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ARMY AVIATION
RISK-MANAGEMENT
INFORMATION

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Improving Aviation Safety Performance

As an Army, we are involved in missions around the world and doing a lot of things without the experience base we once enjoyed. This lack of experience, continuous deployments, and not having the discipline to maintain and enforce standards

are basic causes of accidental losses. Some of us wearing wings are not executing fundamental tasks, those taught to us in flight school, to standard. Analysis of major FY99 aviation accidents reveals that most of the accidents didn't happen at the time of impact or

during the crash sequence; they really occurred much earlier with a breakdown in leadership, standards, or discipline.

In fact, FY99 produced Army aviation's worst safety performance since Desert Shield/Desert Storm. With 18 Class A aviation flight accidents

and 20 fatalities, the upward trend in accidents that began in FY98 continued to climb. When leaders fail to enforce established standards, the natural result is accidents—and accidents cost. They cost lives, they cost time, and they cost equipment: a total cost of more than \$139 million for aviation in FY99.

The bottom line: soldiers are dying and we are destroying costly equipment at a rate that is unacceptable. Leaders who understand and accept responsibility will help solve this Armywide problem. Effective leaders will make sure soldiers know what the standards are and will ensure the standards are enforced.

LEADERSHIP

Leadership is a challenging art. It encompasses the awesome responsibility of ensuring the combat readiness of your unit and the safety of your soldiers. We always talk about Command and Control, but what does it really mean? Safe operations are a function of effective command and control. Depending on the level at which we are located, all of us are either commanding or controlling, or both. It's imperative that leaders get out there with their units and help them understand where they are at risk.

■ **Commanders.** The quality of today's soldier is superior, and their motivation to excel is second to none. You give a mission; soldiers will accomplish it. Unfortunately, how they do it, is too often left up to them. You are the commander. Make sure that your controllers—platoon leaders, NCOs, squad leaders, instructor pilots, crew chiefs—understand what you want them to control and the standards to which you

want your unit or the mission controlled. Make sure the policies that are being executed are your policies and that they are being executed to the exact standard you set.

If you really want to make a difference in your unit's safety performance, the fastest, surest way is to go to training meetings. It's understood that your time is limited, but training is the essence of what you do. So what could be more important than training? The answer is, risk management integrated training. When the brigade commander starts attending training meetings, it's incredible how quickly the battalion commander does so as well. You can train . . . train hard . . . and still do it safely if you get involved in early planning, identification of hazards, and development of controls.

■ **Controllers.** The safest place in the Army for anyone to drive or fly is at a combat training center. CTC rotations involve the hardest, most demanding training, but there is high awareness and close supervision. Observer-controllers will stop an unsafe maneuver or action before soldiers can do something to hurt themselves or damage equipment. Unfortunately, this level of supervision is not being carried out in all units during the day-to-day missions. The question we must ask ourselves is, Why not?

Whether you're a commissioned officer, warrant officer, or noncommissioned officer, you must understand what the commander wants you to control and the standard he or she has set. The individual who prevents the accident is the one who is with the soldiers every day, every night, in garrison, in the field, on the flightline, in the cockpit. It is your responsibility to

ensure that soldiers execute every task to the established standard.

If you are the unit's safety officer, you must have direct access to the commander. Get in to see the boss and understand his intent. If you are not into his or her thought processes, you are not part of the solution. Do not allow yourself to say, "We can't do this mission; it's too dangerous." Your job is to step up to that commander and say, "Sir, we can do this mission, but we can do it more safely by applying these controls."

Senior officers, warrant officers, and NCOs, get out on the flightline and mentor the young aviators and crew chiefs. Show them what right looks like. Lead from the front.

STANDARDS

Despite the inherent challenges of goggles, nap-of-the-earth flight, high gross weight, systems flight, and flying in difficult environments, we excel . . . especially in the missions we classify as high risk. However, many of the so called "routine" or "low-risk" missions end up being the subject of an accident report. What we sometimes fail to realize is that every low-risk mission has a high-risk portion. Most of the FY 99 18 Class A aviation accidents were during routine, low-risk missions. We must constantly strive to identify what part of our low-risk mission is high risk.

The sense of a higher risk tends to sharpen our awareness of the dangers, and we rise to meet the challenges—safely. "Routine" seems to imply that pilots don't need to emphasize basic flight techniques or that our scanning techniques don't need to be as rapid or as thorough. Nobody gets so proficient that they can forget

the basics of performance planning, power management, aerodynamics, and crew coordination.

As leaders, professional aviators, NCOs, and soldiers, we must each take personal responsibility. We must get back to the basics: executing missions to established standards. The following are recommendations that leaders and aviators should incorporate into every METL task and every battle task. These must become the standards.

■ **Do Performance Planning.** A PPC is your first line of defense against power management errors. You should habitually complete a full PPC for every mission, even the "routine" ones. As the mission or profile changes, update the PPC.

■ **Train heavy.** Plan simulator periods with little power margin. Make the simulator period a practice in battle tasks. Fly high, hot, and heavy. You can't know what right looks like or feels like without experience. The simulator is a great place to see what right looks and feels like. Here is where a mistake is forgiving. Simulator periods should be challenging, difficult, and educational. Millions of dollars have been invested in them; use them to their fullest capacity.

■ **Use the wind.** Always contemplate having a low power margin. Maximize available power. Properly utilize the wind to increase power availability. This is a basic flight technique; however, it is routinely abused and the result is accidents.

■ **Be prepared to jettison.** More than likely, you have never used the jettison switch, even in training. Accidents usually happen close to the ground, and

there is little time to react. Stay actively prepared to jettison stores during landings and takeoffs. However, preparation begins on the ground. Ensure that the electrical current is good, and your squibs are within requirements.

■ **Understand emergency procedures.** Memorizing an emergency procedure does not mean the same as understanding an emergency procedure. You must understand what each input you make does to the aircraft, and you must know what the aircraft will do after every input you make.

■ **Use crew coordination.** The need for crew coordination cannot be overstated. Don't hesitate to share information and to speak up when something doesn't feel or look right to you. If you just sit there and let something happen, you become part of the problem. Your life may depend on your willingness to make the tough call when a fellow pilot is exceeding aircraft or his or her individual capabilities. Some units have great crew coordination sustainment training. If yours doesn't, get a program started.

■ **Practice effective risk management.** Managing risks isn't complicated; it's simply identifying and assessing hazards and developing and implementing controls to mitigate risks to the lowest level possible. We are doing a good job of identifying hazards and assessing risks. However, this is where we often stop the process. Many times, we do not implement controls, supervise, or reevaluate to ensure that the controls implemented have mitigated the risk.

No mission is so simple or routine that it eliminates the requirement to execute to standard. You owe it to your passengers, crew, and family to

maintain high professional standards.

DISCIPLINE

Good training produces tough, disciplined, and highly motivated soldiers, and it bonds units through shared experiences and mutual challenges. Safe performance is a predictable result of performing to standard, and performing to standard is a result of training to standard. Training to standard leads directly to discipline—both collectively and individually. Disciplined soldiers and operations are inherently safer.

Discipline is a 24-hour-per-day, 7-days-per-week, on-and-off-duty concept. There can be no lapses. A disciplined, professional aviator will not willfully put lives at risk.

Effective training is the key not only to sustaining a combat-ready Army but also to reducing human-error accidents. Training to standard produces skilled, disciplined soldiers. And skilled, disciplined soldiers are professional soldiers who accept responsibility for the safety of themselves, the safety of others, and the protection of Army equipment.

Leadership involvement at all levels—combined with effective risk management, discipline, and strict adherence to standards—are the primary tools that can save lives and prevent this tide of overwhelming accidents from continuing to erode valuable combat power. It is an unequivocal fact that a disciplined force trained to standard equals a combat-ready force that executes the mission safely. It's up to each of us to "step up to the plate" and accept responsibility for improving our aviation safety performance.

— **BG Gene M. LaCoste, Director of Army Safety**

Rollcall: Recent U.S. Army Aviation Centralized Accident Investigations

Aviation safety suffered a setback in FY99. Accident rates, total losses, and fatalities all were on the increase. By year's end the Army had suffered 103 class A-C flight accidents, including 10 destroyed aircraft and 20 killed soldiers. This yielded an accident rate of 11.28 accidents per 100,000 flight hours. Statistically, this was the worst year for U.S. Army aviation accidents since 1991 (since 1982 excluding Operation Desert Storm). In this article we summarize recent centralized accident investigations conducted by the U.S. Army Safety Center and emphasize problem areas that must be addressed if we are to reverse this upward trend.

Recent centralized accident investigations have concluded that leadership, crew coordination, and power management practices are recurring problems and primary areas for improved safety emphasis to prevent accidents. We must address these problem areas if we are to reverse the recent increase in Army aviation accident rates.

LEADERSHIP

The risk-management process must become habitual to all leaders. We must understand how to identify the hazards that face our aviators in the unforgiving environments in which they operate. It is only through thorough understanding and complete application of the risk-management process, and disciplined enforcement of standards that accurate and timely controls can be identified and implemented to mitigate unacceptable risks.

POWER MANAGEMENT

The process of confirming power requirements with power available must also be habitual. Harsh environments demand a disciplined focus and continuous application of the fundamentals learned throughout careers. Aviators must remain aware of

their changing flying environments and manage their aircraft power diligently.

CREW COORDINATION

Crew coordination is also a must in today's complex aircraft. All too often accident investigations find both crewmembers were focused inside the aircraft, conducting specific mission tasks. Crewmembers must know and understand each other's capabilities and limitations. They must be willing to make the tough call when a fellow pilot is exceeding his/her individual capabilities and getting them into a situation from which they may not be able to recover. Effective crew coordination demands constant communication, discipline, and adherence to standards.

Rollcall '99:

AH-64

■ During day hover fire gunnery operations at 220 feet AGL, the pilot-in-command (PIC) and/or the pilot fired approximately 860 rounds of 30mm target-practice (TP) M788 rounds from the

M230E1, 30MM Automatic Gun. The gun ruptured and shrapnel from the externally mounted gun and fragments from several TP rounds penetrated the bottom of the aircraft, compromising components of both the mechanical and backup control systems. Aircraft control was lost, the aircraft spun right, and it descended to ground impact. The AH-64D aircraft received extensive damage, fortunately the crew was not injured.

■ The AH-64A accident occurred during day, VFR, aircraft qualification training. The aircraft began an uncommanded right turn while at a stationary, 400-foot, out-of-ground-effect hover. Left pedal



application did not arrest the right turn, and the aircraft spun several times. The aircraft descended vertically through 50- to 60-foot-tall trees to ground impact. The aircraft was destroyed, and both occupants received minor injuries.

■ The training accident occurred during a night terrain flight at 100 knots and 70 feet AGL, with the crew using a target acquisition designation system/pilot night vision system. The AH-64A aircraft struck and descended through 70-foot-tall pine trees to ground impact. The aircraft was destroyed, and both crewmembers received major injuries.

■ The AH-64A night training accident initiated as the pilot-in-command (PC), in the rear seat, using pilot night vision system, attempted to establish and maintain a 170-foot out-of-ground-effect hover for an overwatch position. The aircraft descended near vertically to impact after the PC initiated a deceleration. The aircraft was destroyed, and the PC and the pilot received minor injuries.

■ The accident occurred while the AH-64A crew was conducting night training, with one Hellfire missile launcher, two rocket launchers, and a full external fuel cell mounted. The aircraft was observed to pitch up, roll right, and descend about 150 feet to ground impact from cruise flight about 45 KIAS. The aircraft was destroyed in the explosive impact and secondary explosions. Both crewmembers received fatal injuries.

■ The night AH-64D accident initiated as the pilot on the flight controls decelerated below effective translational lift airspeed in an attempt to validate power requirements to establish a 200-

foot out-of-ground-effect hover. As the airspeed decreased, the rotor RPM began to decay with accompanying low rotor RPM warnings. The aircraft descended and about 25 feet and 30 knots, the nose abruptly turned right. The aircraft touched down in a right yaw, rolled left, and the main rotor blades struck the ground. The aircraft came to rest nearly inverted and the crew egressed unassisted.

■ Returning from a night weapons firing at 0340 hours, the PC on the controls in the back seat, attempted to land the AH-64D on the parking pad. Both pilots on the night systems had their attention diverted to a pole in their forward field of view and commented it seemed close. The PC hovered the aircraft to the rear while still focussing on the pole and allowed the tail rotor to make contact with the aircraft parked behind them. Both aircraft were substantially damaged and both crewmembers egressed uninjured. The PC at the time of the accident had been awake for approximately 20 hours and on duty for 10 hours and 40 minutes.

CH-47

■ While the CH-47D was on base leg for landing in formation as chalk 4, the rotor RPM increased to approximately 105 percent with an associated split in engine torque (No. 1 high). The pilot-in-command reduced the No. 1 engine ECL and attempted to gain control of rotor RPM with the Nos. 1 and 2 engine beep trim. The formation approach continued, and on short final, the rotor RPM decreased. The aircraft settled with power, and the approach terminated with a forced landing short of the intended landing area. The aircraft was extensively damaged, and three of

the occupants received minor injuries.

MH-6

■ The MH-6J (MELB) accident occurred during qualitative testing to determine 5-percent engine droop with bleed valve inoperative at high-altitude operations. The experimental test pilot (XP) initiated a terrain approach from 250 feet AGL and 80 knots airspeed. During the maneuver, the XP entered a 180 degree descending turn to obtain appropriate G-loading and droop the engine. The engine did not accelerate fast enough to enable the XP to arrest the descent and terminate at a hover as planned. The aircraft landed hard on the runway and was extensively damaged but the XP received only minor injuries.

■ The MH-6J accident occurred after touchdown to a steep right downslope during a night multi-aircraft troop insertion with the crew using Omni-4 night vision goggles. As the four CETs on the external personnel system pods began offloading from chalk 2 to join the live-fire exercise, the aircraft rolled right, wobbled, and then yawed left. The main rotor blades struck and fatally injured one of the CETs as he attempted to maneuver from beneath the rotating main rotor blades. Aircraft damage was limited to the main rotor blades.

OH-58

■ During a day, deliberate, zone reconnaissance training mission, about 37 feet AGL, the OH-58D(I) aircraft drifted, and the tail rotor blades struck a tree. The tail rotor gearbox separated from the aircraft, and the aircraft rotated about 360 degrees to the right and descended to ground



impact. The aircraft was destroyed, and both pilots received major injuries.

■ While the instructor pilot was attempting a terrain flight takeoff from the ground, aircraft control was lost. The OH-58D(I) aircraft tail and main rotor blades struck the ground, and the aircraft came to rest on its left side. The two crewmembers were not injured and exited the aircraft unassisted. The aircraft sustained extensive damage.

■ During a day contact training flight for a pilot trainee at approximately 300 feet AGL and approximately 60 knots during takeoff, the OH-58C experienced an N1 oscillation with an observed N1 rise to 108 percent. The N1 continued to oscillate, and the aircraft descended to ground impact with decreasing rotor RPM. The aircraft received extensive damage, and the pilot trainee received minor injury. The contract flight instructor was not injured.

■ During a night vision goggle reconnaissance and surveillance mission, between 60-70 knots and approximately 400 feet above the highest obstacle, the OH-58D(R) generated an erroneous ENGINE OUT warning. The crew executed an autorotation resulting in a hard

landing. The aircraft was destroyed, and both pilots sustained minor injuries.

■ The OH-58D(R) accident occurred during FADEC manual throttle operations in day VMC conditions. During a simulated emergency procedure, sufficient control inputs were not made to arrest the rate of descent and prevent inadvertent ground contact. As a result the aircraft struck the ground with a rate of descent in excess of 500 feet per minute and sustained major damage to the aircraft.

UH-1

■ During 90-knot cruise flight about 1,820 feet AGL, the UH-1V's vertical fin separated from the tail boom causing the nose to abruptly pitch down 30 to 40 degrees and the aircraft yawed right. Even with both the pilot-in-command (PC) and the pilot (PI), on the controls, only minimal control could be maintained. The aircraft descended in a right turn to ground impact in a left-side-low, nose-low attitude. The aircraft was destroyed and the PC, the PI, and the medical attendant received serious injuries. The firefighter received minor injuries.

■ The UH-1V accident occurred during the conduct of Task 1053, TC 1-211, Perform simulated engine failure at altitude, as part of the APART for the pilot. The maneuver was to terminate at a 3- to 5-foot AGL hover (terminate with power). The aircraft impacted the terrain 65 feet short of the runway in a nose-high, tail-low attitude and rebounded, coming to rest on the runway about 200 feet from the initial impact point. The aircraft

was destroyed, and the instructor pilot received minor injuries.

UH-60

■ The mission was a VFR, day, single-ship operation in support of hurricane disaster relief. The UH-60A landed hard on upsloping terrain approximately 52 feet downslope of the intended pinnacle landing zone (LZ). The aircraft received minor damage. The crewmembers and passengers were not injured.

■ The UH-60A accident occurred during an attempted crosswind takeoff from a runway at 4,952 feet MSL. The rotor RPM began to decay at about 20 feet AGL on takeoff, and the aircraft descended to ground impact between the runway and the parallel access road. The aircraft received major damage, but the crewmembers and the passengers were not injured.

■ The accident occurred during an attempted, day, visual meteorological conditions approach and landing to a dusty field site. The UH-60A aircraft drifted right in the brownout condition, and the right main landing gear and the tail wheel contacted the ground. The aircraft rolled right, and the main rotor blades struck the ground. The aircraft received major damage, and the pilot-in-command and the pilot were fatally injured. The crew chief and the two passengers received minor injuries.

■ During a day, contour, pathfinder extraction mission, at approximately 80 knots and less than 50 feet above the highest obstacle, the UH-60L descended and crashed through 75-foot-tall trees to ground impact. The aircraft was destroyed. The pilot-in-command, both crewchiefs, and four CETs were fatally injured.



The pilot and three CETs received major injuries.

■ The UH-60A accident sequence initiated from a downwind, 500-foot, out-of-ground-effect (OGE) hover. From the OGE hover, the pilot-in-command, on the flight controls, initiated a vertical descent. The rate of descent continued to increase and the aircraft entered a settling-with-power condition, a vortex ring state. The descent continued to ground impact. The aircraft was extensively damaged, but the crew and passengers were not injured.

■ While flying at 100 knots and approximately 300 feet AGL above rising terrain as the trail aircraft in a flight of two, the UH-60A aircraft entered a 50- to 60-degree right bank. The aircraft descended rapidly into 50-foot-tall trees, terminating in a hard landing on a nearby roadway. The aircraft received major damage, but the crew and passengers were not injured.

■ The MH-60K accident occurred after the pilot (PI) began a slow, vertical descent of 10 feet to about 70 feet AGL. The descent was as requested by the right side crewchief (CE) during a fast rope exercise. About 4 seconds after the PI stopped the descent, the LOW ROTOR warning tone sounded. The PI reset the announcement as the pilot-in-command (PC) monitored the instruments. Eight seconds later, as an individual began his fast rope descent, the aircraft began an uncommanded descent. The PI requested the engine control levers be placed to ENGINE LOCKOUT, and then he increased power demand in an attempt to keep the aircraft from descending onto the individual on the fast rope. As rotor RPM continued to decline, tail rotor effectiveness was lost and the aircraft began to turn to the right. The aircraft spun about 1½ turns as it descended through the trees to ground impact. The aircraft

was extensively damaged, and the individual on the fast rope was fatally injured. The PC, PI, and the left side CE received minor injuries.

TH-67

■ The instructor pilot (IP) was conducting primary flight training for initial entry rotary-wing training. The TH-67 aircraft was at a stationary in-ground-effect hover in preparation for takeoff. The nose of the aircraft pitched up, the aircraft rolled to the left, and the main rotor blades struck the ground. The aircraft came to rest on its right side with the engine running. After shutdown, both crewmembers exited unassisted. Crash rescue extinguished a postcrash fire. The aircraft received major damage, and the IP received minor injuries.

FIXED WING

■ The RC-12K accident sequence began as the crew conducted ATM "upper airwork" training. The aircraft departed controlled flight at approximately 6,800 feet AGL and descended out of control to ground impact. The aircraft was destroyed, and both crewmembers were fatally injured in the explosive, high-G impact.

■ The O-5A aircraft, at cruise airspeed, impacted the side of a 8,300-foot mountain at an altitude of approximately 7,800 feet. The aircraft was destroyed, and the seven occupants were fatally injured in the explosive high-G impact.



Getting Back to the Basics

Failure to execute "the basics" is costing the Army precious resources that we can ill afford to lose.

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

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

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

Active leadership is the key to halting this alarming trend. When soldiers violate a procedure or standard, leaders must take immediate action to correct the situation. In effect, failure to correct the

violation sets a new, lower standard. It legitimizes the shortcut. Leaders at every level must establish procedures, and set and enforce standards that focus on doing things, including the routine things, the right way every time. This is something that we owe our soldiers. Tasks, conditions, and standards; standard operating procedures; and regulations have been developed over time for a reason: to ensure safe, efficient operations. Enforcing them is one of the best ways we can take care of our soldiers. Taking or allowing shortcuts does not help our soldiers nor does it help us maintain an Army that is combat ready.

**We are
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basics.**

Setting the standard is a function of command; however, the primary responsibility for ensuring execution to standard lies with first-line leaders.

The squad leader, instructor pilot, team chief, and even the "battle buddy" must understand fully what the standards are and understand that shortcuts are not the answer. Our junior NCOs and officers must be the commander's controllers. Tell them what you want and the standards to which you expect your soldiers to perform. Give them the authority to enforce those standards and halt unsafe activities. Then hold them accountable. They must set the example and be the commander's representative in garrison, in training, and during deployments.

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

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THE ARMY'S BLUE-LIGHT SPECIAL

Here's some shopping help for maintenance and supply folks, just in time for the holidays. The Army has a reduced price initiative (RPI), sort of a blue-light special offering selected items at half-price.

If you're looking to stretch your maintenance dollar, the RPI may be for you. Established in 1995 as a way to increase the spending power of Army field maintenance customers, the list of items topped out at over 1200 in FY 99. The list continues to grow with the addition of force modernization and Army-managed field level reparable in FY00.

To learn about what's on special in RPI, as well as current RPI policies, log on to their web site at:
www.hqda.Army.mil/logweb/directorates/sm/smhp/htm

Go to Hot Actions for the latest in RPI information.

Adapted from PS Magazine

AVIATION LINKS ON THE WEB

- Comanche PM (POCs)
http://www.comanche.redstone.army.mil/pm_folks.html
- OH-58DKW Maintainers Homepage
<http://members.tripod.com/~bob58dkw/bob58dkw.html>
- U.S. Army TACOM - RI Aircraft Armament Points of Contact
- Scout/Attack Product Office (Kiowa Warrior POCs)
<http://www.redstone.army.mil/kiowa/names1.html>
- Military Links:
 - BosniaLINK
<http://www.dtic.mil/bosnia/army/>
 - Comanche PM Office
http://www.comanche.redstone.army.mil/logo_rah.html
 - DefenseLINK
<http://www.defenselink.mil/>
 - Ft. Rucker, Home of Army Aviation <http://www-rucker.army.mil/>
 - Ft. Stewart
<http://www.stewart.army.mil/>
 - OH-58D Information Center
<http://www.redstone.army.mil/kiowa/>

GROUND SUPPORT CONFERENCE

Aviation Maintenance Support User's Conference

When: 14-15 Dec 1999

Where: Building 5206 Fort Rucker AL

Who: NCOs and Maintenance Officers

What: Significant issues in Aviation GSE

Why: Learn about Developments in Provide user input for Bring back information about

EMERGING GSE TECHNOLOGY

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ATTENTION Black Hawk crews:

The UH-60 with its dual engines brought a safety margin to utility helicopter operations that wasn't possible with single-engine aircraft.

However, as mission demands expand and new equipment is added, Black Hawks frequently operate at higher gross weights than in the past.

UH-60 crews should be aware that operating in the height-velocity-avoid regions can be hazardous if one engine becomes inoperative. The avoid regions vary, based on gross weight and atmospheric conditions.

Pilots should review the information in the operator's manual on the height-velocity-avoid regions for single engine failure. Avoid flying in these danger zones as much as possible.

*Reprinted from the Black Hawk newsletter
Michael Lupo, AMSAM-DSA-UH-T*

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Thank you, Sally-August
H-60 Daily checks-August

Situational awareness

The devil's in the details-March
Tree strikes, you're out-June

System safety

How system safety happens-
March

Tool loss control

Please, God, don't let them find
my pliers-July

Training

The key to egress success-
February

Train as you'll fight-March
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Tree Strikes

Tree strikes, you're out-June

Utility helicopters

H-60 HIT check-August

Videos

Crash/Rescue-February, June
Power Management-September

War stories

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The A.T. flyaway blues-April
They know better-May
UH-60L hard landing-June
Welcome to hell-July
Recipe for disaster-August

Weather

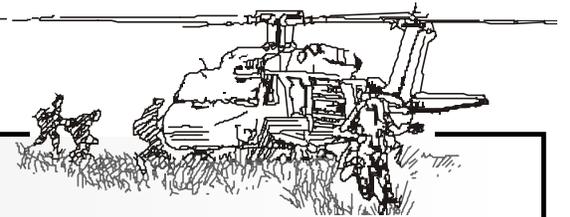
Weather minimums and forecasts-
January
About the weather-August
Recipe for disaster-August
Thunderstorms: a primer-August

Web sites

Bird strike sites-April
RMIS update-August

Y2K

Accident database system-
February
Aviation vibration analyzer-
November



Deployed numbers

More than 120,000 service members are deployed worldwide supporting exercises, theater engagements, forward presence commitments and 20 ongoing operations, according to Defense Department figures. Another 200,000 are permanently stationed in Europe and the Asia-Pacific region.

Accident briefs

Information based on preliminary reports of aircraft accidents

AH1



Class C

F series

While hovering to the take-off pad, the M97 gun fell to fully depressed position and hit the pavement. The gun barrels immediately dug into the asphalt, halting the forward progress of the aircraft. When the aircraft landed, it had a nose high attitude of approximately 20 degrees.

OH6



Class B

Series F

A 3 hour flight included approximately 7 gun runs performed by each pilot, spread over two ammunition loads. Post-flight inspection of the Instrument System revealed an overtorque of 88.3 PSI. 80

psi is maximum and anything over 84 requires component change. Neither pilot observed 88.3 on the digital display during flight.

AH64



Class B

A Series

Aircraft was in cruise flight at 600' AGL when it was struck by a bird on the right front corner of the front seat windscreen. The bird broke the screen and rebounded into the rotor, damaging the trailing edge of two blades. The mission was terminated with a precautionary landing to a field site.

Class C

A series

Crew experienced stabilator and generator warning indications during takeoff. Crew reported smelling smoke during landing. As crew exited

the aircraft, following shutdown, they noted flames emanating from the generator/transmission area. Fire was extinguished by ground crew.

Class C

A series

A main rotor blade was damaged during aircraft runup when a blade weight that reportedly had been left on the fuselage was blown into the main rotor system.

MH47



Class C

Series E

While in formation flight at 130 KIAS, 400 ft AGL, with a 25 knot left crosswind and light to moderated turbulence while utilizing Night Vision Goggles (NVG), the pilot (PI), in the right seat and on the controls, felt a large blast of wind and an

increase in cockpit noise. After assessing the situation, the PI determined his jettisonable cockpit door had departed the aircraft. The crew conducted an airborne search for the door for one half-hour and then landed the helicopter to inspect for additional aircraft damage. While there was no further damage, the door was never found.



Class A

D Series

During a day, VFR, single-ship aircraft series qualification, the aircrew was flying up a ravine when the crew realized they had insufficient power, airspeed and altitude to clear the highest terrain. During a right turn to fly back down the ravine the aircraft began a descent and a rapid right yaw which the crew was unable to arrest. The aircraft descended into the ravine and was destroyed. One crewmember received minor injuries.

Class B

D Series

Fire initiated in the avionics compartment during run-up for flight. Crew completed emergency shutdown and utilized hand-held extinguisher to successfully extinguish the fire prior to major aircraft damage. Damage occurred to the mast-mounted site

platform and master control power supply assembly components.

Class C

D Series

Aircraft was out of refuel returning to parking. Wind gusts were 10 to 18 knots. Aircraft was in a down wind condition 20-25' AGL when suspected settling with power occurred. Aircraft sustained damage to skids, both chin bubbles and lower WSPS cutter. 3 MR blades, FM antenna and pitot tube were also damaged. Aircraft was landed in "suspected" mine field.

Class C

Aircraft landed hard during autorotation training. Skid, Lower WSPS, Mast, XMSN and Tailboom damaged.



Class D

During postflight, striker plate found broken. Suspect spike knock. No further damage found.



Class C

R Series

Aircraft skidded and proceeded off the runway during landing. Damage to the #1 engine and propeller and main landing gear.

For more information on selected accident briefs, call DSN 558-9855 (334-255-9855). Note: Information published in this section is based on preliminary mishap reports submitted by units



POV Fatalities

through 31 Oct

FY00	FY99	3-yr Avg
7	14	11

TOP 3 KILLERS

1. Speed 2. No seatbelts 3. Fatigue

TREND: Motorcycle accidents on the rise

" Safety is not something we simply add to the task at hand; it must be an integral part of everything we do—both on and off duty" Defense Secretary William Cohen

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FY00 Aviation Accidents through 31 October

		Class A	Class B	Class C	Total
FLIGHT ACCIDENTS	Flight Acdts	1	2	7	10
	Flight Acct Rate	1.41	2.82	9.86	14.08
RATE COMPARISON	FY00 vs. FY99	0 %	NA %	40 %	67 %
	FY00 vs. 3-yr avg	4 %	107 %	21 %	29 %
Aviation Military Fatalities		0			

Note: FY99 Flight Accident Rate is based on estimated year-end flying hours



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