AH-64E: Crew was participating in night operations when they detected smoke odor in the cockpit. While conducting an emergency landing the crew experienced a loss of night vision systems. The aircraft experienced brownout on landing and rolled on its side. Crew was able to egress. Class A damage.

* AH-64D: Crew was conducting aircraft qualification training. During a slope landing the crew reported un-commanded cyclic inputs. Aircraft contacted the ground and sustained Class A damage.

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In the **unmanned aircraft systems**, there were 44 Class A–C incidents with 10 Class A, 15 Class B, and 19 Class C mishaps reported. The Class A mishaps included three Aerostat balloons, six MQ-1s, and one MQ-5B. The RQ-7Bs comprised 23 of the 34 Class B and C mishaps with cause factors relating to engine failures, landing problems, and lost link.

2014 Breakdown by aircraft type:

	Class A	Class B	Class C
MQ-1	6	0	3
MQ-5B	1	1	0
RQ-7B	0	12	11
RQ-20A	0	0	1
RQ-11	0	0	1
Aerostats	3	2	3
Total	10	15	19

Synopsis of selected accidents (FY14):

UAS Class A

- MQ-1C: Aircraft was returning to base when it impacted terrain following an un-commanded turn.
- MQ-1: OIL PRESSURE and ENGINE OUT indication occurred in flight. System was crash landed at an identified location and recovered as a total loss.
- MQ-1: UA impacted mountain terrain during climb-out. Total loss reported.
- MQ-1C: System crashed while on normal approach to land.
- MQ-1C: UA had uncommanded movement during taxi. The ground crew pull the GDT and LGDT circuit breakers but the vehicle continued forward until striking a hangar. Class A damage reported.
- MQ-5B: System had reached 250' AGL following launch when it initiated an uncommanded descent and impacted the runway. Total loss reported.
- MQ-1C: Controller lost link with the system as it was descending to land on the runway. UA impacted the runway. Total loss reported.

Aerostat Class A

- PTDS: Aerostat descended to ground contact after loss of helium.
- PTDS: Tether snapped in high winds. Class A damage reported.
- PTDS: Winds snapped tether while aloft.

Other UAS mishaps

-RQ-7B: Crew received generator and ignition FAIL warnings during flight. Recovery chute was activated at 500' AGL. UA recovered with damage. (Class B)

- RQ-7B: Crew experienced a flap servo failure during UAS flight training and the system exceeded its roll tolerance during recovery. UA descended to ground contact inverted and was recovered with damage. (Class B)
- RQ-20A: Crew lost link during flight. System reported as total loss with no recovery. (Class C)

New Challenges with Decisive Action rotations from a Safety Perspective

CW4 GILBERTO G. MARTINEZ JR
Aviation Safety Trainer
National Training Center (NTC)

The National Training Center (NTC) can be one of the most challenging and demanding training environments we face. While there, you will have the important task of training in a demanding environment and protecting yourself and the lives of your Soldiers. Your ability to safely accomplish your unit's training objectives will be met if you follow your home station safety precautions, enforce discipline within your unit and use common sense. In the Decisive Action (DA) fight, the challenges are significantly increased. Operations within a tactical assembly area (TAA) and associated "jumps" to new locations create added challenges across the board.

Force protection is a command responsibility. Observer controller/trainers (OC/T) at the NTC provide safety observations and on the spot safety corrections to assist the commander in managing unit risk; however, units at all echelons are required to integrate risk management into all phases of missions, operational planning, preparation, execution, and recovery operations.

Here are some of the new challenges from a safety perspective associated with DA rotations at the NTC:

Soldiers - There is a significant increase in the physical demand placed on Soldiers, especially those involved in tear down, set up, convoys, perimeter security etc. In recent years a high percentage of Soldiers have become accustomed to working and sleeping in an air conditioned environment. Soldiers who work on aircraft usually had some sort of clam shell or hangar where they conduct maintenance along with swamp coolers. The physical demands of operating in an environment where those Soldiers are exposed to the potential extreme weather conditions and harsh environment can take its toll. Surface temperatures in the Mojave Desert can reach 125 degrees Fahrenheit during summer months, winter temperatures can fall below freezing for periods lasting over 48 hours. Heavy rains can cause flash flooding in some areas and wind storms, which occur year-round may ground aircraft and down tents and antenna if not properly secured. Fatigue and complacency can set in much earlier in the DA fight. There is a significant increase in heat related injuries during the summer months.

Aircraft/Pilots - For the most part, Army aviation personnel have become accustomed to operations at improved landing areas. One of the big challenges they face in the DA fight is take-offs and landings at unimproved landing areas. The most demanding of these are under night vision goggle conditions with at-or-near zero illumination in areas of low contrasts. Add to that a (potential) low-time newly assigned pilot in command with a low-time pilot, a crew unfamiliar with the landing area and procedures, inadequate markings of the landing area, uneven/sloping terrain, heavy sand and dust, obstacles within the landing area such as tents and generators and the risk goes up. It is imperative that aviation units conduct proper risk mitigation while operating in a DA environment. This will greatly increase their chances of completing a safe and successful rotation at the NTC.

Parking Plan- Consider rotor wash and how it will affect personnel, equipment and tents. Ensure adequate distance between aircraft. Landing in potential brown out conditions is a high probability on a regular basis due to operations within a TAA and "jumping" to new locations. The appropriate marking of parking pads will significantly reduce the chances of an accident/incident in your

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aircraft parking area and at forward arming and refueling points. Consider the risk associated with landing in the worst conditions. These conditions, if not mitigated, can lead to unfortunate significant events. Identify and mitigate the risk as much as possible in order to minimize your chances of having an accident or incident.

Selection and set up of the TAA - Ensuring adequate distance between aircraft parking areas, tents and equipment, while still taking security into account, can be difficult. Once established, it is important to mark aircraft parking pads in order to minimize risk and avoid confusion when landing. Vehicle movement through an aircraft landing/parking area has been an issue in the DA fight at times. It is important to ensure all personnel are aware of areas to avoid while maneuvering a vehicle within the TAA, especially at night. Every TAA location set up will not be the same and control measures must be taken to ensure Soldiers know which areas may be hazardous and to which areas to avoid if necessary.

General Flight Procedures - Procedures in and out of the FARP, parking areas and TAAs, along with challenging mission profiles, make operations more difficult while operating at the NTC. Other hazards include movement to a new TAA where crews are unfamiliar with the area. Procedures in and out of these areas must be published and briefed to all crews to minimize confusion and chances of mishaps/mid-airs.

ATC - Air traffic control personnel have their challenges with the tear down and setup of communications equipment. The reliability of adequate communications with the control tower can be intermittent and create a potential hazardous situation. In addition to getting clearance from tower, pilots must clear themselves visually. Pilots must also be prepared to utilize ATC briefed frequencies as a common air traffic frequency in order to de-conflict with other aircraft. Addressing any communications issues early will greatly decrease the chances of a mishap within the area of towers controls.

Severe Weather - Due to the potential of extreme weather conditions of NTC there is a good chance the rotational unit will execute their 'Severe Weather Plan.' The use of a hangar may not be as easy as it was on previous rotations. The proper coordination and utilization of vehicles to protect aircraft, tents, and personnel is key while in operating in a TAA.

Hazards Associated with Vehicle Operations - With the increase in the number of convoys and amount of equipment moving to occupy new TAAs, there has been a rise in vehicle related accidents. In addition to more convoys, Soldiers may have little to no experience with driving under NVG conditions. This has also caused a rise in vehicle related accidents. Enforce proper licensing; rollover drills, discipline and the use of ground guides when appropriate will significantly reduce accidents.

Living/Sleeping Areas - With increased traffic, the risk of potential injury or death obviously goes up if not mitigated. Whenever possible, Soldiers will sleep in the approved established sleep tents. The establishment of safe sleeping areas will be in accordance with the unit's SOP. At a minimum, sleep areas, which are established without tents or tents smaller than a GP medium, will be marked with white engineer tape that is hip high and approximately 20-feet from sleep area, with chem-sticks at night.

UXO - Since new ground is being occupied on a regular basis with the DA fight, unexploded ordnance is found almost at every new TAA. While many portions of the reservation have been surfaced-cleared of live and unexploded munitions, both live and dud munitions continue to be

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found. Mark the area without disturbing the UXO, report it through your chain of command to ensure Soldiers are aware of the location of the UXO and remain clear. Assist explosive ordnance disposal (EOD) personnel when they arrive and point out the location of the UXO**.**

CBRN - Soldiers are unfamiliar with operating in a chemical, biological, radiological, and nuclear environment may not be familiar with proper use of protective masks. Since all personnel are required to wear protective masks during CBRN attacks, the safety issues become obvious.

Lost in the Desert - It is deceptively easy to become lost at the NTC. With increased movement, the risk is elevated that a Soldier(s) can become lost. Report all Soldiers lost in the desert to an OC/T immediately. Using the buddy system when manning TCPs can also reduce the chances of a Soldier being lost during an attack, especially at night. The buddy system is mandatory during dismounted operations.

Fatigue/complacency - With the increased physical demanding conditions of a DA fight, it is imperative that fighter management is enforced and tracked. This can be an effective tool to use to identify individuals, crews and teams who may be at a higher risk due to fatigue. Work/rest cycles can greatly reduce risk of heat related injuries as well.

UAS - It is important that unmanned aerial systems units are familiar with the engineer assets and support which may be required to make improvements/repairs to take-off and landing areas. Prior coordination is the key. Severe weather conditions at NTC such as heavy rains and flash flooding have been the primary cause of damage to these areas during training events. Vehicles transitioning across the runway surface have also caused damage to the extent that repairs were needed and flight operations were halted.

Command Challenges - Keeping up with the pace of a DA fight for command means there is a need to simultaneously focus on wide area security while either planning for or conducting decisive actions operations as a maneuver element.

Focusing on these guidelines will assist your unit in achieving a successful and safe rotation into the National Training, Center, which can be one of the most challenging and demanding environments we face.

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Manned Aircraft Class A – C Mishap Table as of 21 Oct 14

	Month	FY 14 Class A Mishaps	FY 14 Class B Mishaps	FY 14 Class C Mishaps	FY 14 Fatalities		FY 15 Class A Mishaps	FY 15 Class B Mishaps	FY 15 Class C Mishaps	FY 15 Fatalities
1st Qtr	October	0	0	2	0		0	1	1	0
	November	3	0	5	0					
	December	1	0	3	0					
2nd Qtr	January	3	1	4	4					
	February	1	0	3	0					
	March	0	3	0	0					
3rd Qtr	April	1	1	5	0					
	May	3	1	2	2					
	June	2	0	6	0					
4th Qtr	July	2	0	5	0					
	August	0	0	0	0					
	September		1	2						
	Total for Year	16	7	37	6	Year to Date	0	1	1	0
	Class A Flight Accident rate per 100,000 Flight Hours									
	5 Yr Avg: 1.33		3 Yr Avg: 1.28			FY 14: 1.52			Current FY: 0	

Logging Pilot in Command

Chief Warrant Officer 5 Louis Papesca
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During Directorate of Evaluation and Standardization (DES) unit assessment visits conducted over the last several years, inspectors have seen how aviators have confused -12 entries with authorized flight duties in their flight records when logging Pilot in Command. IAW AR 95-1, "An entry will be made on DA form 2408-12 for each flight in aircraft and flight simulators by all crewmembers indicating duties performed, mission, and flight condition." Use the additional pilot in command symbols in AR 95-1 when logging flight time and the mission brief sheet must clearly indicate which aviator is the pilot in command.

The additional symbols that may be used to indicate pilot in command are MP, ME, XP, UT, IP, SP, or IE when occupying a flight crew station with access to the flight controls. The recurring question is "Can multiple crewmembers with access to the flight controls simultaneously log any of the PC symbols?" The answer would be NO, except in a few instances that we will discuss.

When using the symbols MP or ME, simultaneous logging on the -12 may be utilized for both aviators on test flights. If using the symbol XP, the symbol may be used by both aviators on experimental test flights when assigned to a designated testing organization or activity. If any of these symbols are mixed or duplicated, the mission brief sheet must clearly state which aviator is the pilot in command. These are the only symbols that are authorized for both aviators performing duties with access to the flight controls.

The confusing circumstance occurs during formal evaluations. When two aviators have access to the flight controls, and both are SPs or IPs, only one can be briefed as the overall pilot in command of the aircraft. For example, when a SP evaluates an IP during an annual evaluation, the SP logs SP and the IP being evaluated will log PI on the -12 at the conclusion of the flight. Then, when updating the records and since the SP is evaluating the IP performing IP duties during the evaluation, the SP will record the event on the DA Form 7122 with the appropriate duty title for the IP.

Aviators should not confuse the duties they are authorized on their DA Form7120-R, with the duty symbols on the DA form 2408-12. Your duty description or title does not automatically allow you to log that symbol on the -12. You are only authorized to log what is briefed on the approved DA Form 5484-R for that flight. As an example, an SP only logs SP on the -12 during the time frame they are conducting training or evaluating another SP or IP. If an SP/IP is briefed to conduct emergency procedure training with a PC/PI in conjunction with a mission, they would log SP/IP time during the time period of the emergency training and PC during the mission block.

On many occasions commanders direct their standardization pilots to perform instructor/evaluator duties from the cabin so the aircraft and the mission ends up with more than one person logging SP or IE on the same flight. These are common cases where a SP or IE is at one set of the flight controls instructing/evaluating an IP, while another SP or IE is in the rear evaluating the front seat SP/IE or training/evaluating a non-rated crewmember in the cabin. In both cases the flight can end up with more than one individual logging IP/SP/IE on the same flight, however only the SP/IE at the flight controls can perform duties as pilot in command.

--CW5 Louis Papesca, SCOUT /ATTACK Branch Chief, may be contacted at (334) 255-9825, DSN 558.

Accident findings: From the archives for your review

FINDING 1 (Present and Contributing: Human Error- Individual Failure): While conducting a maximum gross weight takeoff, the crew failed to select the correct maximum gross weight takeoff procedure. The crew performed a level acceleration takeoff attempting to use IGE power but needed to use a vertical takeoff with at least OGE power. As a result, the crew departed with a tail wind. This caused them to use more power than necessary for an OGE takeoff and resulted in rotor droop and an engulfing dust cloud that caused the crew to lose all visual references as the dust cloud was moving with the aircraft to the west/northwest.

FINDING 2 (Present and Contributing: Human Error- Individual Failure): While conducting maximum gross weight takeoff, the PC failed to properly identify and brief maximum torque available, monitor torque and maintain positive aircraft control. As a result, the PI was unaware of maximum torque available and pulled seven percent more torque than available, causing the rotor system to droop. The aircraft descended into a dust cloud and all crewmembers lost visual references.

FINDING 3 (Present but Not Contributing): While conducting a maximum gross weight takeoff, the crew failed to respond to an in flight emergency procedure. Both crewmembers were on the controls after the PC noticed they were drooping the rotor resulting in confusion regarding pilot on the control duties and pilot not on the control duties. When the PC engaged the cyclic mounted stabilator slew up switch, the stabilator audio sounded which prevented the low rotor audio from being heard. Neither of the crew reset the master caution which would have allowed a low rotor audio to be heard and to know when rotor was regained. The board determined this was a factor in regaining aircraft control, as the lack of audio would have re-enforced correct pilot action.

FINDING 4 (Present and Contributing: Human Error- Individual/Leader Failure): While conducting a maximum gross weight takeoff the entire crew was in violation of fighter management policy. Six out of nine crewmembers interviewed believed fighter management was regulated by hours worked and flown within a set period. The requirement to have a day off every 14 days regardless of hours worked was completely unknown. All crewmembers on the aircraft had worked a minimum of 24 days consecutively; the next lowest number was 44 days in a row. The FI on board said it (14 days followed by one off) was impossible to do, the pilot who was attached was knowingly in violation, and the company commander, were the only ones who even identified the 14 day requirement. As a result, the crew failed to make accurate and timely decisions, conduct proper crew coordination, and maintain aircraft control. Whether the crew admitted to being tired or not, they were in clear violation of the policy set forth in the APG dated 10 June 2007 with change 1.

FINDING 5 (Present but Not Contributing): While conducting a maximum gross weight takeoff, the aircraft was engulfed in a dust cloud. As a result of rotor wash and a tailwind the aircraft entered a dust cloud causing the entire crew to lose visual references and situational awareness. As neither of the pilots was familiar with cockpit indicators for wind, they incorrectly chose a takeoff with tailwinds. This contributed to why they descended into the cloud because of the torque required to overcome the wind with close to maximum gross weight.

FINDING 6 (Present but Not Contributing): While preparing for Day Mission Ready (DMR), the crew failed to conduct a proper crew brief. As a result crew duties, responsibilities, performance planning, weather, and risk assessment considerations were unclear.

Class A – C Mishap Tables

	Manned Aircraft Class A – C Mishap Table									as of 1 Oct 14
	Month	FY 13					FY 14			
		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities
1st Qtr	October	1	0	7	0		0	0	2	0
	November	0	1	5	0		3	0	5	0
	December	2	1	0	0		1	0	3	0
2nd Qtr	January	0	0	6	0		3	1	4	4
	February	0	0	2	0		1	0	3	0
	March	2	2	5	6		0	3	0	0
3rd Qtr	April	1	1	6	2		1	1	5	0
	May	0	0	6	0		3	1	2	2
	June	1	1	4	0		2	0	6	0
4th Qtr	July	1	0	5	0		2	0	5	0
	August	1	1	9	0		0	0	0	0
	September	0	1	3	0			1	2	
	Total for Year	9	8	58	8	Year to Date	16	7	37	6
	Class A Flight Accident rate per 100,000 Flight Hours									
	5 Yr Avg: 1.33		3 Yr Avg: 1.28			FY 13: 0.81			FY 14: 1.52	

UAS Class A – C Mishap Table									as of 1 Oct 14
	FY 13					FY 14			
	Class A Mishaps	Class B Mishaps	Class C Mishaps	Total		Class A Mishaps	Class B Mishaps	Class C Mishaps	Total
MQ-1	5	1	0	6	W/GE	6		4	10
MQ-5	2	0	3	5	Hunter	1	1		2
RQ-7	0	4	10	14	Shadow		13	11	24
RQ-11					Raven			1	1
RQ-20	0	0	6	6	Puma			1	1
YMQ-18									
SUAV					SUAV				
UAS	7	5	19	31	UAS	7	14	17	38
Aerostat	2	3	1	6	Aerostat	3	2	3	8
Total for Year	9	8	20	37	Year to Date	10	16	20	46

Example of engaged leadership

Ask twenty people what engaged leadership means and you'll get twenty varying answers as to what their definition entails. Everyone knows what it is but the many nuances make it hard-pressed to stick an all encompassing definition to it. Kind of a "I know it when I see it" thing. Even before they brought the buzz words into play I observed a commander demonstrate it dead-on in a combination of a couple of events.

More years ago than I care to count, I signed into my first Black Hawk unit as a senior CW2 fresh out of the AQC. Although they called it a combat support aviation company, it was a standard assault helicopter company, recently organized under a J series MTO&E with a captain as a commander. It was still a large company along the lines of a H series unit with the associated maintenance platoon.

Stopping at the orderly room to begin my in-processing, I was greeted by the company first sergeant who immediately told me to stand-by while he checked with the commander on his availability to see me. After a few moments the commander emerged with a friendly greeting and an invite into his office. Over the course of the next few minutes we conversed on our experience levels, unit mission, new aircraft and personal info. He closed with the normal welcome aboard – glad to have you and extended an invite to join the pilot's meeting that was going to start in a couple minutes. As an opportunity to meet the folks in the unit, I accepted and was directed across the hall to the training room where the pilots were beginning to assemble.

In the exchange of introductions and small talk I learned the meeting was called to address an incident that had occurred the day prior. Apparently one of the aircraft had been training in a confined area and incurred a blade strike. Upon return to the airfield, the damaged tip caps were whistling up a tune as it taxied to parking. I had some thoughts but didn't express them. Prior to the arrival of the commander, the company SP (a senior CW4) addressed the room discussing the blade strike (he was one of the crew) - what they were doing and how, based on his extensive experience, and after evaluating the circumstances – no vibrations, type of tree, flying qualities, maybe even a Vietnam story etc., he made the decision to fly the short 10 minutes back to the airfield where proper inspections and maintenance could be performed. It all sounded very good but as I said I had my own thoughts.

In walked the commander. He was mid-grade with a good experience base as an aviator and 1,500 hours of blade time. His demeanor was calm and to the point explaining that, in the course of realistic training, he could accept incidents such as the blade strike that had occurred. However, what he would not accept is not performing a precautionary landing to check out the extent of damage that may have been incurred. "Rich (referring to the SP), your IP orders are pulled for 30 days," after which the commander released the group and departed the room. No gray area on where he stood with the issue. I didn't truly appreciate the decisiveness of the commander's comments until being absorbed into the unit and subsequently learning the overbearing nature of the standards officer and his interaction with the aircrews.

My first mission, following my day and night stan rides, was scheduled with the commander. It encompassed a day out night return doing some paradrops, LZ hopping, instrument approaches, etc. During the conduct of the mission it became apparent that he was conducting his own "commander's eval" on me. Testing my knowledge, flight skills, situational awareness, and other things over the course of a couple bags of gas. I was comfortable in what he was doing and how he was doing it. From my perspective it didn't hurt that he was a good stick himself. Later, I found out, he flew with all the new personnel as quickly as possible. It assisted him in monitoring crew selections and knowing his pilots and their capabilities. Risk management before they called it risk management.

Engaged leadership - I know it when I see it. That he went on to become a general officer was no surprise to me. **Jon Dickinson, Aviation Directorate**

"It's an ill wind. . . . 9 Jul 86 *Flightfax*

If you think wind is something only fixed-wing aviators need worry about, you obviously aren't one of the helicopter pilots who has experienced firsthand what wind can do to a rotary-wing aircraft. We aren't even talking about the kind of winds found in extreme weather, such as thunderstorms. We're talking about your everyday variety that can occur just about anywhere, at any time.

Of course in places where winds almost always prevail, caution is even more important. A helicopter was making an approach to a ridgeline to the northeast. About 10 feet from touchdown, the nose tucked and spun to the right. The pilot applied full left pedal, with no effect. He allowed the aircraft to continue forward and added additional forward cyclic. As the aircraft continued to spin right, both the low rpm audio and warning light came on. The aircraft spun around twice and the tail rotor hit the opposite slope. The aircraft crashed and rolled down the slope. A wind gust from the southerly quadrant caught the aircraft in a downwind condition during high power demand, on a day when pressure altitude was relatively high. The pilot's corrective actions- left pedal, forward cyclic-were too little, too late, or both. If it's been a while since you read FM 1-202: Environmental Flight, a quick review of some basic principles might be in order. In chapter 4, the manual says:

Determination of En Route Winds

Every effort should be made to determine the wind condition both before takeoff and while en route. Weather forecasters can provide general information, but accurate information for the specific area of concern is not available through this source. Where ground communications exist with units in the area of operations, contact should be made to ascertain the existing wind conditions. Aviators who have recently flown in the area can provide a valuable source of information concerning wind conditions. However, sources of wind information are not always available. Therefore, you must learn to use certain visual cues when estimating wind direction and velocity. The cues are divided into two categories.

Ground indicators

When using ground indicators to determine the wind condition, remember that surface winds are being indicated for that specific location. The wind characteristics a short distance away may be different.

• The upwind part of a small body of water is indicated by smoothness. It may be wavy or turbulent on the downwind side. Wind velocity is indicated by the turbulence of the water. A whitecap will occur on an unprotected body of water when the wind velocity reaches 20 miles per hour.

• Smoke provides the most accurate indication of wind direction. Wind velocity is indicated by the pattern the smoke forms on the ground. In light wind, smoke will rise vertically with little horizontal movement. In strong wind, the smoke will disperse horizontally with little vertical movement.

• A flag or any material that is free to blow in a breeze will indicate both wind direction and velocity. The angle a flag forms with the ground indicates wind velocity.

Continued on next page

• The color of the leaves on deciduous trees provides an indication of wind direction. If the leaves appear light in color (silver), you are flying downwind. If you are flying into the wind, the leaves will appear darker in color.

• Wind blowing over tall grass growing in open fields appears like waves on an ocean. Wind direction is indicated by the movement of the swells. The more frequent the swells, the greater the wind velocity.

• Man-made indicators, such as wind sock tetrahedron, or smoke, grenades, provide the most accurate information concerning wind direction and velocity. A wind sock should be installed at landing zones where repeated operations are conducted.

Aircraft indicators

As you become more proficient in mountain flying, you will develop the ability to determine wind conditions by the feel of the helicopter and its apparent movement over the ground. Aircraft indicators that you can use to determine the wind direction and velocity are as follows:

• Aircraft drifts from the desired ground track. This condition indicates a crosswind condition. The amount and direction of the crab required to maintain the desired ground track gives an indication of wind direction and velocity.

• The apparent ground speed appears to be either faster or slower than the indicated airspeed. This condition indicates the aircraft is being flown parallel to the wind. We aren't implying that if you are aware of these indicators you will always be able to avoid problems with wind gusts such as the one in the accident described, but you will certainly know more about what wind conditions you are likely to encounter rand be able to plan what to do to minimize their effects on your aircraft.

In another Incident, three Army helicopters were engaged in fighting a forest fire. One aircraft was diverted to another fire. After making a reconnaissance of the fire, the aircraft flew northeast to pick up water from a pond. As the aircraft descended, its rate of descent became excessive. The co-pilot, who was on the controls, pulled collective to stop the rate of descent. He said later that he hit the left pedal stop. As the pilot got on the controls, he saw the torque meter gauge going back down through 65 pounds of torque. The pilot reduced collective, flew to the nearest available landing area, and landed. The pilots said It "felt like the bottom fell out" during the descent. The aviators said winds appeared to be from the northeast (judging by smoke and ripples on the water). A flight service station reported that winds at that time of day were 230 degrees at 11 knots. It appears the aircraft may have been in a downwind condition and the copilot allowed an excessive sink rate to develop, going below barriers.

Early aircraft designers were careful observers of the original pioneers in flight-birds. Birds don't take off and land downwind and neither do prudent aviators. If a bird is flying with the wind, it will overfly the landing point, circle, and land into the wind. We've learned a lot since man first took to the skies but some things don't change. Know what to look for and how to identify wind conditions - and fly according to those conditions.

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Selected Aircraft Mishap Briefs

Information based on Preliminary reports of aircraft mishaps reported in September 2014.

Utility helicopters

UH-60A 

-Crew experienced a #2 engine TGT spike (975 degree C) following start. (Class C)

-The 'A' axis drive cover separated at a hover during a MTF resulting in leakage and loss of oil pressure. Crew conducted emergency landing. (Class C)

Fixed Wing Aircraft

UC-35A 

-Aircraft experienced rapid decompression of the cabin during climb-out after the clam shell door released and partially opened. Crew conducted emergency landing and egress. (Class B)

Unmanned Aircraft Systems

RQ-7B 

-Crew experienced an engine failure as system was in return/land mode and crashed short of the airbase. UA and payload were recovered with damage. (Class B)

-Crew lost link with the UA while it was in the return to base flight phase. Crew was unable to regain link and the UA was lost. (Class B)

MQ-1C 

UA was returning to base due to degraded flight control assembly. While flying in autonomous mode, the aircraft made an uncommanded turn and impacted terrain. (Class A)

http://www.nasa.gov/larc/helicopter-drop-test-a-smashing-success/

"Be polite, be professional, but have a plan to kill everybody you meet."
~ Gen. James Mattis, USMC

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If you have comments, input, or contributions to Flightfax, feel free to contact the Aviation Directorate, U.S. Army Combat Readiness Center at com (334) 255-3530, DSN 558-3530

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