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Flightfax®

Online newsletter of Army aircraft mishap prevention information

This edition of *Flightfax* continues the five year safety reviews with a look at the UH-60. Awareness of the types of mishaps occurring in our aviation fleet is key in addressing risk assessments and countermeasures, regardless of aircraft type.

Also found in this issue: DES discusses maintenance officer mentoring, a mishap review of a ground taxi incident – appropriate considering the UH-60 safety review, and with winter upon us, a Blast From the Past article on flying in the snow.

Happy Holidays from USACRC and until next month, fly safe and manage your risk levels!

LTC Mike Higginbotham
Aviation Director, Future Operations
U.S. Army Combat Readiness Center
email: michael.d.higginbotham.mil@mail.mil

Black Hawk Safety Performance Review

In the five-year period FY10 – FY14 (2,120,000+ flight hours), the UH-60 series aircraft had 163 Class A - C mishaps recorded. There were 24 Class A, 22 Class B, and 117 Class C with a total cost of $137 million in damage and injuries. There were 33 fatalities. The Class A flight mishap rate per 100,000 hours was 1.04. Review of the Class A mishaps shows that human error was the primary cause factor in 22 (92%) of the incidents, materiel failure accounted for 1 (4%) with 1 (4%) environmental cause factor. Two of the mishaps were flight-related (blade strike on dismounted individual and loose debris striking a Soldier). Highlights from some of the more frequent types of mishaps:

Degraded Visual Environment (DVE)

Eight (36%) of the 22 Class A flight mishaps were related to DVE resulting in 18 fatalities. Examples include:

Scenario 1 *Tower strike*
While conducting a night vision goggle take-off from an out-of-ground effect hover, the aircraft experienced a low rotor condition while attempting to climb up and forward out of a dust cloud. Losing altitude, the accident aircraft moved forward and down through the dust cloud, struck a tower and crashed. Nine Soldiers were seriously injured and one Soldier was fatally injured. The aircraft was destroyed.

Scenario 2 *Spatial disorientation*
While flying in trail formation at 1,200 feet above ground level using night vision goggles, the crew failed to maintain orientation while in a right-hand orbit. The aircraft was placed in an unrecoverable attitude and impacted the ground inverted, fatally injuring all five crew members. The aircraft was destroyed. Flight conditions included zero illumination and low contrast terrain.

Scenario 3 *Spatial disorientation*
While flying as a medical evacuation chase aircraft responding to a 9-line MEDEVAC request under night vision goggles, the pilot on the flight controls failed to maintain or recover orientation. Shortly after takeoff, the pilot on the controls unknowingly initiated a gradual left turn that was allowed to progressively steepen until the aircraft was in an approximate 110 degrees left bank in a very steep, nose low descent at an altitude where a successful recovery was not possible. The aircraft impacted the ground and fatally injured all four crew members. The aircraft was destroyed. Flight conditions included zero illumination, low contrast terrain and restrictions to visibility.

Scenario 4 *Release point inbound*
While conducting a night vision goggle assault mission in a low contrast environment with zero illumination, the aircraft descended from an altitude of 270 feet AGL at a rate of greater than 1,000 FPM for approximately 10 seconds. The aircraft impacted the ground, causing total destruction of the aircraft, 4 fatalities, and 11 injuries. The crew did not adequately monitor the cockpit indicators to identify the aircraft descent.

Scenario 5 *Desert approach*
While performing a visual meteorological condition approach under night vision goggles to an unimproved desert landing zone, with zero percent illumination and no cultural lighting, the aircraft impacted the ground and rolled. The aircraft tail wheel struck the ground with such lateral force it sheared the right landing gear strut and drag brace from the aircraft. The aircraft was destroyed, one Soldier sustained fatal injuries, and four sustained minor injuries. The crew became fixated on the landing area and did not adequately monitor rate of descent, closure, and drift.

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Ground taxi mishaps

There were four ground taxi Class A mishaps and seven Class B mishaps. This represents 27 percent (worth highlighting – 27%) of the 41 Class A and B flight mishaps:

Scenario 1 *Ground taxi*

While ground taxiing to a refuel point during day VMC conditions, the main rotor blades made contact with a hangar door. The aircraft continued forward resulting in additional contact with a structural beam (located at the corner of the hangar) causing destruction of all four main rotor blades, severe damage to the aircraft, damage to two civilian hangars, and three general aviation aircraft. The crew divided their attention between checklist procedures and ground taxi (attention inside and outside the aircraft) not recognizing the developing dangerous situation.

Scenario 2 *Ground taxi*

Flight of two were ground taxing to parking when the lead aircraft contacted a light pole with the main rotor system. The fiberglass pole reportedly shattered/splintered causing flying debris which damaged the trail aircraft as well as other parked fixed-wing aircraft - one USAF 'trainer' and two small civilian jets. Additionally, debris resulted in civilian injuries and temporary closing of the FBO.

Scenario 3 *Ground taxi*

Aircraft was taxiing on the ramp when the main rotor system contacted a concrete T-wall. Damage reported to all four main rotor blades, leading edge of the tail rotor and the stabilator was punctured by debris. Collateral damage occurred to a parked Gray Eagle and GDT equipment.

Scenario 4 *Ground taxi*

While conducting night unaided ground taxi on a marked taxiway illuminated by perimeter stadium lighting, Chalk 1 in a flight of two, taxied into a stationary Chalk 2. The main rotor blades of the taxiing aircraft made contact with the blades of the stationary Chalk 2. The strike caused Chalk 2 to rotate approximately 45 degrees to the left forcing its the tail rotor blades to come in contact with the main rotor blades of Chalk 1. Both blade strikes resulted in extensive damage to all eight main rotor blades, four tail rotor blades of Chalk 2, two tail rotor blades of Chalk 1, and holes in the fuselage from flying debris. There were no injuries. The PC failed to announce his actions by not informing his crew or his wingman of his intentions to taxi the aircraft to the side (right rear) of Chalk 2 and failed to detect the close proximity to the stationary aircraft.

Power management

Power management contributed to five Class A and two Class B mishaps:

Scenario 1 *Power management*

Crew was executing an air-assault mission when they received readings of a high TGT and Nr droop just prior to touchdown. Aircraft descended to ground contact and landed hard. Aircraft sustained significant damage to the airframe and tail boom.

Scenario 2 *High altitude*

While conducting a day, visual meteorological condition approach to a helicopter landing zone at 14,200 feet MSL, as power was applied to stop the descent, the main rotor RPM drooped below normal operating limits and the aircraft descended onto rocky terrain. Two crew members sustained minor injuries and the damaged aircraft was later destroyed on site. The adverse environmental conditions created a condition where power available could not meet the power demanded.

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Scenario 3 *Power management*
While initiating a takeoff for a go-around under night vision goggles on a mountaintop landing area, the pilot on the controls applied excessive forward cyclic and collective entering the aircraft into a descent with a 19 degree nose low attitude. When additional collective power was applied, the rotor RPM decreased and the aircraft descended, impacting a rock formation nose first. This caused total destruction of the aircraft, 10 fatalities, and 2 injuries.

Blade strikes

There were five Class A and seven Class B object/blade strike incidents:

Scenario 1 *Terrain strike*
Aircraft was on an NVG approach to a dirt/gravel road adjacent to a man-made pinnacle in the training area when the main rotor blades contacted the upslope of the pinnacle at approximately 20' AGL. The crew maneuvered the aircraft forward and set down on the road for shut-down. Damage sustained to all 4 MRB, tail rotor blades, vertical stabilizer and tail pylon, and possible damage to the tail rotor drive shaft. No injuries.

Scenario 2 *Blade strike - personnel*
Crew was conducting a pinnacle, single-wheel landing for exfil of passengers when a local national interpreter's helmet came into contact with the main rotors causing severe injuries. Minor damage occurred to all four main rotor blades.

Scenario 3 *Dismounted personnel*
While conducting a NVG patient evacuation during a two-wheel, pinnacle landing at an HLZ during combat operations, a single main rotor blade contacted the flight medic's ACH as he re-entered the rotor disk area, resulting in fatal injuries. The rotor disk was extremely low at the 12 to 2 o'clock position. There was no positive two-way communication with the flight medic as he exited and re-entered the rotor disk area and the flight medic did not receive clearance from the pilots before entering the rotor disk.

Scenario 4 *Blade strike – Dismounting personnel*
As personnel were mounting the operating aircraft at an HLZ featuring rising terrain, the local national interpreter appeared to have become disoriented, rose to the upright position, and moved rearward into the moving rotor blades.

Scenario 5 *Shipboard operations*
During night fast-rope insertion training, the aircraft's main rotor system struck the ship's exhaust stacks and fell approximately 40 feet onto the ship's deck. One crewmember received fatal injuries, nine other personnel were injured, and the aircraft sustained extensive fire and structure damage.

Scenario 6 *Drive shaft strike*
Crew experienced abnormal vibration during short final approach. Emergency shutdown was executed and inspection revealed the #3 section of the drive shaft was missing as a result of main rotor blade contact.

Scenario 7 *Wire strike*
Aircraft contacted wires with the WSPS during low level NVG training on an approved training route. Minimal damage reported to the aircraft but strike resulted in local power outage and associated costs.

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Materiel failure

Scenario *Tail rotor*

While conducting a VMC approach on a NVG continuation training flight, at 80 feet AGL, the tail rotor pitch change shaft failed. This failure separated the linkage of the tail rotor pitch change shaft and the tail rotor servo, allowing the tail rotors to seek a neutral pitch and to be unresponsive to pilot flight control inputs. The aircraft entered an uncontrollable right yaw and impacted the ground with high G forces destroying the aircraft. Two crew members were seriously injured, and one crew member was fatally injured.

Miscellaneous

Scenario 1 *Flight related*

Soldier was fatally injured while videoing/photographing hoist-training. He was struck in the head by a tree branch that was apparently knocked loose by rotor wash from the departing aircraft.

Senario 2 *Aircraft ground*

While advancing the power control levers from the idle detents during run-up the system went into "lock-out" mode. Overspeed of 120% in excess of 12 seconds reported.

Summary

16 (67%) of the Class A events occurred under N/NVG conditions, 16 (67%) occurred in OEF/OIF. Class B incidents included an additional seven ground taxi mishaps, five blade strikes, two power management, two DVE, two hard landings, one wire strike, one Np over speed, and two flight-related incidents (personal injury during mini-gun operations and rotor wash disrupting a UAV landing. More detailed information, for accident prevention purposes, may be obtained by your safety officer through the Risk Management Information System (RMIS) on the safety.army.mil website. Registration is required.

	H-60 CLASS A – C Mishaps					
FY	Class A	Class B	Class C	Class A Flt Rate	Fatal	Cost
2010	8	3	17	1.76	20	64,423,165
2011	2	5	26	0.21	0	10,766,392
2012	6	8	40	1.19	6	25,354,616
2013	5	3	22	1.22	5	25,535,368
2014	3	3	12	0.82	2	10,834,734
Total	**24**	**22**	**117**	**1.04**	**33**	**136,914,275**

MEs as Mentors – Room for Improvement

CW4 Jonathon Brecheisen
CH47 ME
Directorate of Evaluation and Standardization
U.S. Army Aviation Center of Excellence
Fort Rucker, Ala.

As a CH47D/F Maintenance Test Pilot Evaluator (ME) for the Directorate of Evaluation and Standardization (DES), I have conducted many unit assessments both CONUS and OCONUS. While assessing units in theater, I noted a breakdown in the coaching, teaching, and mentoring relationship that should exist between our experienced maintenance officers that carry the ME designation and our first term, junior maintenance officers and MPs. The absence of this relationship, both stateside and abroad, has taken a toll on the growth and proficiency of both our junior and senior maintenance officers.

In the deployment setting under Task Force Organization it was apparent that many of the MEs were not travelling on a regular basis to check in on, and mentor maintenance officers. Many of which were first term maintenance test pilots (MTPs), operating as the lone maintenance officer at remote Forward Operating Bases (FOBs). This breakdown of supervision and mentorship created by the distance between the individuals or lack of interface while in the deployed setting has manifested itself in the observed degradation of maintenance officer knowledge and proficiency during subsequent DES unit assessments. More troublesome, the broken relationship between senior and junior maintenance professionals does not seem to repair itself as it should once the unit is redeployed and regrouped at home station.

Issue 1. While in the deployed setting, Maintenance Evaluators are not initially establishing the coaching, teaching, mentoring relationship with their junior maintenance officers via adequate Battle Field Circulation. Furthermore, the Maintenance Evaluators are not doing enough to bridge the gaps in this interaction once returned to home station. The relationship is required in order for MEs to effectively supervise, mentor, or evaluate proficiency of junior maintenance officers as they become maintenance leaders.

Maintenance Evaluators are often low density within Combat Aviation Brigades (CAB) and are normally appointed to critical positions in regards to the maintenance programs contained within. Some of these positions include: Production Control Officer, Quality Control Officer, Battalion Aviation Material Officer, and Brigade Aviation Maintenance Officer. These positions are critical to the multiple echelons of the maintenance program. Due to this fact, the officers normally assigned these positions cannot be absent from their duties for too long without significant degradation of the maintenance program. This often creates reluctance within the command to allow the ME qualified maintenance officer assigned to one of these positions to depart to visit the outlying FOBs where their junior maintenance officers are operating. Commanders should encourage and allow ME qualified senior maintenance officers to conduct Battle Field Circulation once per month to outlying FOBs where there are junior first-term maintenance officers operating by themselves to provide mentorship and check proficiency.

Lastly, the gap that is created while in the deployment setting between the junior and senior maintenance officers needs to be recognized and bridged upon returning to home station in order to ensure the coaching, teaching, mentoring relationship is established and strengthened.

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Issue 2: Junior maintenance officer knowledge and MTP proficiency is degraded from lack of interface with assigned MEs.

In the past several years, there has been a notable issue arising in some junior maintenance officer knowledge and MTP proficiency. These issues were discovered during multiple DES unit assessments of the maintenance officers and MTPs within the visited unit. Some issues were also discovered during DES conducted Maintenance Evaluator qualification evaluations. In all cases where there was a large discrepancy between the actual performance of the officer as MTP and the standards published, each of the officers had been assigned to an outlying FOB on their first deployment as a maintenance officer and MTP. When questioned about how often the ME of the unit had come out to perform mentorship or the occasional no-notice evaluation, the answer given was nearly never. The defects in performance of each of the aviators evaluated were quickly and easily corrected through academic and flight training. This indicates the fault does not lie in the performance or motivation of the officer themselves, but in the lack of supervision, evaluation, and training from the unit ME.

Units need to develop standing operating procedures (SOP) requirements that specifically address the training and periodic evaluation for junior maintenance officers and MTPs. MTPs should receive evaluations more often than once a year during their Annual Proficiency and Readiness Test (APART). Periodic no-notice evaluations required by SOP would allow MEs to better track and monitor junior maintenance officer and MTP proficiency, training needs, and growth. MTPs should receive at least one no-notice annually outside their normal APART MTP evaluation. Periodic academic instruction should also be written into SOP requirements for pilot classes specifically relating to maintenance knowledge and management. These types of classes would better prepare junior maintenance officers for assignments of increased responsibility within the unit's maintenance programs. These implementations would increase the interval that the ME and MTP interface and help improve the fledgling junior maintenance officer and MTP knowledge and proficiency that has been recently noted in past DES unit assessments.

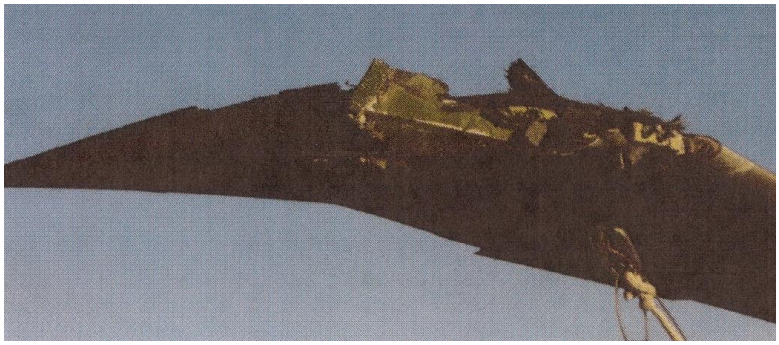
In summary, MEs need to interface with junior maintenance officers often to continue the growth and mentorship of these officers. This is especially important for officers deployed in theater that are on their first deployment and functioning as a maintenance officer. Without the expertise and guidance of the ME, the junior maintenance officer and MTP's knowledge and proficiency will begin to wilt. Commanders need to encourage and allow MEs within the unit to conduct battlefield circulation while in theater to ensure this prevalent issue is corrected before it becomes much worse. SOPs need to be updated to provide structure for scheduled academics and flight evaluations outside annual requirements so MEs may be keenly aware of knowledge and proficiency issues with their junior maintenance officers and MTPs.

FYI

Army Regulation 360-1 The Army Public Affairs Program.
Paragraph 10.5. Use of Army aircraft for non-media public affairs travel. Subparagraph c**.**
Army aviation assets are not used to transport persons costumed as Santa Claus, Easter bunnies, witches, or any other holiday-related character whether the person is military or civilian—on or off a military installation. Sorry Santa

Mishap Review: Night ground taxi

During night ground taxi for departure from a civilian airfield, the HH-60L's four main rotor blades contacted the winglet of a parked Gulfstream aircraft. Major damage occurred to both aircraft. There were no injuries.



History of flight

The mission was continuation training consisting of a day, IFR cross-country flight with a NVG VFR return flight home. Scheduled show time for the crew was 1400 hours local; however, several members arrived early to continue planning and conduct mission preparation as required. At approximately1500L all pre-mission planning, to include pre-flight, was completed by the crew. The mission brief was completed by the mission briefer with final mission approval by the company commander with an assessed mission risk of low. The weather forecast for the IFR destination was 2,500 scattered, 10,000 broken, visibility 7 miles, winds southeast at 10 kts. Return weather called for 2,000 scattered, 5,000 broken, 7 miles vis, winds southeast at 5 kts with a temperature of +21C. Moon illumination was greater than 50%.

The crew conducted a crew brief on the ramp at 1530L followed by engine run-up and departure at 1545L. The IFR leg was uneventful with the aircraft landing at the scheduled destination at 1745L. The aircraft taxied to parking at the FBO ramp, shut down and refueled.

Following refuel the crew updated their weather receiving an arrival forecast of a broken ceiling at 500 feet with 2 miles visibility. At approximately 1907L the crew initiated ground taxi for NVG flight home. Three minutes later the main rotor blades contacted the winglet of a parked Gulfstream G450. All four main rotor blades contacted the winglet and the winglet was completely sheared from its fixed position. The crew performed an immediate shutdown.

Crewmember experience

The PC, sitting in the left seat, had 600 hours total flight time, 115 in the HH-60, 120 NVG, 180 combat and 12 hours as a PC. The PI had nearly 540 hours total time with 64 in

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the HH-60, 100 NVG, and 150 combat hours. The FI, in the left crew seat, had 420 hours total time, 110 in the HH-60, 140 hours NVG and 115 combat. The CE, in the right crew seat, had nearly 200 hours total, 60 in the HH-60, 50 hours NVG and 90 hours of combat time.

Commentary

The accident investigation determined that the crew failed to clear the aircraft and communicate an obstacle that posed a threat to the aircraft. Additionally, the aircraft was not following an established taxi line but was on a non-movement area boundary marker.

The PC was the only crewmember operating aided. The lighting on the ramp allowed for both aided and unaided viewing. The PC directed the right side of the aircraft remain unaided since they were closest to the lights on nearby hangars and therefore would be most affected if aided.

It was also noted that the weather update the crew received was below weather approved for the NVG portion of the flight and no updated coordination had been completed with the mission briefing officer or final mission approval authority. In addition, the crew chief had exceeded his duty day crew endurance limits.

Accident findings: From the archives for your review

Finding 1 (Present and Contributing: Suspect Human Error – Individual and Support Failure): While conducting terrain flight operations at approximately 92 knots indicated airspeed and approximately 50 feet above a river in the local terrain flight area (TFA), the aircraft crew failed to detect hazards. That is, the crew failed to identify and avoid power transmission wires, in contravention of the Aircrew Training Manual (ATM) Tasks - Maintain Airspace Surveillance, Perform Terrain Flight Navigation and Perform Terrain Flight. As a result, the aircraft struck wires and crashed. The aircraft was destroyed and both crewmembers received fatal injuries.

Finding 2 (Present and Contributing: Suspect Human Error – Individual and Leader Failure): While preparing to conduct continuation training into the terrain flight area, the crew failed to complete adequate pre-mission planning, in contravention of the ATM and AR 95-1. That is, the crew did not obtain a weather briefing, file a flight plan, acquire a survival radio, or inform leaders of their crew endurance status.

Finding 3 (Present and Contributing: Human Error – Individual and Training Failure): While preparing to conduct continuation training into the terrain flight area, the briefing officer and approval authority failed to ensure the completion of adequate mission planning, in contravention of AR 95-1, FM 100-14, and the intent of the Vice Chief of Staff of the Army (VCSA) directive, dated 20 December 2004. That is, the briefing officer and approval authority did not ensure the crew obtained a weather brief, filed a flight plan, acquired a survival radio, and made adequate inquiries about the crew's endurance status.

Class A – C Mishap Tables

	Manned Aircraft Class A – C Mishap Table									as of 29 Dec 14
	Month	FY 14					FY 15			
		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities		Class A Mishaps	Class B Mishaps	Class C Mishaps	Fatalities
1st Qtr	October	0	0	2	0		0	1	3	0
	November	3	0	5	0		2	0	2	2
	December	1	0	3	0		1	2	1	
2nd Qtr	January	2	2	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	15	8	37	6	Year to Date	3	3	6	2
	Class A Flight Accident rate per 100,000 Flight Hours									
	5 Yr Avg: 1.31		3 Yr Avg: 1.25			FY 14: 1.42			Current FY: 1.93	

	UAS Class A – C Mishap Table								as of 18 Dec 14
	FY 14					FY 15			
	Class A Mishaps	Class B Mishaps	Class C Mishaps	Total		Class A Mishaps	Class B Mishaps	Class C Mishaps	Total
MQ-1	6		3	9	W/GE				
MQ-5	1	1		2	Hunter	1		`1	2
RQ-7		12	11	23	Shadow		1		1
RQ-11			1	1	Raven				
RQ-20			1	1	Puma				
YMQ-18									
SUAV					SUAV				
UAS	7	13	16	36	UAS	1	1	1	3
Aerostat	3	2	3	8	Aerostat	0	0	0	0
Total for Year	10	15	19	44	Year to Date	1	1	1	3

Flying in the snow

January 2004 *Flightfax*

It's time to talk about snow. In some parts of the world, it's been here for months. In others, it's just getting ready to fall. Whichever is the case for you, it's never too late to get up to speed on winter flying.

Units that haven't reviewed training in cold weather flying should do so immediately. Once an aircrew is involved in a whiteout during an approach or experiences spatial disorientation over a snowy field, it's too late to talk about training.

Inexperience and lack of recent training are frequent contributors to snow-related accidents. If you are new to an area of frequent snows, get into Field Manual (FM) 1-202, *Environmental Flight*, as well as all the local standing operating procedures (SOPs). Also ask questions—lots of questions—of local safety folks and instructors.

Even if you have lots of winter flying experience, a few months time in temperate weather can erode winter flying proficiency. Remember, overconfidence can lead to an accident just as surely as inexperience. Consider the following accidents.

Blowing snow

The instructor pilot (IP) was fairly confident in his abilities. He had more than 2,200 hours of helicopter flying time, with more than 1,200 hours in the OH-58.

The crew was conducting a night vision goggle (NVG) blowing snow checkout. The pilot (PI) had completed three hover down approaches and five constant angle approaches into the training area. The crew departed that training area in order to continue training in a more restrictive landing zone (LZ). The PI successfully executed three approaches into the LZ and was attempting his fourth approach as a constant angle approach. As the aircraft proceeded inbound at an altitude of 8 to 10 feet, the IP announced that a snow cloud was at the rocket pods. The PI acknowledged this and proceeded forward and down. The snow cloud engulfed the aircraft as it approached the terrain. The PI lost his visual references, and the aircraft began to drift to the right. The IP announced they were drifting to the right, but the PI did not acknowledge the drift.

The aircraft continued to advance forward and drift right until the main rotor blades made initial contact with several small trees. The drift continued until the main rotor blades struck and severed an 11-inch diameter pine tree, upon which the fuselage began a rotation to the right. The rotational momentum continued as the main rotor blades disintegrated and the severed pine tree fell toward the aircraft. The aircraft came to rest among the trees in a level, upright position. The two crewmembers received minor injuries.

Lessons learned: No matter how many of these approaches you do, anticipate and prepare to go around at any time during the approach. IPs, be prepared to take the controls regardless of who you are flying with.

Snow-covered landing areas

It was winter, and two flights of five UH-60s were on a troop-insertion mission to unimproved landing areas. In one flight, the unit operations officer was piloting Chalk 3. Because of his unit duties, he had flown only 17 hours in the preceding 4 months. Moreover, he had not been able to attend mandatory unit training in which snow landing techniques and procedures were reviewed, nor did he attend make-up classes or engage in hands-on snow landing operations training.

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The flights were proceeding normally with 7 miles visibility and 1,000-foot ceilings in scattered snow showers. Then the two flights separated and began a series of false insertions.

Chalk 3's flight encountered a snow shower as they began a formation approach. Visibility was reduced to about a mile. The LZ was a large, open, snow-covered field with an apparent upslope in the direction of the landing. The crew of Chalk 3 could see a large amount of snow circulating through the rotor systems of the two aircraft ahead of them.

The pilot of Chalk 3 selected a touchdown point downslope and to the left rear of the lead aircraft. Using the upslope aircraft and distant tree lines as visual references, the pilot made his approach. A snow cloud enveloped the aircraft as effective translational lift was lost about 20 feet above the ground, with a left quartering tailwind of 15 to 25 knots.

The pilot decided to continue the approach without outside references and reduced power to put the aircraft on the anticipated upsloping terrain. In a complete whiteout condition, the UH-60 touched down hard on a combination upslope to the front and downslope to the left. The helicopter rolled over and came to rest on its left side. Fortunately there were no fatalities in this accident.

Several factors contributed to the difficulty of landing at this site:

+ The flight was landing downwind to an upslope.
+ The aircraft were landing during a snow shower to an LZ with very loose, dry snow.
+ There were only limited stationary visual clues.

The worst thing that happened was the pilot continued the approach when he lost visual contact with his ground references. He had to monitor two slopes and his position simultaneously. This would be a difficult task even if the pilot had a wealth of recent snow experience, which was not the case. Moreover, the rate of descent was excessive, even if the approach had been to level terrain. FM 1-202 states that an approach to the ground should not be made in dry, powdered snow unless the touchdown area is known to be level and free of obstructions. In this case, the pilot was aware of both the slope and the looseness of the snow. However, he was not aware of his downwind condition.

Lessons learned: Approach and go-around planning are essential for any formation flight; however, they are crucial in snow environments. Planning should include:

+ Instructions to execute a go-around if visual contact with ground references is lost or if it becomes apparent that visual contact will be lost.
+ Timing and spacing aircraft into LZs to reduce the effects of blowing snow.
+ Specific go-around instructions in pre-mission briefs (what direction to turn, where to land on subsequent approaches, and takeoff procedures).

Other snow hazards

One of the most dangerous snow environments just might be the main airfield. The large, open areas found at most airfields do not provide the contrast and definition needed to maintain orientation, especially when snow starts circulating through rotor blades.

Moving around the typical airfield is a little easier when you can "air taxi." When you are cleared by ground control, remember to keep a good scan going to keep from inadvertently descending.

Summary

Many aviators have their own ideas about how to mitigate risks associated with blowing snow. As part of the winter academic program, it might be useful to survey aircrews to determine which

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Blast From The Past continued from previous page

hazards they consider the most severe and evaluate the effectiveness of the controls that are in place. From such a survey, necessary upgrades to winter training plans and development of new controls can be put in place. Winter has been a regular on the calendar for a long, long time. There's nothing we can do about that, even if we wanted to. In fact, the very predictability of changing seasons gives us time to plan our training for the different kinds of flying problems each season brings. If you haven't already done it, get your refresher training, review FM 1-202, and be alert to the hazards associated with winter flying.

—Bob Brooks, Operations Division

Selected Aircraft Mishap Briefs

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

Attack helicopters

AH-64D

-During the conduct of night emergency procedures training the aircraft crashed. Two fatalities. (Class A)

Utility helicopters

UH-60A

-While positioning for a NVG take-off the aircraft contacted a barrier wall and crashed. (Class A)

Fixed-wing aircraft

DH-7

-Crew experienced a bird strike during night AQC training. Aircraft was landed without further incident. (Class C)

Unmanned Aircraft Systems

MQ-5B

-System departed the runway during a roll-out landing and sustained damage to the nose and main landing gears. (Class C)

RQ-7B

-Crew reported loss of computer link with the system as it was in RTB flight mode. (Class B)

I had amnesia once…maybe twice.

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

U.S. ARMY COMBAT READINESS CENTER

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