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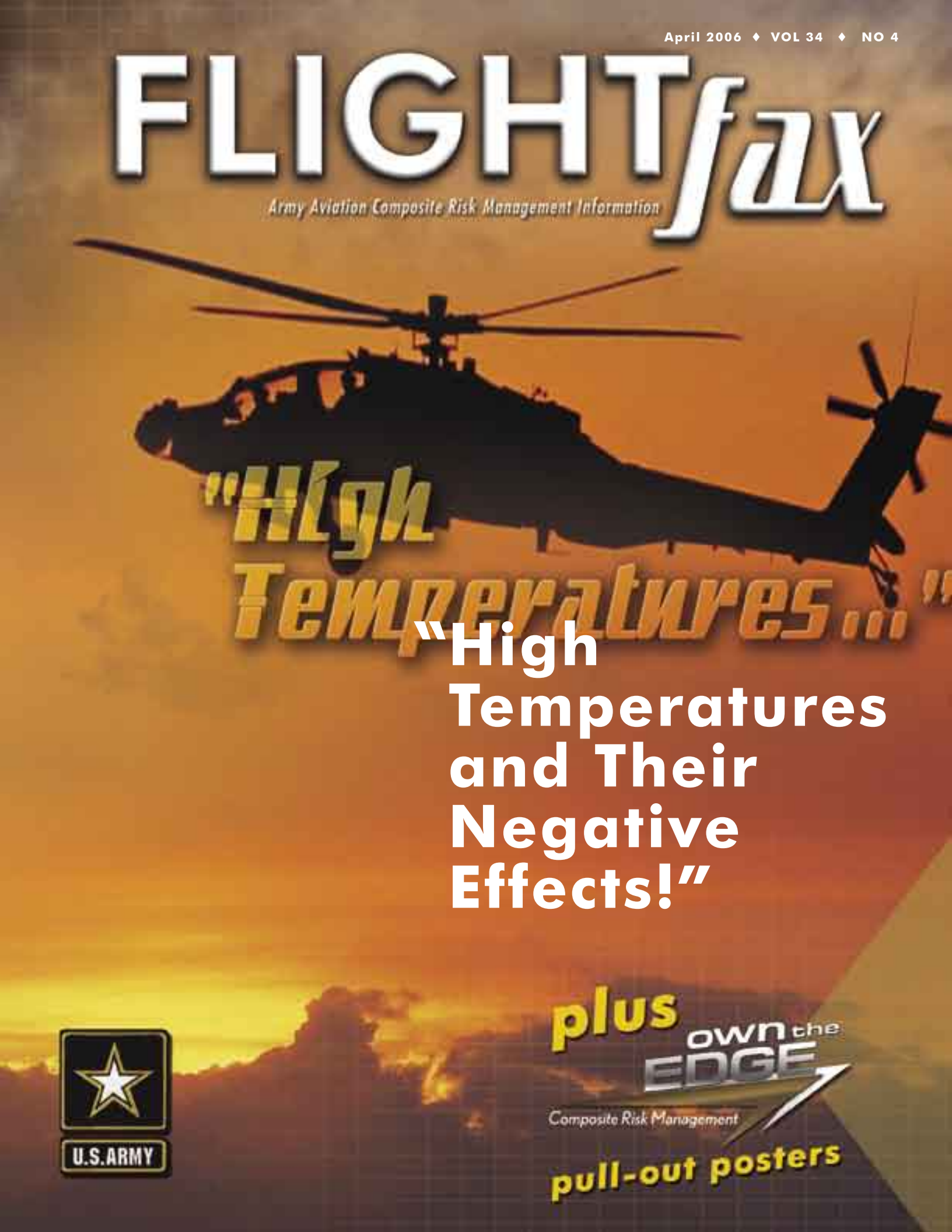
FLIGHTfax

Army Aviation Composite Risk Management Information



"High Temperatures and Their Negative Effects!"

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FLIGHTfax

Army Aviation Composite Risk Management Information

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

High Temperatu

CW4 DANIEL N. CRAMER
D COMPANY, 2-52ND AVIATION
APO AP 96271

Virtually every area of the world in which the Army can be expected to operate will have temperatures high enough to significantly impact the way Army Aviation performs its mission. High temperatures negatively affect aircraft performance, engines, and aircrews. Fortunately, high temperatures are not likely to spring up unexpectedly like an afternoon thunderstorm, however temperatures will have an impact over an extended time and wide area. Why do high air temperatures affect the performance of aircraft?

Charles' Law states the volume of a fixed mass of gas at a constant pressure is directly proportional to its absolute temperature. So as the temperature of a gas increases, its volume will increase, as well.

Or put another way, $\frac{V_1}{T_1} = \frac{V_2}{T_2}$

Density is a measure of a mass divided by its volume, $\frac{\text{mass}}{V} = \rho$

res And Their Negative Effects

Working around equations, we find as temperature increases, volume increases and the density of the air will decrease. This is a simplified discussion of density altitude. With density in the numerator of the lift equation, the lower the density of air, the less lift produced by an airfoil. Rotary-wing aircraft compensate for the loss of lift by increasing the coefficient of lift or increasing the angle of attack. Higher angles of attack mean more power is required to maintain the rotor rpm. Bottom line: The higher the ambient air temperature, the more power it takes to keep an aircraft aloft, assuming there is no change in pressure. The hover charts from Chapter 7 of the aircraft's operator's manual confirm these generalizations. Higher temperatures mean more power is required to do the same job.

Another impact on the performance of an aircraft can be found in the way temperature affects engines. Turbine engines take ambient air, compress it, mix in some fuel, add a spark, and then harness the energy from the expanding exhaust gasses. The first step of the process is directly affected by air density and temperature of the ambient air that is introduced into the compressor. The power available charts from Chapter 7 of the aircraft's operator's manual demonstrate the decrease in available power as the temperature increases. This means as temperature increases, the power needed to produce the same lift is increasing at the same time the engines are producing less power.

Mission ranges and available payloads can be expected to decrease as the temperature increases. For example, a CH-47's fuel flow and mission range will decrease 7 percent, with a change in temperature from 15 to 35 ºC. It may be necessary to plan missions in cooler parts of the morning, or at night, to complete missions that require especially long routes or high payloads.

High temperatures not only affect aircraft performance, they also affect crews. High temperatures make crewmembers sweat more, which can easily lead to dehydration. The effects of even mild dehydration include decreased coordination, fatigue, and impaired judgment–none of which are welcome in the cockpit.

Normally, the average person loses four liters of fluids per day, which is generally replaced by the fluids we drink and foods we eat. Exercise, sweating, diarrhea, temperature, or altitude can significantly increase the amount of daily fluids we need. The most common cause of increased fluid loss is exercise and sweating. For aircrew members, fluids can be lost by just sitting in a hot cockpit. A 2-percent loss in body weight to dehydration will cause a significant loss of performance.

For a 200-pound crewmember, that equates to about two liters of water a day. The average adult loses about 0.7 percent of sweat per day, but sweat loss can be as much as 2.5 liters per hour—far more than the amount that causes a loss of performance.

As crewmembers operate aircraft on long missions, they need to hydrate to replace these fluids lost through sweat. On long missions, crew relief may become another problem, one that will be exacerbated by the extra fluids consumed in hot weather. Utility and cargo aircraft with auxiliary fuel tanks can fly missions up to 6 hours, and aircraft with aerial refueling capabilities can fly even longer. Multiple trips through the forward arming and refueling point during long operations even further decrease crew opportunities to relieve themselves. All types of aircrews can encounter this problem, and commanders need to plan ahead for this.

Crewmembers can also be at risk from burns caused by coming in contact with heated metal during maintenance, inspections, or servicing. Wearing gloves during preflight and maintenance work can be a real benefit when outside temperatures are 35 ºC in the shade and the aircraft has been baking in the sun all day. Long sleeves also may be needed to work on aircraft that have hot metal panels or exhaust shrouds.

Additionally, the degree of heat inside the aircraft can exceed temperatures that will degrade the performance of, or even damage, avionics components. Opening aircraft windows and doors to allow ventilation or placing shades over the glass areas can significantly reduce temperatures inside. Rapid temperature changes, which occur in desert environments between day and night, are conducive to the formation of condensation. This condensation can cause corrosion, water accumulation, and fungal growth in partially-filled fuel tanks. Other maintenance concerns for hot weather include distortion of seals, softening of fiberglass and plastics, and breakdown of lubricants.

Hot weather environments are common in today's operations and require extra caution and planning from aircrews and maintenance personnel. Additional information can be found in Field Manual (FM) 3-04.202(1-202), *Environmental Flight,* 23 February 1983, and FM 3-04.203(1-203), *Fundamentals of Flight,* 3 October 1988. The following Web site is a good reference for comprehensive information on heat injury and prevention: **http://usachppm.apgea.army.mil/heat.** ♦

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Investigator's Forum

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

"HEY, SIR, WHAT ARE YOU DOING?"

ACCIDENT INVESTIGATION DIVISION
U.S. ARMY COMBAT READINESS CENTER

Officers: Have you ever had an NCO ask you this question? And you replied, "Don't worry, I got it." Chances are that NCO was trying to tell you something, maybe even trying to offer some assistance. Teaming with NCOs seems like a fundamental practice all officers should follow, but recent accidents indicate some officers are attempting to do tasks traditionally accomplished by NCOs. The most recent of these accidents illustrate what can happen when an officer attempts to "do it all."

A recent accident investigation revealed the company commander was simultaneously attempting to perform range officer-in-charge, range safety officer, and observer/controller duties for a live-fire training exercise. His divided attention resulted in several procedure violations. One of those violations was a failure to ensure the actual range safety officer had verified all weapons were clear before departing the range for the assembly area. As a result, one weapon was carried back to the assembly area with one live round remaining in the chamber. Later that day, the weapon was improperly handled and a Soldier was fatally injured.

Although the company commander did not personally carry the weapon off the range, the Centralized Accident Board determined his actions contributed to the accident. While every Soldier has the responsibility to clear his weapon before departing the range, had the commander teamed with his NCOs in three distinct areas—division of duties, planning, and Composite Risk Management (CRM)—this accident might have been prevented.

NCOs x (Duties + Planning + CRM) = Combat Readiness

Effective teaming between officers and NCOs allows an efficient and effective division of duties, which allows everyone to place the correct amount of attention toward their administrative, procedural, and leadership activities. Empowering NCOs with authority commensurate with these duties is essential. This allows the NCOs to become stakeholders in the unit's performance.

Effective teaming with NCOs also requires involving them in planning processes. Experienced NCOs can contribute immensely during the planning of any operation, from a weapons qualification range to a complicated squad or platoon live-fire maneuver lane to combat operations. Your NCOs will bring a priceless gift to the planning table—experience! On average, NCOs at the company level have between 4 and 5 years more time in service than company grade officers. Officers must allow NCOs to fulfill their roles in the training plan and must enforce standards through those NCOs.

Lastly, effective teaming with NCOs involves their participation in the CRM process. NCOs have a unique perspective and can therefore see things officers often overlook. NCOs can validate tactical hazards and controls, as well as greatly assist in the identification of accidental hazards and development of relevant and actionable controls.

Conclusion

Even though we, as officers, like to think we can do it all, we cannot. Your NCOs don't just prepare promotion packets and grade Army physical fitness tests. Empower them as leaders and involve them in the planning and execution of training. Their involvement will enhance training value, ensure adherence to standards, and add to your unit's readiness. Finally, involve your NCOs and rely on their experience while applying the CRM process. Their involvement will make the process real and will demonstrate to junior Soldiers CRM is worth doing. ♦

–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.

The Cockpit is No

ANONYMOUS

When in the field, I always relished the chance to go back to the rear for a night of sleep. On this particular day, however, falling asleep was the last thing I wanted to do.

When selected for a prestigious mission while stationed at Fort Campbell, KY, I jumped at the chance. I was to fly an aircraft with our company maintenance test pilot (MTP) back to Campbell Army Airfield (CAAF) so unit armament repairers could replace a part. The next day we were to fly the aircraft back to the field and take part in a mission that night.

The MTP and I flew the aircraft to CAAF and left the aircraft for maintenance. All I could think about was getting home to take a shower and get a good meal. I was briefed to come back into work the following day at noon. I showed up at the airfield on time the next day but, as usual, there was a maintenance delay, so we waited. I knew we had a mission that night, but I didn't know the specifics.

We arrived back at the field site around 1700 and received a short brief for the mission. The scheduled mission brief had already taken place. We would be supporting an infantry unit after an air assault security mission. Scheduled mission completion time was midnight.

I WAS TO FLY FRONT SEAT IN AN AH-64 WITH AN EXPERIENCED BACK-SEATER. NO PROBLEM; WE HAD PRACTICED SIMILAR MISSIONS AT FORT CAMPBELL UNTIL WE COULD CONDUCT THEM IN OUR SLEEP. IT'S A GOOD THING, TOO, BECAUSE THAT'S EXACTLY WHAT HAPPENED.

I was to fly front seat in an AH-64 with an experienced back-seater. No problem; we had practiced similar missions at Fort Campbell until we could conduct them in our sleep. It's a good thing, too, because that's exactly what happened.

The mission launched as scheduled, but the infantry wasn't on station at the appointed time. A delay with the air assault is never a good thing when the length of the duty day is in question. The infantry finally arrived and we made contact with them, but they did not have a notional enemy as of yet, so we stayed at a hover waiting.

As we waited, boredom set in. I scanned with the target acquisition designation sight (TADS)—trying to find anything of interest—until my thumb was sore. The end of the mission was approaching quickly, and the infantry we were supporting was finally situated and in need of our assistance locating and identifying the enemy. The infantry requested assistance from our company for an undetermined amount of time past the scheduled completion time, which happened to coincide with the official end of my flying duty day. The pilot in command (PC) was within his own duty day limitation because he had spent the

Place to Sleep

night in the field and started duty well after I did. However, I didn't consider that my duty day was coming to an end because it always coincided with everyone else's duty day. A rookie mistake, I know, but such mistakes happen.

I was tired, but I didn't know the extent of my fatigue until I caught myself doing the jello-neck head bob in the cockpit. I told the back-seater about falling asleep, and he said he knew because he had been watching my head tracker bob up and down as I fell in and out of consciousness. This should have been our first indication we should land or fly back to the assembly area. We didn't, nor did we discuss the need to. I tried to keep myself awake while the PC kept us at a hover, but I fell into a full sleep right before our company broke station to return to the assembly area. I think I was awakened by the radio call to break station. I entered the waypoint into the Doppler, and we joined the flight to form up and head back to the assembly area.

I WAS TIRED, BUT I DIDN'T KNOW THE EXTENT OF MY FATIGUE UNTIL I CAUGHT MYSELF DOING THE JELLO-NECK HEAD BOB IN THE COCKPIT. I TOLD THE BACK-SEATER ABOUT FALLING ASLEEP, AND HE SAID HE KNEW BECAUSE HE HAD BEEN WATCHING MY HEAD TRACKER BOB UP AND DOWN AS I FELL IN AND OUT OF CONSCIOUSNESS.

The PC and I spoke of that night a few times after the mission. It was always in a joking manner or to start a "there I was" story. We never did a crew after-action report, but we should have—given the fact that part of the night I was not capable of acting as a crewmember.

Lessons learned

Since that night, I've become a PC and flown many missions and many hours; but I've never forgotten that night. I learned a valuable lesson. I now evaluate my fatigue level well before a mission is to launch; I take precautions to make sure I've had the proper rest; and I try to fly all missions in the first two-thirds of my duty day and consider the last third as time to give myself an extension before I have to ask the commander for one.

I'm no longer ashamed to say when I'm too tired to take an extension. Fatigue in the cockpit is a risk that can't be mitigated with coffee or an instant energy drink. It can only be mitigated with the proper rest cycle. ♦

–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.

Quick Decisions,

ANONYMOUS

As Army Aviators, we strive to prepare ourselves for any emergency situation we may encounter. A lot of hours are spent in the aircraft practicing emergencies to the extent regulations allow. We study Chapters 5 and 9 of our operator's manuals and spend hours in our respective simulators practicing emergency procedures and scenarios. Many of us reach a level of confidence that makes us think we can handle just about anything. Combine that confidence with the good fortune of never experiencing a serious emergency, and your guard may slip a little.

Flight simulators are great tools for emergency procedures and mission training. However, after a while, the simulator can become routine—if you let it. In the back of your mind, you know you can't get physically hurt. How many dual-engine or tail rotor failures have you performed in the "box" and walked away? Do you treat emergencies in the simulator with the same intensity you would in the aircraft? It's too bad a flight simulator can't give you that shot of adrenalin when an actual emergency situation occurs. That extra jolt adds another aspect to your decision-making process. Here's my story:

The mission was a day, live-fire exercise in support of U.S. Air Force A-10s conducting graduate instructor pilot training for their Joint Air Attack Team (JAAT) phase. The original plan called for two sorties of two Apaches, each providing attack helicopter support against an armored column and surface-to-air missile threats. Our aircraft was scheduled to be part of the first sortie, but due to maintenance problems, we were unable to make the first turn.

Maintenance repaired the aircraft, and we joined the second flight to get some valid training. The mission brief had been conducted earlier in the day. Since we were originally scheduled for the first mission, we hadn't put emphasis on the second mission portion of the brief. My commander and I thought this wouldn't be a problem because it was a day mission and we had already flown parts of the range earlier in the week.

We completed the brief with the second flight, ran up, and departed on time as Chalk 3. Because of his previous JAAT experience, my commander was the air mission commander (AMC). We were armed with white phosphorus rockets but no 30mm ammunition.

As we entered the range, we received a call from the Air Force instructor that we were shifting engagement areas and targets due to range issues. There just went a large part of pre-mission planning. We received the updated

Quick Mistakes

mission data and pressed on. It was a longer flight than originally planned, so fuel management was critical. When we arrived at our firing position, the radios were already busy. The A-10s were ready. We also talked to the ground forward air controller, and simulated artillery to expedite getting set in our firing position. The AMC in the front seat received a situation report, and we began to run the mission. Because of the sense of urgency, I didn't take the time to do a proper assessment of our firing position (maneuvering altitude, fly away plan, etc.) and brief the front-seater. I was too focused on acquiring targets, looking for the A-10s, and trying to help the AMC. The A-10s made their runs as we engaged our targets, covering their egress.

About 10 minutes into the engagement, I heard two loud reports at the rear of the aircraft and thought I felt a vibration in the flight controls. I started to ask the front seat if he had heard the noise when he cut me off. He shouted, "That's us, that's us!" I guess he heard the same thing. I immediately nosed the aircraft over to establish forward flight. I then asked myself, "Where am I going?" Here comes the adrenalin. We had two Apaches firing rockets on our right, A-10s to our front ingressing and egressing from the left and right, and our firing position was backed up against some tall hills behind us and immediately to our left. We still had no idea what was wrong with our aircraft.

I quickly decided I was going to land. I let my front seat know of my intentions, picked a landing spot off the nose of the aircraft, and shot a quick approach. But our airspeed was too fast for the approach. On top of that, I had hastily misread the terrain. We landed *firmly* at about a 45-degree angle to down-sloping terrain, running left to right. After a considerable amount of ground run, I was able to bring the aircraft to a stop. The postflight inspection revealed no damage, and maintenance was unable to find or duplicate what had happened. It had to be luck because it wasn't skill or precision that got us safely on the ground.

As we headed back to the airfield, I replayed what had happened, my actions, and what I could have or should have done to minimize the risks to the hazards we encountered. The list was long. The most important point was I *allowed* the mission changes, compressed timeline, sense of urgency, and other distractions to prioritize my adherence to procedures and standards. The whole sequence of events could have been a lot less intense if I would've stuck to the standards, regardless of the situation. Like I said before—we were lucky. No one was injured (physically) and the aircraft was OK. I got another chance. My boss and I are still flying, and I always try to apply what I learned that day. The scenarios in the "box" are no longer routine or repetitive. Simulators are unpredictable but realistically challenging. You're definitely going to get that shot of adrenalin with in-flight last-minute changes; but that's OK, I really don't need another one. ♦

–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.

IIMC is a Killer.

CW5 KENNETH D. ROACH
CONNECTICUT ARMY NATIONAL GUARD

Commanders, safety officers, and unit instructor pilots have a lot on their plates with our current operations tempo. But we can't overlook or treat lightly a task every aviator is supposed to be trained and tested on. Inadvertent instrument meteorological conditions (IIMC) is a killer. Just take a look at the following selection of accident reports from the U.S. Army Combat Readiness Center's files.

• At 0615, Aircraft No. 1 departed to the northeast, turned to a heading of 270 degrees, and started climbing. Approximately 5 minutes later, Aircraft No. 2 departed in the same direction. Aircraft No. 2 called for clearance and was told to stay north of the 94 east-west gridline. Aircraft No. 1 reported to Aircraft No. 2 the base of the clouds was 1,200 feet, and his heading was 260 degrees.

Aircraft No. 2 joined up with Aircraft No. 1 and continued to fly in formation until instrument meteorological conditions (IMC) were encountered. Aircraft No. 2 lost sight of Aircraft No. 1. Aircraft No. 2 slowed and started to descend and intermittently saw Aircraft No. 1 as he was descending through broken to overcast clouds. At this time, Aircraft No. 2 asked Aircraft No. 1 if he had filed with air traffic control (ATC), and he stated he had not. Aircraft No. 2 told him he would file for both of them. This was the last conversation that took place between the two aircraft. Aircraft No. 2 had to descend to approximately 100 feet to remain under visual flight rules (VFR).

Aircraft No. 2 sighted Aircraft No. 1 when bright sparks or flashes appeared suddenly below Aircraft No. 1 as it struck the half-inch steel cables supporting the power lines 80 feet above the ground. After striking the power line, the aircraft immediately crashed to the ground, erupting in flames in an inverted, slightly nose-down position.

• At approximately 2040, company operations was alerted for a flare mission, and the crew scrambled. After liftoff, the flareship proceeded to a fire support base under radar control. At the fire support base, the flareship, working in conjunction with a reconnaissance aircraft, orbited for about 15 to 20

..Then and Now

minutes. Because of a delay in the planned artillery support, plus the fact the other aircraft was getting low on fuel, both aircraft returned to refuel. After refueling, the aircraft returned to orbit over the fire support base at approximately 2130. Both aircraft continued to orbit in this manner for about 15 minutes. After the artillery ceased firing, the other aircraft continued with its reconnaissance mission. Shortly thereafter, the flare drop mission commenced. The aircraft commander lost control of his flareship due to a sudden heavy rain shower that cut visibility to almost zero. The flareship crashed at approximately 2204.

• The unit received a call that one of their aircraft was missing in marginal weather. In bad weather, two aircraft commenced the search and rescue operation. At approximately 2200, the second aircraft in the search and rescue operation reported he saw the first aircraft heading south with its landing, search, and position lights on. ATC reported at 2220 the first aircraft reported his position. This was the last known radio contact with the first aircraft. At approximately 2245, a search and rescue operation was begun for the crew of the first aircraft. At approximately 0600 the next morning, search and rescue aircraft found the wreckage of the first aircraft. The time of the aircraft crash is unknown, but its fuel exhaustion time was calculated at between 2300 and 2315.

These excerpts from fatal aircraft accident reports do not come from either Operations Enduring Freedom or Iraqi Freedom. They are actually weather-related accidents from the Vietnam War. IIMC was a killer then just as it is today.

A unit standard operating procedure (SOP) that has appropriate guidance and *procedures* for the area in which flight operations are conducted must be developed and strictly followed. A proper risk assessment with appropriate mitigation controls may reduce the likelihood of encountering IIMC.

Commanders and operations officers must always consider crew experience when assigning aviators to a mission in which weather is a factor. But only through thorough and consistent training can we prepare for IIMC. The unexpected transition from visual meteorological conditions to IMC is one of the most difficult tasks we face in aviation. ♦

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PPE Can Be Your Best

CW4 JACK TALBOT
CALIFORNIA ARMY NATIONAL GUARD

It was another day at landing zone (LZ) English, much like all other days in Vietnam—hot, humid, rainy, and "fun filled." A few weeks earlier, I had severely scratched my helmet visor and hadn't taken the time to get a new one. As usual, there is a battlefield expedient for everything, and as a typical W01, I grabbed my trusty aviator sunglasses and pressed on. After all, aviators have to look the part.

After a day of flying, I headed to operations to complete the postflight paperwork. While talking to another pilot, the subject of survival equipment and personal protective equipment (PPE) came up. Somehow the matter of my scratched visor was mentioned, and he suggested I go over to the aviation life support equipment (ALSE) shop and have a new smoke-shaded visor installed. As usual, procrastination set in and I successfully put off the new visor for a couple more days.

I was finally able to get to the ALSE shop and had the new visor installed. After being instructed about the "proper care and feeding" of the visor and the long overdue replacement of the ear cups, I headed back to the hooch to pick up the rest of my gear and then down to the flight line.

Once at the flight line, I briefed the crew about our upcoming "simple" mission. We were to lead another "slick" into a dropoff point that was only about four or five "clicks" south of LZ English. Since the area was so close to the LZ, we wouldn't need gunship support. However, if something were to happen, we could radio back to operations for the 5-minute standby birds to respond. All we had to do was drop off a load of troops, loiter for an hour while they swept a village, come back in and pick them up, and return to LZ English. Refueling was unnecessary, as the length of flight time was scheduled to leave a large fuel reserve.

The pickup was a piece of cake, as the 16 troops walked over to the flight line, carrying only the minimum of equipment. We cranked, ran up, checked the radios, loaded the troops, and contacted the tower. English tower cleared the flight for a south takeoff. I asked the tower if I could flight follow since we were so close, and they approved. We headed to a grassy field just outside the village, staying just above the trees, and landed in a staggered right formation. The landing was uneventful.

Trail reported the troops were clear of the aircraft and were in a prone position around the two aircraft. I responded we would pull pitch in 5 seconds. All went as planned and we headed toward the coast to practice formation flying for about an hour. The weather was great—clear skies and little wind. I pulled down my new visor and went on with flight lead duties. Again, all went as briefed for an hour, and then we headed back to the pickup zone (PZ). En route we called the ground unit for smoke at our command. They reported all was quiet, no contact had been made, and they were ready for extraction.

As we approached the PZ, my copilot called for smoke. I radioed Chalk 2 and told him the LZ was cold but to be prepared for anything. We set up for a staggered right approach since the same formation worked so well on the insertion. On the way in, I noticed a depression—almost a ditch—that was about 75 meters to our 12 o'clock. It had a lot of bushes in it and didn't really look like much, so we continued with the approach. As we touched down, trail reported we had two birds safely on the ground.

At this point, the "fun" began. The troops were lined up to the right of the aircraft in a small tree line, just standing around and not really ready for a well-executed extraction. As the first troops began to climb

Friend If Used Properly

into the two aircraft, the bushes in the ditch began to break and pop, followed immediately by the crew chief hollering into the intercom that we were receiving fire. Instantly, he returned fire with his "60." The troops that were already onboard also began to return fire, as well as the other aircraft.

It was at this point the crew chief, whose foot had never left the intercom footswitch, explained (graphically) we were getting badly shot up. Suddenly, the door gunner yelled that the Soldier behind me had been severely hit. As we were counting troops, a round came through the windshield and exited the aircraft through the open cargo door, spraying me with lots of plastic.

Once all troops onboard were accounted for, we yanked all the pitch that we could muster and headed back to LZ English, calling operations and telling them what had happened. As we expedited back to the MEDEVAC pad with wounded onboard, I realized I couldn't see very well. Everything was blurred and distorted.

After landing, we got our wounded Soldier into the medical shack and looked at our "well-ventilated" helicopter. Maintenance also looked it over and cleared us for a one-time flight back to the helipad. I pulled down the new visor as we started the engine and still couldn't see well, so I pushed it up, flew to the helipad, and landed.

As we got out of the helicopter, I took off the helmet and looked at the visor. It was all scarred and pitted with windshield Plexiglas. That visor had saved me—and probably my eyesight—from serious injury. I realized there was a real need to be prepared for the unknown and to keep my gear in top condition. Had I procrastinated even longer, I could have easily become another casualty, a blind one!

Lessons learned—if you don't have proper PPE, GET IT! If you do have proper PPE, WEAR IT! Above all, always MAINTAIN IT! After all, a simple piece of plastic visor saved my eyes—only because I used it as it was intended. ♦

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Crew Coordination: From the MISSION BRIEF to the CHOW HALL

CW4 DAN POPPLETON
HEADQUARTERS AND HEADQUARTERS DETACHMENT
U.S. ARMY SECURITY AGENCY
APO AP 96297

What does crew coordination encompass and when does it begin or end? I had those questions answered for me while on a night vision goggle (NVG) flight in Iraq.

We had just taken off on a 4-hour NVG airfield security mission, and I was lead and pilot in command (PC) for two OH-58Ds. We were only weeks from going home, so to lower our risk of losing anyone to an accident, our company safety officer had, a few weeks earlier, coordinated for several training classes, including crew coordination.

Airfield security was a mission we had done hundreds of times before, but this time there were problems right from the start. As soon as we took off, one of the radios broke squelch and wouldn't stop. I couldn't understand my copilot or my wing man. Then, just seconds after we reached mission airspeed and altitude, we flew over a well-lit area that washed out our goggles. At this point, I felt I was experienced enough to recognize we were maneuvering into a classic accident situation. So, over the radio noise, I told my copilot, "You fix the radio, call OPS, and I'll fly the aircraft." I was unable to understand his response, but he gave me a thumbs-up.

Even though I was concentrating on basic flying, I realized I was rapidly getting behind the aircraft with the radio hissing, calls to make, and washed-out goggles. In all the confusion, I heard one word—wires! My wing had calmly and clearly transmitted that one word and, for whatever reason, it sliced through the interference. I didn't see any wires, but I immediately initiated a smooth climb at 500 feet per minute. A few moments later, the radios cleared up as we passed over a huge set of wires at about 50 feet above highest object. Fortunately, the rest of the mission went smoothly.

Hours later, while at the chow hall, I realized I had learned a valuable lesson. Even though there were 9,000 hours of total flight experience in both cockpits, during the close call, my wing was the only pilot flying. He recognized accidents are a chain of related events and broke the chain with one simple word. By doing so, he prevented what could have been two fatalities and a destroyed aircraft. Crew coordination had suddenly become much more than a required Army class.

So what does crew coordination encompass? It's for your aircraft, but it also extends to the other aircraft in the flight, the ground element, and air traffic control—among other things. And when does crew coordination begin and end? It starts at the mission brief and ends in the chow hall—a lesson I learned during a close call in Iraq. ♦

–The author may be contacted at daniel.r.poppleton@us.army.mil. CW4 Poppleton wrote this article while attending Aviation Safety Officer Course 06-001 at Fort Rucker, AL.

VCSA Sends:

Army Aviation Composite Risk Management and Simulater Mitigation

GENERAL RICHARD A. CODY
VICE CHIEF OF STAFF, ARMY

There is no question Army Aviators are gaining unprecedented flight experience as a result of preparation for and deployments in support of the Global War on Terrorism (GWOT). Our pilots and crewmembers have achieved unprecedented levels of tactical proficiency. However, the overall risk that stands between mission accomplishment and injury to aircrew or damage to aircraft is a composite risk from both tactical and accidental hazards. Combat missions naturally reinforce our respect for the tactical risks to crew and aircraft. Unfortunately, high operational tempo downrange and short dwell time in garrison make opportunities to gain experience on reacting to and mitigating accidental risk more fleeting. Regardless, accidental hazards exist on every mission, whether deployed or training to deploy.

I AM CONCERNED ARMY AVIATORS WILL FIND THEMSELVES TACTICALLY PROFICIENT IN COMBAT OPERATIONS AND VULNERABLE TO THE ACCIDENTAL RISKS THAT ARE EVEN MORE DEVASTATING.

I am concerned Army Aviators will find themselves tactically proficient in combat operations and vulnerable to the accidental risks that are even more devastating. Since Fiscal Year 2002, out of the 118 aircraft lost (about a combat aviation brigade's worth of helicopters), 94 (80 percent) were non-hostile, accidental losses. Our focus on accomplishing the mission cannot dismiss the accidental hazards present on every flight, in training or combat.

Aircrew training must be structured to mitigate all components of risk, especially those not practiced on daily combat operations in theater. Aircrews must develop their judgment, crew coordination, and flight skills under adverse weather and emergency procedure conditions. Our world-class simulators provide excellent opportunities for crewmembers to hone their skills and judgment under these challenging scenarios without injury to crew or damage to aircraft. During home station training periods where aircraft availability may be limited (due to reset, equipment deployment, or scheduled maintenance), simulators are an optimal training resource. Yet statistics show simulators are underutilized.

Commanders, continue to prepare your aircrews for GWOT deployments and all supporting mission sets. Train them with the skills to apply Composite Risk Management by mitigating both tactical and accidental hazards. Maximize the use of every training resource, including simulation, throughout all phases of the operation (preparation, deployment, employment, and recovery). By doing so, we will preserve the incredible aviation experience gained from combat operations and protect our aircrews and aircraft from the inherent risks of our profession. ♦

–Adapted from GEN Richard A. Cody's message to the field 22 February 2006. GEN Cody, an Army Aviator, became the 31st Vice Chief of Staff on 24 June 2004.

2005 AAAA

JAMES BULLINGER
EDITOR, ARMY AVIATION MAGAZINE

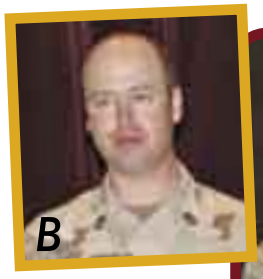
Congratulations to the 2005 Army Aviation Association of America (AAAA) national award winners. AAAA President BG (Ret) Thomas Konitzer and BG E.J. Sinclair, Commanding General of the Army Aviation Warfighting Center and Fort Rucker, joined with industry partners, association members, and many of the branch's senior commanders, chief warrant officers, and NCOs to honor this year's individual and unit winners.

The following Air Traffic Control (ATC) awards were sponsored by Raytheon Company and presented by BG (Ret) Rodney Wolfe.

• **ATC Company of the Year:** (*Photo A*) Company (Co) D, 1st Battalion (Bn), 58th Aviation (Avn) Regiment (Regt), Hunter Army Airfield, GA. Over the past year, the men and women of Co D successfully deployed their entire complement of assigned Soldiers and assets to Operation Iraqi Freedom (OIF)-III. They provided air traffic services (ATS) at the Washington Army Heliport in Baghdad and tower and ground controlled approach services at the Taji airfield under hostile and austere conditions. CPT Robert E. Bugner and 1SG David Ibsen, the commander and senior NCO, accepted the award.

• **ATC Facility of the Year:** (*Photo B*) Co D, 1st Bn, 58th Avn Regt, Simmons Army Airfield, Fort Bragg, NC. The Knights of Co D worked in Washington Army Heliport during OIF-III and were directly responsible for all air movements in the Baghdad international zone. Their exemplary service and dedication to duty ensured mission success of Baghdad Radio. Platoon Sergeant SFC Christopher D. Briggum, who is en route to Iraq, accepted the award on behalf of the facility.

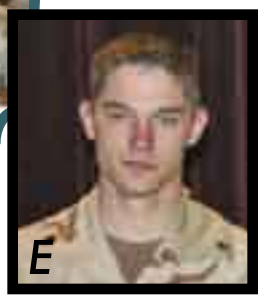
• **Air Traffic Maintenance Technician of the Year:** (*Photo C*) SSG Alina D. Smith, Co G, 58th Avn Regt, Combat Avn Brigade (CAB), 25th Infantry Division (ID) Light, Schofield Barracks, HI. As the communications and electronics section chief for Co G, SSG Smith was directly responsible for the swift and efficient reset of two ATS facilities and two beacons from combat operations in Afghanistan.



Through her maintenance management expertise, SSG Smith ensured all deployed equipment was fully mission capable and ready to support the 1st Bn, 25th Avn Regt. Her dedication and leadership set the standard for maintenance excellence.

• **ATC Manager of the Year:** (*Photo D*) SFC Michael D. Sutterfield, Co G, 58th Avn Regt, CAB, 25th ID, Schofield Barracks, HI. As the senior ATS liaison in the Combined-Joint Task Force 76 (CJTF-76) operations area in Afghanistan during Operation Enduring Freedom (OEF)-V, SFC Sutterfield directly ensured Co G's success. He served in many capacities as the airspace command and control (AC2) NCOIC in the CJTF-76 aviation cell, Army fixed-wing aircraft scheduler, and Co G first sergeant. SFC Sutterfield increased the services of the Salerno control tower, obtaining its Federal Aviation Administration certification and improved AC2 cell operations in the CJTF-76 Joint Operation Center.

• **Air Traffic Controller of the Year:** (*Photo E*) SPC Timothy A. Johnson, Co D, 1st Bn, 58th Avn Regt, Hunter Army Airfield, GA. While serving in OIF-III, SPC Johnson developed a training program that enabled 10 air traffic controllers to achieve their ATC ratings in minimal time.



SPC Johnson's teaching ability led to seven first-time tactical certifications on the tactical airspace integration system and greatly enhanced the overall mission success of Baghdad Radio and the Washington Army Heliport in Baghdad's international zone.

National Awards Presented

Aviation Trainer of the Year: (*Photo F*) CW4 John J. McCann, Headquarters Co, 3rd Bn, 3rd Avn Regt, CAB, 3rd ID, Fort Bragg, NC. CW4 McCann's innovative approach to training enabled his unit to sustain new equipment training, concurrent with combat operations, at an operational tempo that averaged 1,900 hours per month. He developed a sustainment gunnery program with techniques for target detection, tracking, and engagement. He also developed emergency procedures and standards of performance training using simulators to replicate routine and catastrophic system degradations as the result of battle damage. His efforts ensured aircrew confidence and proficiency to execute dynamic airmanship in support of ground operations. L3 Communications Link Simulation and Training sponsors this award, which was presented by MG (Ret) Walter Yates.

• **Army Aviation Medicine Award:** (*Photo G*) Dr. (CPT) Nicole C. Powell-Dundford, M.D., HHC, CAB, 25th ID, Wheeler Army Airfield, HI. CPT Powell-Dunford, as the Task Force Diamondhead flight surgeon, distinguished herself during deployment to OEF-V in Afghanistan. She provided care for over 1,000 Soldiers, Navy flight personnel, and coalition forces and served as a flight surgeon to Task Force Saber. On her return to Hawaii, CPT Powell-Dunford was instrumental in the successful medical preparation for the Pakistan earthquake relief effort. This Soldier-physician is truly the epitome of Army Aviation medicine. Gentex Corporation's Gerald L. Johnson presented the award.

• **Aviation Fixed-Wing Unit of the Year:** (*Photo H*) Co A, 249th Avn Regt, from the Oregon, Oklahoma, South Dakota, and Washington Army National Guard, Salem, OR. Alerted in November 2004, Co A, a theater aviation company, quickly mobilized its four C-23 Sherpa detachments in four states and deployed in less than 90 days to OIF-III. Using input from previously deployed C-23 units, Co A developed tactical flight tasks and techniques which are incorporated today into the C-23 aircrew training manual. Its eight C-23s flew over 5,200 accident-free hours while providing theater-wide transportation support to the Multinational Corps-Iraq. MAJ Devin Wickenhagen accepted the award from FlightSafety International representative Michael J. Carpon.

• **Army Aviation Air/Sea Rescue award:** (*Photo I*) Co C, 3rd Bn, 25th Avn Regt, CAB, 25th ID, Schofield Barracks, HI. The Dustoff crew from Co C (formerly the 68th Med Co (Air Ambulance)), performed a lifesaving mission 26 June 2005 during a training flight. They spotted three Afghan children being swept down a raging river in danger of drowning. Putting their own lives at risk in a hostile combat area and in deteriorating weather with high winds, the crew saved the children using the rescue hoist. Due to their actions, a local Afghan village was able to understand the positive things the United States and allied forces are doing for their country. The Dustoff crewmembers are CW2 James Gisclair, CW2 Nathan Scott, SGT Tyrone Jordan, and SPC Christopher Zimmerman. MAJ Peter Eberhardt, commander, and CW2 Gisclair accepted the award on behalf of the crew from Goodrich Hoist and Winch representative Roy Zavitz.

• **Military Academy and ROTC Aviation Cadet of the Year awards:** (*Photo J*) 2LT Jeffrey Bonheim was selected as the 2005 USMA Aviation Cadet of the Year and received his award last June at West Point, NY. The ROTC Cadet of the Year is 2LT Alex Bertelli, a magna cum laude graduate of Dayton University with a bachelor of science degree in business administration. He is also a Distinguished Military Graduate and a Marshall Award recipient. 2LT Bertelli is currently in Flight School XXI, OH-58D Kiowa Warrior track, at Fort Rucker. ♦

–Adapted from Army Aviation magazine. Army photos "D" and "F" by Jane Armstrong.

2005 PARKER AWARDS HONOR AVIATION'S BEST

JAMES BULLINGER
EDITOR, ARMY AVIATION MAGAZINE

▲ Overall Aviation Battalion & Combat Support Unit
LTC Johan Haraldsen and CSM David Perkins
Photo by Jane Armstrong

▲ Best Combat Unit
1SG Sean Henry and LTC Frank Muth
Photo by James Bullinger

▲ Best Combat Service Support Unit
LTC Robert Mitchell and CSM Brian Fahl
Photo by James Bullinger

▲ Best Table of Distribution & Allowances Unit
1SG Russell Yohn and LTC Christopher Carlile
Photo by James Bullinger

The best-of-the-best aviation battalions (Bn) were honored 1 February 2006 at Fort Rucker, AL. The 2005 LTG Ellis D. Parker Outstanding Aviation Unit winners were recognized at the annual awards luncheon held during the Aviation Senior Leaders' Conference. The Parker Awards recognize excellence in the areas of leadership, training, maintenance, and safety during the preceding fiscal year.

• **Top Unit and Best Combat Support Battalion:** 4th Bn, 3rd Aviation (Avn) Regiment (Regt), 3rd Infantry Division (ID), Taji, Iraq. The first assault helicopter battalion to transform and re-flag under the Army's transformation plan, the 4-3 Avn conducted a flawless 66-vehicle ground assault convoy over 640 kilometers of enemy-infested roadways from Kuwait to Baghdad without a single breakdown or incident. They conducted three historical events: executing the 3ID's first air assault in Iraq, the first-ever battalion-sized air assault, and the first air assault of the newly formed Iraqi army. They flew 15,000 combat hours, transporting over 65,000 souls, while maintaining a 100 percent mission launch and an 85 percent aircraft operational readiness (OR) rate. The 4-3 Soldiers drove nearly 50,000 miles without a single Class A, B, or C incident or accident and maintained a 98 percent ground equipment OR rate. LTC Johan C. Haraldsen and CSM David L. Perkins accepted the award.

• **Best Combat Battalion:** 1st Squadron, 17th Cavalry (Cav) Regt, 82nd Airborne Division, Samarra, Iraq. Flying more than 21,000 hours while maintaining an OR rate over 85 percent, the 1-17 Cav conducted combat aviation operations in direct support of ground maneuver units in Baghdad, Taji, Balad, Mosul, Samarra, Baqhuba, and Tikrit. They conducted six troop and squadron relief-in-place missions, completely moved twice after arriving in Kuwait, and established footprints in three separate locations. As the "first responder," they provided 24-hour reconnaissance and security to react to troops in contact, providing accurate and lethal fires in over 14 sustained engagements. Their implementation of "Pink" teams, combining the recon capabilities of the OH-58D with the large volume firepower of the AH-64 Apache, resulted in an overwhelming ability to find, fix, and destroy the enemy. LTC Frank M. Muth and 1SG Sean Henry accepted the award.

• **Best Combat Service Support Battalion:** 36th Medical (Med) Evacuation Bn, III Corps, Tikrit, Iraq. The 36th Med was responsible for a brigade-sized element of Soldiers, providing ground and air medical support over an area roughly two-thirds the size of Texas throughout the Iraqi theater of operations from 2004 to 2006. The battalion conducted 18,942 missions to evacuate 33,557 patients, often from the point-of-injury and at times under direct or indirect enemy fire. The 36th Med accomplished this by flying over 16,000 hours while also maintaining an 85 percent OR rate. The fact that the unit had no accident-related fatalities during their tour is evidence of the determined supervision of every leader in the battalion. The 36th Med's mission success is directly responsible for Operation Iraqi Freedom having the lowest died-of-wounds rate in the history of modern warfare. LTC Robert D. Mitchell and CSM Brian A. Fahl accepted the award.

• **Best Table of Distribution and Allowances (TDA) Battalion:** 1st Bn, 223rd Avn Regt, 110th Avn Brigade (Bde), Fort Rucker, AL. The 1-223 Avn ("Spartans") flew over 18,000 hours in 18 diverse training courses, using eight different types of aircraft with no Class A, B, or C accidents, while training more than 2,500 student pilots. In support of this mission, they also drove over 61,000 accident- and incident-free miles on the Army's busiest airfield and between four heliports and stagefields. The excellent leadership of the 1-223 Avn is evident with the achievement of 100 percent of its retention goals and zero AWOLs [absent without leave] or UCMJ [uniform code of military justice] disciplinary actions. The Spartans set the professional example for the rising branch leaders, being awarded the highest rating possible during their Fiscal Year 2005 Organizational Inspection Program. LTC Christopher Carlile and 1SG Russell Yohn accepted the award. ♦

–Adapted from Army Aviation magazine.

News and Notes

Keeping crewmembers informed...

ALSE MESSAGE 06-04: UNAUTHORIZED ITEMS ON IHADSS HELMET

The only authorized adhesive-backed items to be installed on the IHADDS helmet and visor assembly are limited to the pile fastener pieces used to secure ANVIS and lip light components. No other stickers or self-adhesive items are authorized on the IHADSS helmet shell or visor assembly housing.

The only authorized paint for the helmet shell and visor housing is listed in TM 9-1270-233-23&P, EM 0126, and TM 1-1520-Longbow/Apache. Air Warrior points of contact are Phil Yarbrough, DSN 746-6540 (256-876-6540), e-mail Philip.Yarbrough@peoavn.redstone.army.mil or John Jolly, DSN 746-6538 (256-876-6538), e-mail John.Jolly@peoavn.redstone.army.mil. The Air Warrior Web site is **https://airwarrior.redstone.army.mil.** ♦

WHAT'S NEW WITH *Flightfax*?

PAULA ALLMAN
MANAGING EDITOR
U.S. ARMY COMBAT READINESS CENTER

In our continuing efforts to keep *Flightfax* relevant to your needs and interests, as well as quick and easy to read, we've made a few changes in both format and content. Some of the changes are more noticeable than others, such as a new, more technological and structured layout. This fresh approach mirrors the latest Web sites, news magazines, and information media. Based on previous input from the field, the content targets more peer-to-peer articles supported with more realistic photos with a blend of graphics. Other modifications include the redesigned masthead.

We're also introducing three new columns that will appear from time to time. "Litefax" is intended to give aircrews—and other aviation personnel, for that matter—an informal forum in which to communicate "What were you thinking?" absurd moments with us and each other. You can read the latest on page 21.

"Crew Commo" is another new addition. It's designed to provide professional updates to aviation safety officers in field assignments. Check it out on page 20 of this edition. Let me remind you this new segment can only be successful with your active involvement to provide practical solutions to the safety problems we are all facing. We hope to hear from you—including maintenance personnel—on issues regarding safety and Composite Risk Management (CRM) in Army Aviation.

Because the cost of accidents is paid in lives, dollars, and readiness, we are including an Army Aircraft Losses chart in each issue (page 23). The purpose of this addition is to provide the entire Army Aviation community a monthly wrap-up of all aircraft losses (combat and accidental), including type of aircraft and the cost.

But all is not new in *Flightfax*. You'll continue to see—and, we hope, contribute to—the old familiar columns: War Stories, NCO Corner, STACOM, Lessons Learned, and News and Notes.

The Army Combat Readiness Center is dedicated to the concept of protecting Soldiers through CRM, and our goal is to make it easy for our readers to contribute to that effort. Just a couple of notes so everybody understands the deal:

- Space in *Flightfax* is limited, so we ask that you be as brief and to the point as possible.
- We will publish items anonymously and keep your identity confidential.
- If we edit your input for length or clarity, we'll get your approval before publishing the revised version.

For more information, contact the managing editor at DSN 558-9855 (334-255-9855) or e-mail paula.allman@us.army.mil or Flightfax@crc.army.mil.

Let us know what you think of our new magazine design. We truly want to know how we can serve you better. We look forward to working with you as you contribute to Army Aviation safety through *Flightfax*. ♦

"CREW COMMO"

AIRCREWS TALKING TO EACH OTHER...

is a new addition to *Flightfax*. It's designed to provide professional updates to aviation safety officers (ASOs) in field assignments. Items of special interest are Composite Risk Management worksheets, SOP management, reviews of new or modified regulations, information derived from recent Aviation Resource Management Survey (ARMS) inspections, current developments in the Army Safety Program or in Army Aviation that affect you daily. E-mail your questions to safetypolicy@crc.army.mil or call DSN 558-3856 (334-255-3856), and we will address your questions as soon as possible. In addition, we will publish selected questions and answers from the U.S. Army Combat Readiness Center ASO list server. Let me remind you this new segment can only be successful with your active involvement to provide practical solutions to the safety problems we are all facing.

THE "ULTIMATE" SAFETY BULLETIN BOARD

Q: I have an opportunity to create the ultimate safety bulletin board. I would appreciate any plans, drawings, pictures, or ideas from those that have an ideal solution.

A: My bulletin board just passed an ARMS inspection and was commended. I have attached a picture of the safety bulletin board for reference. I included everything from NG CIR 385-95. Here is an excerpt–

(2) Safety bulletin boards in other than electrical hazard areas shall be distinguished as a Safety Bulletin Board (for example, with a painted green border, or the words "Safety Bulletin Board" appended to the top of the board) and be posted in a conspicuous area. The ASO and ASNCO shall maintain them with timely information, that may include: (a) Copies of DoD periodic safety publications/magazines (for example: *Flightfax, Countermeasure,* and *ImpaX;* U.S. Navy Safety Center magazines *Ashore, Approach,* or *Mech;* U.S. Air Force Safety Center magazines *Flying Safety, Road & Rec;* U.S. Air Force Air Combat Command magazine *The Combat Edge;* (b) information downloaded from safety-related Web sites; (c) the agenda(s) for the next safety council meeting (CSC [and ESC, as applicable]); (d) the most recent AAPS results; (e) Command safety messages (for example, holiday safety reminders); and (f) safety-related newspaper clippings, and posters. All information posted to the safety bulletin board should emphasize accident prevention and/or lessons learned. Otherwise, these safety bulletin boards shall evidence:

(a) Names of the commander, ASO, and ASNCO;

(b) Safety events calendar (for example, a YTC) (see paragraph 3-4a of this circular);

(c) Minutes of the most recent safety council meeting (CSC and/or ESC, as applicable);

(d) Commander's safety philosophy (memorandum);

(e) Completed DD Form 2272, Department of Defense Safety and Occupational Health Protection Program (long form), available on the USACRC Web site at **https://crc.army.mil/Guidance/detail.asp?iData=31&iCat=118&iChannel=15&nChannel=Guidance**

(f) Any completed anonymous OHRs (which shall remain posted for not less than 30 days following their completion); and

(g) The following blank forms: (1) DA Form 285-AB-R (U.S. Army Abbreviated Ground Accident Report [AGAR]); (2) DA Form 2028; (3) DA Form 2397-AB-R (Abbreviated Aviation Accident Report [AAAR]);(4) OHR; (5) DA Form 4755 (Employee Report of Alleged Unsafe or Unhealthful Working Conditions); (6) SF 368; and (7) State/Territory- and locally-directed forms. ♦

–CW3 Tom Frickanisce, Jr., SP/IE/ASO, NJARNG, AASF #2 / E Troop (Air), 5th Squadron, 117th Regiment of Cavalry, Building 3801, Picatinny Arsenal, NJ 07806-5000, DSN 880-4609 (973-724-4609), e-mail thomas.frickanisce@us.army.mil.

Litefax What Were They Thinking?

CHRIS FRAZIER
STAFF WRITER/EDITOR

EIGHT ISN'T ENOUGH

Brownouts are no laughing matter, causing a large percentage of the accidents Army Aviators are experiencing during the Global War on Terrorism. So how do you prevent them? One forward operating base (FOB) thought it might have the answer and implemented a plan to help keep the dreaded dust where it belongs—on the ground. But while the plan might have been a good one, the execution left much to be desired.

To combat brownouts, flattened HESCO barriers were placed on the FOB's landing pad. For those who've never seen a HESCO barrier, it's a collapsible wire-mesh container with a heavy duty liner that is filled with sand, dirt, or gravel. The barriers can be found throughout war zones and are typically used to stop bullets and shrapnel from reaching Soldiers and equipment on the other side.

The barriers at this FOB, which will remain unnamed, were secured with 8-inch pieces of U-shaped rebar that were hammered into the ground. Unfortunately, this was a rare case where size really *does* matter, and 8 inches wasn't quite enough to properly hold down the barriers for multiple aircraft landings.

As a CH-47D lumbered down onto the landing pad, the rotor downwash lifted the barriers off the ground and into the bottom of the aircraft. The impact punched a 3-inch hole in the aircraft's sheet metal near the forward cargo hook.

To prevent future damage to aircraft, it was recommended FOBs wanting to quash brownouts use an approved helipad matting or other suitable material such as gravel rather than the barriers. If a suitable material isn't available, the barriers should at least be secured to the ground with stakes or rebar that are a minimum length of 2 feet. Furthermore, the barriers should be inspected daily to ensure they remain properly secured.

THAT'LL LEAVE A MARK

While gravel might have helped prevent the damage inflicted to the aircraft mentioned in the story above, it was the cause of it in this tale.

While on short final to an authorized landing zone (LZ), the crew of a UH-60L noticed the LZ had been covered with gravel because of snow and ice conditions. The crew saw several POVs had been parked nearby, so they decided to speed up the landing in hopes of keeping the gravel spray to a minimum.

Sad to say, but for the owners of three of the vehicles, the expedited landing didn't help. The pea-sized gravel was scattered by the rotor wash and peppered their rides, marring the paint jobs and windows.

Due to this incident, the facility's SOP was revised to reflect proper coordination and communication to prevent POVs from being parked near this LZ. Sadly, the revision was at the expense of three very unhappy vehicle owners.

–Contact the author at (334) 255-2287, DSN 558-2287, 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.

AccidentBriefs

Information based on preliminary reports of aircraft accidents

Class A

UH-1
V Model
• Class A: Four crewmembers were injured when the aircraft crashed during MEDEVAC training.

RQ-1
L Model
• Class A: Engine failure was reported during flight and restart was unsuccessful. The aerial vehicle (AV) plummeted to the ground and a fire ensued. The aircraft was reported as a total loss.

AH-64

A Model

• **Class E:** Approximately 8 nautical miles from the airfield, the main XMSN chip light illuminated briefly and then went out. The aircrew continued to the airfield. During landing, the chip light illuminated and stayed steady. Within 20 seconds, the No. 2 oil hot main XMSN light illuminated and crew felt a vibration. The aircraft was landed without further incident and shut down. The transmission was replaced and the aircraft was released for flight. (Late Report)

D Model

• **Class E:** After takeoff, the pilot noticed the cyclic was moving left and right by itself. Maintenance replaced the main rotor actuator. (Late Report)

• **Class E:** After landing the aircraft on the taxiway, a No. 1 engine overspeed occurred. The engine torque exceeded limits, and the rotor went to 120% for .5 seconds. The aircrew retarded the No. 1 engine power lever and the aircraft was shut down without further incident. Maintenance performed visual inspections and found no damage. Maintenance replaced a wire harness, and the aircraft was released for flight. (Late Report)

CH-47

D Model

• **Class E:** The No. 1 engine oil filter bowl cracked and allowed oil to escape until the engine oil low light illuminated. The engine was shut down and the aircraft landed without incident. The aircraft was repaired and continued the mission. Maintenance replaced the cracked filter housing, and the aircraft was released for flight. (Late Report)

• **Class E:** The aircraft took off from the airfield and proceeded to perform training within the terrain flight training area. The training included slope and pinnacle landings. During this terrain flight, two wheel landings where performed. The aircraft returned to the airfield for pilot swap. While waiting for the new pilot, the crew noticed a hole in the bottom of the aircraft. The aircraft was shut down without further incident. (Late Report)

MH-47

E Model

• **Class E:** On short final to the forward arming and refueling point, the No. 2 hydraulic light illuminated, accompanied by the No. 2 automatic flight control system caution. The aircraft was landed and shut down. On postflight inspection, the crew discovered the No. 2 power transmission unit and No. 2 power control module had failed. Maintenance repaired the aircraft and it was flown back to the forward support base the following day. (Late Report)

G Model

• **Class E:** After completing a maintenance test flight (MTF), the pilot terminated his landing to a hover over a sod area near the taxiway. As the pilot hovered the helicopter, the emergency release mechanism assembly failed, causing the aft cargo door to fall. The crew landed, retrieved the cargo door, and returned to parking. (Late Report)

OH-58

C Model

• **Class E:** While in cruise flight at 1,400 feet and 80 KIAS, the crew observed the fuel boost caution light illuminate. The pilot in command (PC) checked the fuel boost circuit breaker and discovered it had popped. The crew executed the emergency procedure to land as soon as practicable and returned to the airfield without further incident. Inspection of the aircraft revealed the wires connected to the fuel boost switch were frayed and loose. The wires were replaced, a main-

tenance operational check was completed, and the aircraft was released for flight. (Late Report)

D(R) Model

• **Class B:** The crew was conducting a go-around over the landing lane during a manual throttle approach when the auto/man switch failed to return the aircraft to auto mode. The student continued to attempt to place the aircraft back into auto mode and was successful on the third attempt, following an Np overspeed. During landing, the aircraft rocked forward and all main rotor blades made contact with the FM antenna and upper wire strike protection system.

• **Class C:** The aircraft experienced an Np overspeed (124% for 6 seconds) during a manual throttle recovery demonstration.

UH-60

A Model

• **Class C:** The crew was conducting an MTF when the auxiliary power unit (APU) door came off in flight, damaging the stabilator, one main rotor blade, and one tail rotor blade. The crew heard the noise and returned to the airfield without further incident.

• **Class D:** On postflight inspection, the ALQ-144V was observed to have several mirrors damaged following a short flight. The aircrew was unaware of a bird strike during the flight, but evidence of some type of strike was left on the ALQ-144V. (Late Report)

• **Class D:** While at 500 feet AGL and 120 KIAS, the standardization pilot (SP) turned the windshield anti-ice on. The copilot's windshield cracked at the lower left and lower right portions with electrical arcing. The SP turned off the windshield anti-ice and landed without further incident. The free air temperature was 10 °C. A Quality Deficiency Report has been submitted. (Late Report)

• **Class D:** During pilot hot swap, the PC noticed an electrical burning smell in the cockpit. The PC looked up and saw the windshield anti-ice switch was in the on position and the pilot's-side windshield was cracked. (Late Report)

• **Class D:** During a dust landing in brownout conditions, the crew suspected the aircraft landed on a rock. (Late Report)

L Model

• **Class D:** Upon landing and lowering of the collective, the crew felt and heard a loud report. Upon inspection of the rotor blades, it was found that all four blades had incurred damage. The degree of damage varied from slight marring to 6-inch holes on the outside edge of the tip caps. (Late Report)

EO-5

C Model

• **Class E:** During climb to cruise altitude, the aircraft was not pressurizing properly. The crew checked and found a squealing noise coming from the air stair door. The crew descended to 9,000 feet and returned to base without further incident. Maintenance replaced the rear main door seal, and the aircraft was released for flight. (Late Report)

UC-35

B Model

• **Class E:** During multi-ship close combat attack operations, the crew noted a burning electrical smell in the cockpit. Approximately 2 to 3 minutes later, the GEN FAIL caution light appeared on the upfront display. The crew returned to the airfield without further incident. (Late Report)

ARMY AIRCRAFT LOSSES FY02 TO PRESENT*

	HOSTILE/NON-HOSTILE	COST
AH-64A/D.....	6/41	$985.0M
U/MH-60L.....	6/21	$184.8M
C/MH-47.....	5/11	$567.6M
OH-58D.....	8/21	$181.2M
Total	25/94	

*As of 15 Mar 06

UNMANNED AIRCRAFT SYSTEM

RQ-5A

• Class E: On short final, the external pilot noticed something appeared to fall from the AV. Landing was completed and it was noted an antenna for the payload in use had broken off from its mount and caused slight damage to the leading edge of the right wing. The antenna was recovered, and the AV was shut down with no further damage. (Late Report)

RQ-7B

• Class B: Approximately 10 minutes after launch, a generator malfunction caused a power failure. The AV crashed and is expected to be a total loss. (Late Report)

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.

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