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FLIGHTfax

Army Aviation Composite Risk Management Information

Midair Collision

"Poor Judgment and Standards Failures Lead to Midair Collision"

plus

own the EDGE

Composite Risk Management

pull-out posters

U.S. ARMY

FLIGHTfax

Army Aviation Composite Risk Management Information

BG Joseph A. Smith
Commander/Director of Army Safety

COL George Bilafer
Deputy Commander

John Hooks
Publishing Supervisor

Paula Allman
Managing Editor

Chris Frazier
Staff Editor

Leslie Tisdale
Art & Design

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JOSEPH A. SMITH
Brigadier General, U.S. Army
Commanding

DASAF'S CO

From the Director of Army Safety

Know t Then

Our Soldiers continue to do a great job for our Nation in over 120 countries. In training or in combat, exposure and tempo are high, the terrain is complex, and the missions are certainly challenging. Our Soldiers are combatants and "on the edge." Composite Risk Management (CRM) teaches Soldiers to manage risk and "Own the Edge" by applying the proper control measures.

he Edge... "Own the Edge"

I recently gave a brief to a diverse group of folks and focused on the need for leaders to train Soldiers to Own the Edge through CRM. After the brief, a retired general officer scribbled a simple note on a piece of paper and handed it to me. In the message, he asked how Soldiers could *Own the Edge* if they didn't know where the edge was? It was a profound question.

Leaders at every level, from squad leader to general officer, are responsible for knowing their Soldiers and identifying where they are most at risk … then teaching, coaching, and mentoring them to emplace control measures. Because of maturity, experience, and training, the edge is different for each Soldier. Whether it is during a complex air assault in combat or a weekend on the lake, leaders must know where their Soldiers are at risk, reach into their kit-bag, pull out the tool that fits that Soldier, and apply it to the specific situation. Leaders have to show Soldiers where the edge is … and then teach them to own it!

The Army is counting on each of us to preserve the human capital of our formation, and you are doing great work! For the first time in 3 years, our Army's loss rates are beginning to turn downward. We are currently 12 percent below last year's accident rates for this time of year with almost 27 percent fewer accidental fatalities. This is an encouraging trend and we must keep pressing forward.

For ideas and tools, visit the CRC's Web site at **https://crc.army.mil** and select the Commander's Corner.

Whether in combat, training, or just blowing off steam, leaders need to be involved in identifying risks for each Soldier. With leader involvement, Soldiers can know where the edge is and, by applying CRM, they can OWN it!

BG Joe Smith

Investigators' Forum

Written by accident investigators to provide major lessons learned from recent centralized accident investigations.

ACCIDENT INVESTIGATION DIVISION
U.S. ARMY COMBAT READINESS CENTER

POOR JUDGMENT AND STANDARDS FAILURES LEAD TO MIDAIR COLLISION

It was a cool December night in a combat zone. The weather was good with no ceiling, visibility 6 miles with haze, a 7 knot wind, and a temperature of 8 °C. There was no moon illumination. The battalion had just completed its relief in place (RIP) training and was executing its first mission day in country without supervision from the retrograding unit. Senior battalion-level leaders were augmenting a line company and were to fly as part of a two-ship team, providing attack coverage in the division's area of operations from 2000 to 2400 local time. The task was to perform multi-aircraft operations while conducting a counter-mortar, man-portable air defense, rocket interdiction (CM2RI) mission in sector to detect enemy activity with emphasis on specific rocket boxes of known previous enemy points of origin for mortar and rocket fires on coalition forces.

The two AH-64Ds departed on a route using a modified combat spread formation with a briefed 500- to 700-meter aircraft separation. The combat spread formation allows the team to put maximum firepower forward and was chosen over a trail or staggered formation due to previous shoot-down attempts where the trail aircraft was shot at after the lead aircraft had flown over and alerted enemy forces. The lead aircraft pilot in command (PC) was a standardization pilot (SP) and master gunner, and a line company pilot occupied the front seat. The wing aircraft PC was also an SP, and his senior commander, who was also the air mission commander (AMC), was in the front seat. Both front-seat pilots were using night vision goggles (NVGs) while the backseat pilots were using the aircraft's night vision system (NVS).

As the aircraft flew north along the route of flight, the wing aircraft ended up in front of the lead aircraft. The lead aircraft turned right,

behind the wing aircraft, and proceeded east. The wing aircrew noted they had lost the lead aircraft and initiated their lost contact procedures. They linked up with the lead aircraft and continued the mission.

Approximately 35 minutes later, the AMC on the controls of the wing aircraft again lost visual contact with lead as lead announced a left turn along a road and his intent to pick up the southern end of the sector and head west. The SP in the wing aircraft took the controls to initiate lost contact procedures. The AMC saw the lead aircraft and then took the controls and began to move back into position off of the lead aircraft's right wing.

The PC of the lead aircraft announced a right turn and asked if the wing aircraft was still with him. The AMC of the wing aircraft stated, "Roger, I'm with you." The AMC then called the lead aircraft and stated, "I'm at your three right now." The PC of lead called tally and announced his intent to continue along a canal as he was flying relatively straight at approximately 450 feet above ground level (AGL) in a slight climb. The wing aircraft was in a slight decent. As the AMC in the wing aircraft attempted to regain his position with the lead aircraft, he failed to judge his distance and rate of closure and flew into the flight path and struck the main rotor system of the lead aircraft. The lead aircraft was destroyed, and the crew suffered fatal injuries. The wing aircraft suffered significant damage during the collision and conducted an emergency roll-on landing.

Why did this happen?

How could senior aviators conducting a relatively simple team mission collide with each other? The front-seat AMC had seen the lead aircraft for 34 seconds prior to impact. He had the controls for the last 24 seconds prior to impact. During this timeframe, the backseat SP never made visual contact with the lead aircraft. What were the preconditions that led to the human errors causing these two aircraft to collide?

The AMC had over 1,400 military rotary-wing hours, of which more than 130 were in the current mission type and design series (MTDS). He had over 90 NVG hours prior to the accident, but none in this aircraft type. The SP had over 3,000 hours, of which almost 800 were in this MTDS, as well as over 900 hours of NVS and over 50 hours of

NVG time. The SP in the lead aircraft had over 2,500 hours, of which more than 820 were in this MTDS.

As stated earlier, this was this battalion's first mission day in theater after completing RIP tasks. Each aircrew had flown a day and night local area orientation and a day and night mission orientation with the unit they were replacing. The crews were still new to the battle space, and it was a zero-illumination night; however, ambient light from the city provided some illumination.

At preflight, the front-seat pilot of the lead aircraft had drawn two sets of NVGs and presented one set to his wing aircraft (the AMC and SP). It was at this point the leaders' judgment, mission planning, and Composite Risk Management (CRM) began to fail. The wing aircrew elected to conduct impromptu aircraft NVG qualification training on the AMC, who had not flown NVGs in the past 15 years and never in this type aircraft. Most front-seat pilots in the battalion were NVG qualified and current from training prior to deployment and currency flights during staging operations, but not the AMC.

Following the preflight, the crews received an operations and intelligence briefing and conducted the air mission briefing. Tactical considerations were briefed, but NVG considerations and accidental hazards pertaining to NVG readiness level (RL) progression were not. The crews selected a combat spread formation, determining the tactical hazards outweighed the accidental hazards associated with this formation, even though this formation limited their ability to maintain visual contact under night vision device (NVD) and zero-illumination conditions.

During the mission planning, the crews also failed to require the use of their infrared strobes in accordance with the aviation procedures guide. The AMC and the mission briefers (both SPs) displayed overconfidence in their ability to complete their first night tactical combat mission in theater without considering the accidental risks associated with simultaneous NVG training. Also, RL progression was not annotated on the risk assessment worksheet.

The AMC lacked recent experience and training to recognize his rate of closure and position relative to the lead aircraft while using NVGs. As the NVG RL-3 AMC was attempting to regain his position with the lead aircraft, he did not possess the knowledge or skills to maintain situational awareness necessary to avoid collision with the lead aircraft. During this maneuver, the AMC had visual on the lead aircraft for over 34 seconds. The backseat SP did

REPORTING NEAR-MIDAIR COLLISIONS

CW5 MARK W. GRAPIN
UAAF C2 AVIATION SAFETY OFFICER
COALITION FORCES LAND COMPONENT COMMAND

In our congested Coalition Forces Land Component Command (CFLCC) airspace, several near-misses (or, more correctly, near-hits) have gone unreported. Near-midairs are those events where avoidance was due to chance rather than an act from either pilot. A collision would have resulted if no action had been taken by either pilot or any situation involving an estimated distance of less than 500 feet. It is only through accurate and timely reporting of such events that the command is able to tackle the causes and put realistic and reasonable countermeasures in place. A DA Form 2696-R, *Operational Hazard Report* (OHR), AF Form 651, *Hazardous Air Traffic Report* (HATR), or similar form is preferred. Submit the form to your Aviation Safety

not visually acquire the lead aircraft while dividing his duties in the cockpit. The SP was overconfident in the AMC's abilities to fly NVGs and inadequately supervised the RL-3 AMC during this portion of the mission.

From an outside perspective looking in, the reasonable aviator might ask, "Why would anyone conduct NVG training on the first solo mission in theater, under zero illumination, without briefing NVG considerations or conducting NVG academic training, and go right into mission-level tasks without base task training or demonstrated proficiency?"

Judgment aside, Aircrew Training Manual (ATM) TC 1-251 contained inadequate written procedures that did not require academic training prior to conducting aircraft flight training during aircraft NVG qualification or refresher training. Also, the ATM did not have NVG considerations for Task 2010, *Perform Multi-Aircraft Operations.*

What can we do to prevent this in the future?

The deficiencies noted in the ATM allowing the crew to conduct aircraft NVG mission task training without appropriate academic and base task training will be corrected in the next change to the ATM. The change will include additional NVG and NVD considerations and the requirement to complete appropriate NVG academic training, base task training, and then mission training in sequence.

Leaders at all levels of aviation operations need to ensure missions are planned in accordance with written procedures and CRM. Leaders at all levels—to include PCs, mission briefers, and approval authorities—need to continually identify accidental hazards associated with formation selection, training requirements, and aviator proficiency, as well as the expected tactical considerations that are at the forefront of our planning processes while conducting missions in combat zones. ♦

–Comments regarding this article may be directed to the Combat Readiness Center (CRC) Help Desk at DSN 558-1390 (334-255-1390), or by e-mail at helpdesk@crc.army.mil. The Accident Investigations Division may be reached through CRC Operations at DSN 558-3410 (334-255-3410), or by e-mail at operationssupport@crc.army.mil.

Officer (ASO) as a part of your mission debrief and energize the system designed to address such events. Not reporting near-midairs is simply not an option!

RECOMMENDATIONS

• **Mission Briefers and Air Mission Commanders (AMCs):** Include collision avoidance tactics and techniques in your briefings–particularly in areas of heavy congestion, converging or overlapping flight routes, or where turns in flight routes may lower a pilot's visibility.

• **UAV Operators:** Be sure to consider conventional aircraft flight paths in all flight planning and don't take flight planning for granted: A big sky, little bullet" mentality has already been the cause of a midair collision between an unmanned aerial vehicle (UAV) and a conventional aircraft.

• **NVS Crews:** Don't assume you are seen by the other aircraft—particularly by those flying under FLIR systems. Deconflict your routes and be mindful of the challenges and limitations of different systems.

• **All Aircrews:** Immediately report near-midair collisions. Your debrief isn't complete without your report. ♦

–Contact the author at DSN (318) 828-1047 or e-mail mark.grapin@us.army.mil.

ACT-E: AN UPDATE TO THE FIELD

STEPHEN T. KNOWLES
U.S. ARMY COMBAT READINESS CENTER
AND CW4 GEORGE A. LUTZ
U.S. ARMY AVIATION WARFIGHTING CENTER

Aircrew Coordination Training-Enhanced (ACT-E) is a revitalization of the concept and training techniques for aircrew coordination instruction that have been used in Army Aviation and the Aviation Training Center since the early 1990s. Currently, all Flight School XXI aviators are taught the basics of aircrew coordination during initial qualification using the program developed earlier. Army Aviators in the force receive unit-based annual refresher training.

The Directorate of Evaluation and Standardization's well-recognized Aircrew Coordination Training (ACT) mobile training program has become the interim ACT-E course while the new ACT-E program continues in development. This "train-the-trainer" course, and its continued use as the annual refresher for aviation field units, will continue to be the field's sustainment program for ACT until completion and complete fielding of the newly approved ACT-E.

So why do we need a third aircrew coordination training course? Isn't what we already have good enough? The answer is "no," certainly not when Army Aviation accident analyses and trends continue to demonstrate a need for better aircrew coordination. The U.S. Army Combat Readiness Center, in partnership with the U.S. Army Aviation Warfighting Center's Directorate of Training and Doctrine (USAAWC-DOTD), recognizes aircrew coordination continues to be a recurring trend for many of our most recent aircraft accidents.

Development of the new ACT-E program began with the creation of new training support packages, specific to aircraft types, because of the identified need and the demands of the contemporary operating environment. These aircraft modules are addressing aircrew coordination challenges particular to the configuration and characteristics of specific aircraft and missions.

The first module developed was for the AH-64 (Heavy Attack) mission because of the unique tandem seating arrangement of the crew compartment and the inability of one crewmember to see what the other is doing—or not doing. Recently, several accidents have occurred during a transfer of the flight controls—which was acknowledged by crewmembers—but without the actual transfer of aircraft control occurring.

Army aircraft were not designed to be flown for long periods without pilot input. Digital source collection has enabled the Army to make the Heavy Attack ACT-E training module quite impressive by using animations derived from actual aircraft data and by illustrating many of the underlying concepts and techniques for affecting quality aircrew coordination. The development of OH-58 Kiowa Warrior (Attack/Recon) and UH-60 (Utility) modules is currently underway. More will follow on these modules in future updates.

ACT-E will be the prescription to help our aviators preclude aircrew coordination errors. This revitalized program will have a positive impact on aviation training as a whole. I won't let the "cat out of the bag," but if you can experience the Heavy Attack module without an increased heart rate, then you may not fully appreciate the impact of poor crew coordination on readiness or the need for this vital training program. We expect ACT-E to be that good!

Fair winds, safe flight, mission execution! ♦

–Mr. Knowles is the Loss Prevention Program Manager for the Air Task Force at the Combat Readiness Center and may be contacted at DSN 558-3530 (334-255-3530) or by e-mail at stephen.knowles@us.army.mil. CW4 Lutz is the ACT-E Program Manager at DOTD-USAAWC and may be contacted at DSN 558-9680 (334-255-9680) or by e-mail at george.lutz@us.army.mil.

When Does Confidence Become Overconfidence?

CW3 ANTHONY D. SANDERS
E CO., 305TH MI BN
FORT HUACHUCA, AZ

When does confidence become overconfidence? Where is the fine line? Unfortunately, we can't always answer those questions until it's too late. If we're lucky, we walk away with a lesson learned and say, "I'll never do that again!" Some, however, aren't so lucky.

On any given night, the National Training Center (NTC) can be a challenging environment. Add high winds and zero illumination, and even the most seasoned pilots work up a sweat. On one such night I was performing an observer controller mission in an OH-58C, following two UH-60s. The aviator I was flying with had more than 1,000 hours, with about 250 of those under night vision goggles. Until that night, we had only flown day missions together.

The Hawks were to land in the assembly area at 2200, so we arrived a few minutes early to watch them come in. As I began my approach, the lack of contrast forced me to momentarily use my infrared (IR) light to gain situational awareness. I turned the light on for 3 seconds, then turned it off and set the aircraft on the ground. After landing, my left-seater made a comment that I needed to learn to fly without using the IR light. My comeback was," When it's dark, it's dark."

Several minutes later, the Black Hawks arrived. The first one made its approach with the IR light on and then turned it off just prior to touching down. The second Hawk came in with its light off and terminated the approach with a go-around. He tried a second approach in the same manner, but it ended the same. On the third try, he used the IR light for the approach and then turned it off just before touchdown. Again, a comment was made about using the IR light and how we need to train like we fight.

After the Hawks picked up the infantry passengers, we all departed and flew off into the desert. Shortly after takeoff, my left-seater asked if he could fly for a while, so I transferred the controls. Again he commented on the IR light because both Black Hawks were now flying with their lights on at all times. I decided to discuss the issue with him. We talked about confidence versus experience and training versus combat. I tried to make the point that the training value of not using the IR light was not worth the risk of killing yourself. Over time, as people gain experience, they gain confidence in their skills and won't need to use the light as much.

I had more than 1,000 hours flying at the NTC and rarely used my light. When I did need it, though, I used it without hesitation. I knew the terrain we were heading for was going to rise soon and a few small hills were coming up to our front, so I advised my left-seater to be prepared because we were at 200 feet above ground level (AGL) and below.

As we neared the hills, I again gave a warning to begin a climb. " *Climb, Climb!"* was all I could say before I grabbed the cyclic and pulled back. I managed to catch a glimpse of the radar altimeter from under my goggles; it read 4 feet! I transferred the controls back, then switched on the IR light and left it on for the remainder of the flight.

We were both lucky that night. He never saw the rising terrain. I think that was the defining point when he realized maybe he was a little overconfident. As always, after the flight we conducted an after-action report and discussed what happened. We both took away valuable lessons learned from the experience. I now look for those preconditions that lead to potentially unsafe acts. ♦

–CW3 Sanders wrote this article while attending Aviation Safety Officer Course 05-001 at Ft. Rucker, AL. He may be contacted at anthony.d.sanders@us.army.mil.

Close Call

CW3 R. GENE FRAZIER
204TH MILITARY INTELLIGENCE BATTALION
FORT BLISS, TX

Crew coordination: what is it? The first thing that should come to mind is aircrew members interacting for the safe, efficient, and effective performance of tasks, which comprise eight elements. The following story is about how the lack of one element of Crew Resource Management—*Announce Actions*—almost resulted in the collision of two CH-47Ds. Announcing actions, as defined by TC 1-240, is simply to ensure effective and well-coordinated actions in the aircraft. All crewmembers must be aware of any expected movements and unexpected individual actions. Each crewmember will announce any actions that affect the actions of the other crewmembers.

I was stationed at Fort Wainwright, AK, as a Chinook pilot from October 2000 until August 2003. Fairbanks, home of Fort Wainwright, is also home to some of the most extreme weather in the world. The temperature ranges from -60°F in the winter to 90°F during the brief summer. During the winter, the cold temperatures—along with the terrain, blowing snow, mountains, and the famous darkness—demand the best out of everyone.

Company B, 4/123rd Aviation Regiment is also home to the High Altitude Rescue Team, or H.A.R.T., of which the other pilots and I were members. We are very experienced pilots, but one night almost changed our fate forever.

I was flight lead, along with our company standardization pilot (SP), during a multi-ship air assault during the winter of 2002. Things were going well for the flight of five. We had just completed our first turn and repositioned in the FARP for refuel.

While in the FARP, my aircraft received a load change, and we were now to pick up two shotgun HMMWVs. We waited for the beacon call and repositioned as a flight to the pickup zone (PZ). Due to the terrain, we were required to approach the loads 180 degrees out. Typically, we approach the loads from the rear, with the flight moving forward to the front of the PZ and stopping parallel with the loads to our right. On this night, we approached the loads from the front, and then each aircraft did a pedal turn behind the load to reposition to the load. It was dark with zero illumination and blowing snow, but visibility was still good.

As we approached the first load, which we expected to comprise two HMMWVs, we discovered it consisted of a single HMMWV. I was in the right seat on

the controls, and the SP was in the left seat. As I slowed the aircraft, I told the SP the first load to our right was not our load. He began looking toward the right, trying to find our load. That's when things became interesting. The infrared (IR) spotlight was on as we tried to locate our load. I was still moving slowly forward when I decided to look forward. That's when I noticed Chalk 2 approximately one-half to one rotor disk directly in front of me, moving left to right. I yelled an expletive, pitched the aircraft at least 15 degrees nose up, and backed away from Chalk 2. My infrared (IR) light then momentarily blinded the cockpit of Chalk 2, which was flown by our battalion SP and my platoon leader. I am thankful Chalk 3 had some distance behind me; otherwise, I would have easily backed right into them. After things settled down, we located our load and continued the mission.

At the completion of the mission, we had a good after-action report and discussed the problems and challenges. It all came down to one element of aircrew coordination—***Announcing Actions.*** Within our cockpit, I was looking to the right, focusing on locating the load. I announced to our SP I was looking for the load, but I should have announced our actions to the flight. Chalk 2 assumed since we were going so slow, we were moving toward our load and proceeded to go around us, never announcing his actions. At the same time, we weren't looking forward, assuming the rest of the flight remained behind us. Once I saw Chalk 2 in front of us, I reacted somewhat violently. We never had time, and again, we're lucky Chalk 3 didn't move up behind us.

We almost became a statistic that night because of something as simple as announcing actions. It's standard to announce your actions within a cockpit, although you don't always see the importance of it within a flight. Remember to never assume what someone else is going to do in another cockpit. ♦

–The author wrote this article while attending Aviation Safety Officer Course 06-002. He may be contacted by e-mail at gene.frazier@us.army.mil.

BG E.J. SINCLAIR
COMMANDING GENERAL
UNITED STATES ARMY AVIATION WARFIGHTING CENTER

Aircrew Training Manual Implementation

Many units in the field did not fully implement the new aircrew training manuals (ATMs) by the 1 January 2006 deadline. These units have requested the Directorate of Evaluation and Standardization (DES) to better define *implementation* for transition to the new ATMs. At the unit level, all assigned or attached FAC 1 and FAC 2 aviators will be fully integrated with the new ATMs as described below.

• Crewmember academic review of changes between the old and new ATMs.

• Flight and academic tasks completed in accordance with (IAW) the appropriate ATMs and implementation memo dated 5 January 2005.

• Crewmember task performance and evaluation requirements updated on DA Form 7120-1 and 7120-2 to reflect new tasks trained.

• Implementation of new ATMs annotated on DA Form 7122-R as an event with appropriate flight time, if required.

• Crewmembers who do not complete ATM implementation IAW the revised implementation timelines stated below will be redesignated Readiness Level (RL) 3 until all training requirements are completed.

• Aviators, currently designated FAC 3 and who have not been fully integrated with the new ATMs, must go through implementation upon the aviator's next designation in an FAC 1 or FAC 2 flying position. Implementation will take place during the aviator's RL progression and must be completed prior to RL 1 status.

Implementation Timeline

I fully recognize the transition to the new ATMs has created additional training requirements for units during a time of not only a high operations tempo, but aviation transformation. However, commanders must aggressively attack this problem and ensure our pilots are receiving the best training possible. There is only one ATM per aircraft authorized for use today. To assist commanders in the field with implementing the new ATMs, I will extend the dates for implementation as follows:

• **Active Component** (AC) units have until 1 July 2006 to have all FAC 1 and FAC 2 aviators fully integrated in accordance with the appropriate ATMs.

• **Reserve Component** (RC) units have until 31 December 2006 to complete full implementation as stated in the previous paragraph.

• **Units deployed in support of combat operations** will have 180 days after returning to home station to fully implement the new ATMs. However, commanders should strive to implement the new ATMs in the combat theater if possible and prudent.

If more information regarding ATM implementation is desired, contact COL Scott B. Thompson, Director of DES, at DSN 558-2532 (334-255-2532), or by e-mail at scott.thompson@rucker.army.mil.

ATM TIMELINE

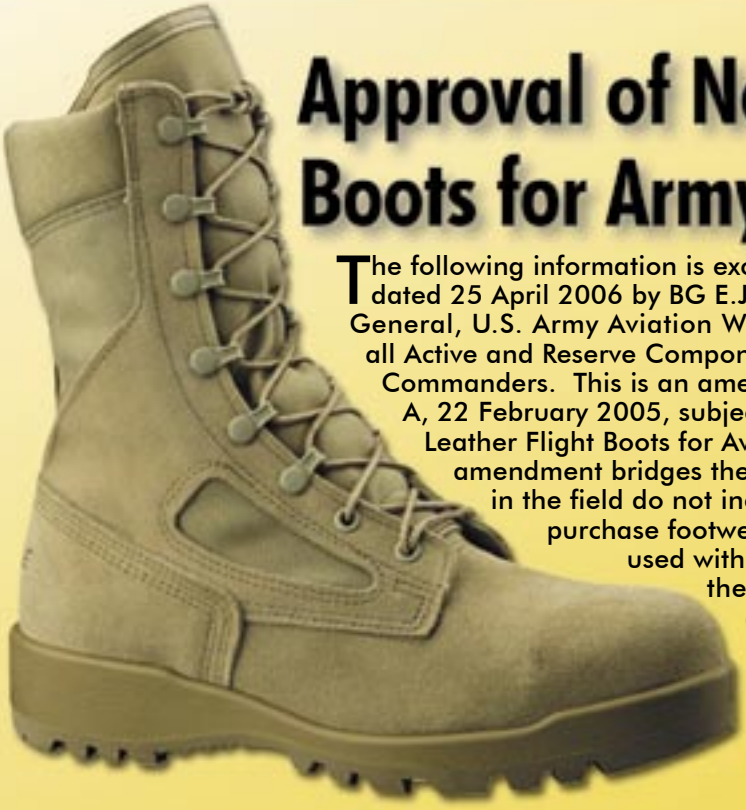
May 2004: USAAWC CG directs the update of all aircrew training manuals (ATMs) across the fleet to ensure current tactics, techniques, and procedures (TTPs) coming out of Operations Iraqi Freedom and Enduring Freedom (OIF/OEF) are incorporated to make them relevant to the aviation warfighter.

September 2004: USAAWC CG approves update of all ATMs and directs their usage in the field as an interim manual.

January 2005: DES issues guidance for implementation of the new ATMs for Army Aviation units, which includes academic and flight task requirements for integrating ATMs into Aircrew Training Programs (ATPs).

September 2005: All ATMs, except for the UH-1 and OH-58A/C, are complete and published.

BRANCH CHIEF



Approval of Non-All-Leather Boots for Army Aviation Use

The following information is excerpted from a memo dated 25 April 2006 by BG E.J. Sinclair, Commanding General, U.S. Army Aviation Warfighting Center, to all Active and Reserve Component Aviation Brigade Commanders. This is an amendment to ATZQ-CDM-A, 22 February 2005, subject: Approval of Non-Leather Flight Boots for Aviation Uniforms. This amendment bridges the gap to ensure Soldiers in the field do not incur additional costs to purchase footwear that would only be used with aviation uniforms (e.g., the Battle Dress Uniform (BDU), Desert Battle Dress Uniform (DBDU), Aviation Battle Dress Uniform (ABDU), and the one-piece flight uniform (green or tan).

The following non-all-leather boots are the authorized footgear for all aircrew uniforms:

- **Army Combat Boot-Temperate Weather (ACB-TW).**
- **Bellville Model 340DES Hot Weather Flight Boot** passed the required safety criteria for aviation use, provides better protection than the current all-leather boot, and is highly breathable. The upper construction of the 340DES is a combination of flame-resistant NOMEX and cotton fabrics, as well as leather. This item will provide aviation warfighters a highly breathable combat boot that can be worn during flight operations in hot weather environments.
- **Air Force Tan Flyers Boot** is no longer being provided through PEO Soldier, but Soldiers may continue to wear them during flight operations with all aviation uniforms until the boots are no longer serviceable.

For more information, contact MAJ Tim Williams, Chief of the Aircrew Integrated Systems Branch at Directorate of Combat Developments. He may be reached at DSN 558-3271 (334-255-3271) or by e-mail at timothy.williams@rucker.army.mil. ♦

Editor's note: The hot weather flight boot (Bellville Model 340DES) and the non-aviation hot weather boot are both very similar in appearance. Supervisors and crewmembers should be cautious which boot is worn in the aircraft. The Bellville Model 340DES is currently a commercial item and available for units and individual purchase; however, it will become an issue item in the near future.

It Takes a Crew to Ma

CW3 JOHN P. KING
N TROOP, 4TH SQUADRON, 278TH ARMORED CAVALRY REGIMENT
TENNESSEE ARMY NATIONAL GUARD

If you're an Army Aviator, you're going to fly in the desert. It's just a matter of time. It's important for all pilots to understand dust landings and train for them. I'm not an instructor pilot (IP) or an expert on dust landings, but I did make multiple dust landings in Iraq. I'd like to share my lessons learned.

While Army Aviation operates primarily from fixed bases, the Soldier you support doesn't. He is operating from a forward operating base or other type of base; however, that Soldier will be your eyes on the ground. He is your forward air controller and will be a valuable asset if you use him correctly. Remember, the ground Soldier thinks in relationship to what he knows; he is not a pilot. A 10-degree slope for him is level ground or a landing zone (LZ) clear of all vegetation is a good LZ. Not all boundary obstacles are identified as hazards to flight. The power of your aircraft and the dust it can kick up is usually underestimated. You're responsible for the safety of your crew, passengers, and aircraft.

Four Cs for flying in the desert

• **Competence.** Before you ever start any type of dust training, know the basics. Know and understand the limits of your aircraft. Understand what the instruments are telling you. This may seem like a "duh" statement, but it is one I stand by. I'm not talking about check ride knowledge; I'm talking about understanding power requirements and aircraft limits. Hot, heavy, and in the dust is not the time to hear the low rotor horn. I flew a UH-60A in Iraq after many years in the UH-1H and OH-58A-C. When I started flying the Black Hawk, I was amazed with its power. I never thought power would ever be a problem, but I was wrong. I was fortunate enough to have an IP who made sure I understood my aircraft. He told me understanding my aircraft is like target shooting: hitting the target would get me through a check ride, but I needed to aim for the bull's eye.

Once you understand your aircraft, it's time to train. Training means in a controlled environment as close to the actual conditions you will fly in. You must push past your comfort zone to get competent in dust landings. If you only train to a requirement, you're cheating yourself. Flying instrument flight rules (IFR) is different than flying in the clouds. Flying in light dust is different than flying in real dust conditions. Train where it's nasty and make sure you help your crew chiefs clean the aircraft afterward. Remember, training is perishable—train, train, and train some more.

• **Cognizance.** Most LZs will have a fixed pad and an accepted approach procedure. Others may have nothing more then an orange marker panel. It really doesn't matter. You still have to understand your landing environment. Do you remember all the acronyms you learned in flight school? This is where you use them. Do a high recon. Know your approach axis, obstacles (in and out), and winds. If you find a more suitable landing area, ask for it. I've even asked for smoke when I couldn't establish winds. Know where the dust cloud will form. Conduct a low recon. Look for trouble spots such as slopes, wadies, or even unexploded ordnance. Look for obstacles like boulders,

ke a Safe Dust Landing

sheep, and poles. Are there building materials, tents, tarps, or portable latrines that may be blown down or sucked into your rotor system? Don't make the mistake of thinking that because you're landing to an *improved* area you won't pick up dust. Though hardened landing areas are usually better than unimproved areas, they still have the potential for dust. I remember landing to a road that turned into a dust bowl. Know what you're landing into because when the dust begins to billow and swirl, you may lose visual references momentarily.

Do a map analysis. Remember that where you land will be your next takeoff point. Keep this in mind when you go in. What will be your obstacles going out? If you're going to refuel or pickup passengers, remember your power requirements will change.

Dust landings are a lot like flying an instrument landing system (ILS) approach to the ground. You pick a spot, set an approach angle, and land with zero to near-zero forward speed. Your world becomes very small, very fast. It's important you have done everything to understand your touchdown point before getting in the dust cloud. This leads us into our next discussion point.

• Color/Contrast. The color of the sand tells a lot about the type of sand you're landing in. Know the difference between dark-colored and light-colored sand. Dark-colored sand is usually a better place to land. Light-colored sand seems to be finer and more likely to form dust clouds.

Vegetation is your friend. When you pick your touchdown point, make sure you have something you can use to judge closure rates and drift. I found a little bush that was no more than 15 feet off my nose at about a 30- to 45-degree angle. If I didn't have that, I would look for a sandbag, a big rock, or a vehicle track. Just make sure it lies within your rotor disc area when you touch down. Because of the vortices of the rotor system, you should be able to maintain a visual contact with your reference point during the touchdown phase of your landing. If you're landing using night vision devices (NVDs), your visual awareness of surroundings becomes more critical. Be prepared to temporarily lose your reference during the approach sequence.

• Crew Coordination. I flew more than 750 hours of combat time in Iraq. For the majority of the time, I flew with SSG William "Bill" Gard and SPC Justin Babb as my crew chiefs. Though my front-seaters changed, it was the crew chiefs that provided my guidance.

In a dust landing, it takes a crew to reach the ground safely. The key to our success was communications. In our crew, the pilot not on the controls handled the radios, monitored the instruments, and scanned for obstacle avoidance. One crew chief would clear the aircraft and keep a visual on the wingman. The other crew chief would clear his side and call the

dust cloud. It was important the crew was able to communicate a lot of data quickly. The pilot on the controls would FLY THE AIRCRAFT! Each crewmember needed to keep a visual reference to the ground. If anyone lost visual, it would be announced and confirmed by the pilot on the controls. If everyone lost sight of the ground, the pilot on the controls would make a go-around decision. All members of the crew had a right to call a go-around. If someone other than the pilot on the controls called a go-round, it may come with directions or a description why the go-round was called. Here's how it sounded.

P*: Before landing check is complete.

P: Go-around is to the left, over the wires 100 feet. I have my touchdown point in sight.

CE1: Wires. Hold your descent.

P: Holding.

CE1: Chalk 2 is two discs 5 o'clock.

P*: I have a ditch 30 meters 11 o'clock.

P: Roger.

CE1: Clear wires.

P: Cleared of wires.

CE2: Dust forming at the tail.

P: Roger.

P*: Drifting left.

P: (Response by control input.)

CE2: Dust at the doors, I've lost the ground.

P: I have the ground.

CE1: I have the ground.

CE2: Dust is overtaking.

P: Still have my reference.

CE2: I have the ground. Clear down right.

CE1: Clear down left. Then we would land. If a go-around was needed, it would be something like this:

CE2: Go-around, barbwire.

P: Go-around (initiates a climb).

P*: Chalk 1 is go-around (to Chalk 2).

P*: 50 feet (AGL), 800 (TGT) climbing. (TGT limits would be called if TGT was the limiter; torque would be called if torque was the limiter.)

P*: 80 feet, 846 stop collective.

P*: 100 feet clear the wires, clear to go left.

CE1: Clear left; Chalk 2 is three discs back 5 o'clock.

P*: Chalk 1 is coming left (to Chalk 2).

As complicated as it was to land in the dust as Chalk 1, it was in some respects more complicated for Chalk 2. In a flight of two, the trail aircraft has to make a decision that doesn't confront Chalk 1—whether to land with Chalk 1 or to wait till he lands and the dust settles and come in after him. The right answer is—it depends. A multi-ship landing is best accomplished with everyone landing at the same time. The trail aircraft should position itself as to maximize the benefits of the wind. If possible, Chalk 2 should position itself behind and upwind of Chalk 1 and try to touch down simultaneously with Chalk 1. If, however, you're flying to an area that is dirty or unknown, Chalk 2 may elect to delay his landing until Chalk 1 is down. This will allow you to gauge the dust and gives room to Chalk 1 if he needs to do a go-around.

This discussion would be deficient if I didn't address go-arounds. Go-arounds are free. As pilots, your No. 1 priority is for the safety of the passengers and crews. If a landing doesn't feel right, do a go-around. Will your fellow pilots say something? Probably. I can tell you it took me three attempts to get into one dirty LZ. The first go-around was initiated by my copilot, the second by me. I got kidded by my *brothers.* I also had my crew chiefs tell me they thought I made the right decision. That was good enough for me. I value the opinions of the men in the arena more than those watching from the cheap seats.

Army Aviation is vital to the success of the mission in the Middle East. In the year I was in Iraq, my troop of eight UH-60A aircraft flew an estimated 28,000 troops. We did every type of mission: re-supply, air assaults, PAX-hauling, and even reconnaissance. We were charged with providing crews to support the VIP mission for Task Force Freedom. In every mission, you could count on certain things: the days were long, hot, and tiring, and more times than not, we had to land in dust.

I hope my experience will help those who are following. When you go over, please fly safe. ♦

–CW3 King may be contacted by e-mail at john.p.king@us.army.mil.

You Have the Controls

ANONYMOUS

"You have the controls." How many times have you heard that statement? How often do aviators pay attention to it, and under what conditions would it mean something to you? I'd challenge that statement should always mean something—no matter when it's made. And it shouldn't be made as a question but rather a statement, as it is intended. So how do you respond when someone says, "You have the controls?" Here's what happened to me.

I was a pilot in the front seat of an AH-64A when the ol' "you-have-the-controls" thing came up. Now, of course, hearing this should not have been much of an alarm because I had heard it so many times before. This time, however, was slightly different.

Here's the scenario: I was participating as the gunner at a qualification range. I had made a few mistakes that evening but felt pretty good about my overall performance. The entire range normally lasts about 30 minutes, and we were at the end. I was head down, looking at my next engagement, my helmet display unit (HDU) not on my eye, and my cyclic stowed. As I was typing in grid coordinates for a remote engagement, I hear the pilot in command (PC) say, "You have the controls!" At first, I was alarmed at the tone of his voice. I then realized I needed to do something, like take the controls!

Imagine it's dark and you're "inside," looking at something not even close to aircraft flight symbology. So I did what I was told. I tried to take the controls and realized they weren't where they were supposed to be. They were stowed! I didn't have any flight symbology because my HDU was swung out of the way and my cockpit lighting was too high. I took the controls anyway—after locking my cyclic up—and tried to fly with the HDU swung out. I had to correct that situation—and fast. I let go of the collective, swung my HDU down, and adjusted it the best I could with the limited amount of time I thought I had. My next mistake was I had turned the hold modes off because I was told by the PC to get forward airspeed. I was trying to make sense of what was going on while flying around when I was not prepared to do so.

We were in a small situation, and if one were to refer to chapter 9 of the -10, it would be listed under emergencies. The PC had a pilot night vision system (PNVS) failure. To lose symbology in the blink of an eye can be pretty stressful, and the emergency procedure was not accomplished. Instead, the controls were handed over. To make matters worse, neither one of us noticed the weather (actually, more like fog) rolling in.

As I took the controls, turned the hold modes off, and got forward airspeed, I became extremely disoriented. I did what I could to keep level and maintain altitude. I then brought up a flight page for better reference because the HDU was really disorienting me at this point. Then, wouldn't you know it, my target

acquisition and designation system (TADS) washed out completely white! Now I couldn't see anything but flight symbology. I told the PC I was going instrument meteorological conditions (IMC), but was told to look for the ground lights of the tower and aim for them. I did, but all I saw was a glow through the fog. I started a climb to commit to IMC, leveled the wings, and told the PC we were IMC.

IT WAS A PRETTY BAD SITUATION TO BE IN; BACKSEAT PILOT HAD PNVS OUT, FRONT-SEAT PILOT WAS DISORIENTED FROM BEING "INSIDE" FOR SO LONG, COCKPIT LIGHTING BRIGHT, HDU NOT ON CORRECTLY—ALL WHILE IMC.

It was a pretty bad situation to be in; backseat pilot had PNVS out, front-seat pilot was disoriented from being "inside" for so long, cockpit lighting bright, HDU not on correctly—all while IMC. Well, as I was climbing to avoid contact with anything, the PC told me to stop, even though I was the one on the controls. I thought, "What?! You have to be kidding! The ground is down there!" Since I wasn't the PC and it wasn't my call, I didn't climb anymore, nor did I commit to IMC. I was wrong on both occasions. For several minutes, we were flying in disarray when—*POOF!*—we broke out of the fog. We landed safely and never really discussed in great length what had just transpired.

Lessons learned

I tell this story in hopes you will gain a little insight. First, there were several things that went wrong. The PC was wrong for not responding to the emergency properly, and I was pretty much wrong on everything else I had control over. Second, just because a PC tells you to do something doesn't mean it's the safest or smartest decision. Go with your training; do what you need to do to survive and keep your controls and your situation in the forefront of your mind. Finally, if you're IMC—or even think you're IMC—COMMIT! Do yourself and your stick buddy a favor and live long enough to argue about what happened after you've safely landed. ♦

–The author's name was withheld by request. If you would like to publish a story anonymously in *Flightfax*, please call Ms. Paula Allman, Managing Editor, at DSN 558-9855 (334-255-9855) or e-mail paula.allman@crc.army.mil.

Redeployment Training Considerations

CW4 MICHAEL REESE
DIRECTORATE OF EVALUATIONS AND STANDARDIZATIONS

Some aviation units deployed for extended perods often have inadequate training plans for reintegration. Unfortunately, this can adversely affect preparation time for future deployments. The following information provides insight and perspective when developing a training plan during the reset phase for redeploying units.

When units are scheduled to deploy, unit planners normally develop detailed training schedules ranging from individual readiness level (RL) progressions at home station through reception, staging, onward movement, and integration (RSOI) in theater. The same attention must be given to the redeployment phase of the operation.

Unit trainers should consider these factors when developing a redeployment flight training schedule: block leave, aircraft and equipment reset, decompression training, training for RL progressions for newly assigned aviators, night vision goggle/night vision system (NVG/NVS) currency, completion of waived aviation training program (ATP) requirements, and changes of command/responsibilities. Of utmost importance is to update flight physicals within 90 days of return if not completed while deployed.

Units should plan for these considerations 6 to 8 weeks prior to redeployment. These factors will enable planners to prioritize the flight training schedule when resources are at a minimum. Standardization pilots (SPs) and instructor pilots (IPs) should maintain a list of aircrew members who were granted ATP waivers and what tasks were waived, as well as maintain the status of each crewmember enabling calculation of aircraft/night vision device (NVD) currency dates and training requirements.

Recommendation

Adequate training is an essential element of success for aviation units deployed in theater for extended periods. The time and resources necessary to support plans for reintegration must be considered an integral element of the preparation for deployment. When developing the reset plan, the unit may consider a three-phase training model. The primary consideration should be completion of individual training prior to the commencement of collective training.

Phase 1. This is the first 4 to 6 weeks upon redeployment, when available resources are low for both equipment and personnel. Unit planners can manage block leave in a way that key trainers are sequentially granted leave to be available to provide training. This phase should be dedicated to academic training and the maximum use of simulators. The academics should focus on the reintegration of the non-hostile/non-combative flying mentality. This training should also include, but not be limited to, the following:

–Refresher training on the mission briefing process and dealing with risk mitigation factors that were managed differently while serving in combat; for example, flying in marginal weather or reaction to in-flight emergencies.

–Conduct a mandatory "pilot orientation course" for all aircrews. This course should focus on Army Regulation 95-1, FAA procedures, local flight regulations, and a semi-annual weather brief.

–Emergency procedure training, both academically and in the simulator. During this training, conduct discussions pertaining to conservative decision-making in the non-combat zone when dealing with in-flight emergencies.

–Schedule DES to present accident briefings, trends, and lessons learned for redeploying units.

Phase 2. This training period is dedicated to individual training and should be completed 4 months after redeployment. Since aircraft availability might be limited, unit planners must prioritize and closely manage the flight schedule. SPs, IPs, and maintenance test pilots should be the first priority to maintain currency, complete previously waived ATP requirements, and annual proficiency and readiness tests. The remainder of this phase should be utilized to complete individual training requirements for the remainder of the battalion- and staff-supported aviators. During this phase, units are discouraged from attempting demanding collective training events that are staff intensive, such as aerial gunnery. The goal should be for most, if not all, aviators to complete all individual requirements.

Phase 3. When the commander is satisfied with the completion rate of individual training, he should focus on collective training and gunnery requirements. This phase of training will continue through the next deployment cycle.

These lessons learned are from units who have redeployed and/or were soon on deployment orders and had difficulty with train up due to concurrent reset and deployment preparations. Those units that had a solid reset plan had a much easier time during mobilization training. This information, of course, is not inclusive to all the situations and requirements for a perfect reset training model, but it is designed to encourage leaders and trainers to develop a plan before rotation completion. ♦

–The author may be contacted at DSN 558-2531 (334-255-2531), or by e-mail at michael.reese@rucker.army.mil.

News and Notes

Keeping crewmembers informed...

INTRODUCING "COMMANDER'S CORNER"

The Chief of Staff, Army (CSA), recently mandated several initiatives to help leaders in the field manage risk as they fight the Global War on Terrorism and simultaneously transform our Army. In accordance with the CSA's goal, the Army Combat Readiness Center (CRC) recently established a "Commander's Corner" page on its Web site to assist all levels of leadership in developing strong safety programs. The power of this Web site is its easy navigation to Composite Risk Management (CRM) training, programs, and tools including ASMIS-2 POV, an online planning program that pairs supervisors and subordinates in the risk management process for POV trips. You'll also find information covering quantifiable safety metrics for the DA 67-9-1; digital accident and loss reporting tools; and links to our hard-hitting safety publications, *Countermeasure, Flightfax, and ImpaX*. The site can be accessed online at **https://crc.army.mil/commanderscorner/index.html.** Two new "Commander's Corner" additions under the "Toolbox" tab are the "CRM Interactive Worksheet Tool" and "Commander's Toolbox" links. The worksheet provides step-by-step guidance for leaders conducting CRM, while the toolbox contains reference materials for every leader and safety professional. Both items also can be found in the "New Tools" section on the CRC homepage at **https://crc.army.mil.**

Anyone with questions regarding this column may contact the editor at DSN 558-9855 (334-255-9855), or by e-mail at flightfax@crc.army.mil.

2006 ALSE USER'S CONFERENCE

The Aviation Life Support Equipment (ALSE) User's Conference is scheduled for **22-24 August 2006 at the Holiday Inn Select in Huntsville, AL.** Commanders, ALSE officers and technicians, unit safety officers, and other interested personnel are invited to attend.

A block of rooms has been reserved at the Holiday Inn Select at Huntsville's per diem rate. Call them directly to make reservations at (256) 533-1400 and mention the conference to obtain the per diem rate.

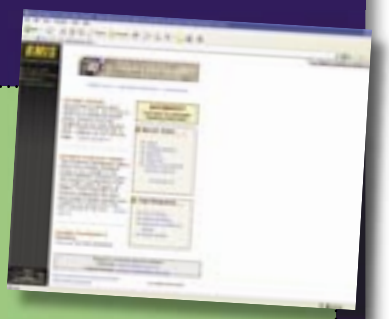
For conference registration, contact Melanie Barksdale at melanie.barksdale@peoavn.redstone.army.mil. For more information on the conference, contact William Grubbs at William.B.Grubbs@us.army.mil or John Jolly at John.Jolly@peoavn.redstone.army.mil.

CORRECTION

Thanks for catching the error on the UC-35 in our April accident briefs. We've received several comments so far. We certainly goofed! It was supposed to be categorized as an AH-64D. We're sorry for the mistake.

In the May Flightfax, we mentioned the only radios authorized by the Army are the PRC-112, PRC-112C, and PRC-112D. We failed to mention the CSEL radios are also authorized.

NEW FEATURE LOCATED ON RMIS



Did you know the Army Combat Readiness Center (CRC) posts all Centralized Accident Investigation information on the Risk Management Information System (RMIS) Web site for your use in accident prevention purposes? The CRC believes education is the key to accident prevention, thus we have provided this valuable information in electronic format to speed the flow of communication to every level of your organization.

The information is intended as a briefing tool at the unit level to educate personnel on mission hazards, associated risks, lessons learned, and control measures to prevent recurrence.

The RMIS Web site is **https://rmis.army.mil/rmis/asmis.main1.** You must have an AKO username and password to access the RMIS site. To retrieve accident data, click on "ACCIDENT OVERVIEW" on the left-hand side of the screen, then click "PRELIMINARY ACCIDENT REPORT," and then click on "AVIATION or GROUND," depending on the type of data you want. You will need to "accept conditions" to go any further. At this stage, you can view accident data, such as executive summaries, history, findings and recommendations, and downloadable vignettes with hazards and controls.

–For more information, contact the author at DSN 558-9855 (334-255-9855) or by e-mail at paula.allman@crc.army.mil.

LITEfax What Were They Thinking?

CHRIS FRAZIER
STAFF WRITER/EDITOR

They say you can't teach an old dog new tricks; however, sometimes the old tricks still give the dog problems. Here are some mishaps that occurred to a couple of folks who have probably done the same thing a dozen times before without incident. But as we all know, it only takes one time for everything to go wrong and for you to end up the subject of your very own Litefax.

OUT THE WINDOW

There are few things that make driving more hazardous than a foggy windshield. Add to that the fact you're cruising about 400 feet above the ground at 100 KIAS, and the situation gets a little more dangerous. Such was the case for the pilot in our first tale.

While on final approach to landing, the windshield of the pilot's CASA-212 fogged over. To help clear off the fog, the pilot decided he would open his window. Unfortunately, the ensuing vacuum effect sucked the sunshade out the window, sending it through the No. 1 propeller. The sunshade damaged the engine oil cooler intake and airframe sheet metal. Luckily, the propeller wasn't damaged.

Investigators determined the pilot failed to ensure the sunshade was secure before opening the window. The sunshade's design requires the pilot to turn a knob to lock it into the desired position. However, the locked and secured position cannot be confirmed visually. It was recommended the CASA Program Manager add a paragraph to the flight manual addressing cockpit window operation and warn pilots of the potential for unsecured objects to exit the window. Local control measures were also implemented in an effort to avoid repeating the accident.

LOOK OUT BELOW!

While conducting high-altitude parachute operations in an MH-60K, the jumpmaster accidentally sent part of the aircraft hurtling instead of his Soldiers. The jumpmaster inadvertently pulled the cargo door window emergency release handle, causing the left-side cargo door windows to jettison from the aircraft.

Once free from the aircraft, the windows struck two main rotor blades, a tail rotor blade, and the left horizontal stabilator, forcing the pilot to conduct a precautionary landing. The damage to the aircraft was discovered on postflight inspection by a technical inspector. Afterward, the aircraft was cleared for a one-time flight back to the airfield, where it was repaired and returned to service.

According to accident investigators, the door-opening procedures were discussed prior to jump operations. However, when the jumpmaster attempted to open the left cargo door with his right hand, he accidentally pulled the window jettison handle with his left hand, sending the cargo door windows on their way.

Investigators recommended hands-on exercises be incorporated into the accident briefing to ensure poor door opening techniques do not contribute to another inadvertent jettisoning incident. Hopefully next time the Soldiers will actually get their chance to jump.

–Contact the author at DSN 558-2287 (334-255-2287), or by e-mail at christopher.frazier@crc.army.mil. For more information on how to submit a story to Litefax, send an e-mail to flightfax@crc.army.mil.

Accident Briefs

Information based on preliminary reports of aircraft accidents

Class A

MH-60
K Model
• Class A: Solider suffered fatal injuries after falling from the aircraft during flight. (Late report)

UH-60
L Model
• Class A: Soldier suffered fatal injuries after falling approximately 50 to 100 feet to the ground during a go-around for landing. The aircraft door had been opened in preparation for passenger exit.

AH-64

D Model

• **Class E:** While performing a recon and security mission, the Master Caution light illuminated and a Gearbox Temp message was displayed in the upfront display. The aircraft returned to the forward operating base (FOB), and upon landing, the Gearbox Temp message and Master Caution light turned off. The tail rotor gearbox and associated wires were inspected and no problems were found. A maintenance operational check (MOC) was performed, and the problem could not be duplicated. The aircraft was then returned to fully mission capable status.

• **Class E:** After takeoff, the aircraft radar altimeter failed. The crew returned the aircraft to the airfield without further incident. Maintenance personnel ran an initiated built-in test on the aircraft altimeter and no faults were found. An MOC was performed, and the problem could not be duplicated. The aircraft was released for flight.

• **Class E:** During an inbound run, the crew heard a loud bang and the left pedal went full travel left. The crew proceeded to the FOB and conducted a roll-on landing. The maintenance test pilot determined the yaw magnetic brake was stuck. The brake was replaced. (Late report)

• **Class E:** Upon landing, the crew felt the aircraft tip left and noticed a burning rubber smell. The aircrew taxied to parking, and the aircraft was shut down without further incident. Maintenance replaced the left tire, and the aircraft was released for flight. (Late report)

CH-47

D Model

• **Class E:** While in flight, the aft transmission chip illuminated. The external load was landed and disconnected as soon as possible, and the crew flew the aircraft 8 minutes to a FOB. The chip detector was removed and several small chips were found in the screen. The transmission was replaced, and the aircraft was released for flight. (Late report)

• **Class E:** While at cruise flight at 110 knots, the forward transmission started to make loud, whining sounds. The oil pressure was above 100 PSIG. (Late report)

OH-58

A Model

• **Class E:** During cruise flight at 90 KIAS and 1,000 feet mean sea level, the Master Caution light illuminated with a corresponding DC GEN segment light. The emergency procedure was completed with continued illumination of the DC GEN segment and the amp meter reading 0. All non-essential electrical equipment was shut down, and the aircraft returned to home station. Upon postflight inspection, the outboard right-side starter/generator connection had broken off. Maintenance repaired the connection.

UH-60

A Model

• **Class E:** The auxiliary power unit (APU) was started several times in order to accomplish power-on checks. Unknown to the crew, the combustion section fuel drain was clogged. The APU failed to start, but fuel was not allowed to drain. Upon the next attempted start, residual fuel ignited and caused a fire. (Late report)

L Model

• **Class C:** Main rotor system suffered damage during landing when a piece of plywood blew up in the rotor wash.

• **Class C:** Main rotor blades contacted trees during ground taxi to parking.

• **Class E:** During cruise flight to an airfield, about 20 minutes after takeoff, the No. 1 fuel filter bypass caution light illuminated momentarily and extinguished. After departing the airfield, the caution light again began to flicker. Once the light became steady, the aircrew moved the No. 1 engine to crossfeed and continued to the airfield for aircraft swap. En route to the airfield, no unusual system indications were observed. The aircrew then swapped aircraft and completed the mission. (Late report)

C-12

D2 Model

• **Class E:** During a left bank, the pilot in command noticed fuel spilling from the tip of the left wing. The aircraft returned to the airfield, where maintenance personnel found both wing tip fuel check valves stuck in the open position. The check valves were cleaned out, and the aircraft returned to service.

• **Class E:** During engine runup checks for a service mission, the No.1 engine experienced stalls when the power or condition levers were advanced from low idle. The TGT power exceeded 800 °C. The aircraft was shut down after maintenance personnel verified the stalls. The compress bleed air valve was placed back in service.

T2 Model

• **Class B:** Upon touchdown, the left landing gear collapsed, resulting in damage to the left wing and the sudden stoppage of the left engine.

U Model

• **Class E:** After takeoff, the crew noticed the aircraft wanted to lift off before V1. They also noticed the flaps were at 80 percent with the flap switch in the up position. The crew requested to return to the airfield. Maintenance tested the l/h split flaps switch and they appeared to work. The crew returned to home base. Further maintenance checks revealed the wire to the l/h split flap switch was loose. The switch was replaced and the aircraft returned to flight.

UNMANNED AIRCRAFT SYSTEM

RQ-11

• Class C: Aerial vehicle (AV) operator lost control feed with the aircraft. The AV was never recovered.

• Class C: AV operator lost the video feed and link with the aircraft. The AV was never located and is deemed a total loss.

• Class C: AV experienced a motor malfunction during flight and crashed. Attempts to recover the aircraft were unsuccessful.

• Class C: AV operators lost video feed and link with the aircraft during flight. Efforts to locate the AV's landing site were unsuccessful.

• Class C: AV operator lost contact/control with the aircraft during a recon flight to locate a previously lost AV. Attempts to locate the AV were unsuccessful.

RQ-7A

• Class C: AV experienced engine failure upon takeoff and glided off the runway. The aircraft came to a rest in an adjacent field.

RQ-7B

• Class C: Crew lost control feed with the AV and attempted to re-establish contact until fuel starvation occurred. The recovery chute was deployed, and the aircraft was recovered.

• Class C: AV experienced ignition and subsequent generator failure during flight. The AV operator deployed the recovery chute, and the aircraft was recovered.

• Class C: AV failed to gain altitude during the launch sequence and glided back to the ground. The aircraft suffered damage to the landing gear and servo, and the propeller and payload separated.

ARMY AIRCRAFT LOSSES FY02 TO PRESENT*

	HOSTILE/NON-HOSTILE	COST
AH-64A/D.....	7/41	$1.005B
U/MH-60L.....	6/20	$178.2M
C/MH-47.....	5/12	$594.1M
OH-58D.....	8/21	$181.2M
Total	26/94	

*As of 16 May 06

Editor's note: Information published in this section is based on preliminary mishap reports submitted by units and is subject to change. For more information on selected accident briefs, contact the CRC Help Desk at DSN 558-1390 (334-255-1390) or by e-mail at helpdesk@crc.army.mil.

Announce Actions

It is standard
to announce your actions within a cockpit,

but you should also announce your
actions to the entire flight.

Never
assume
what
someone
else is
going
to do in
another
cockpit!

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