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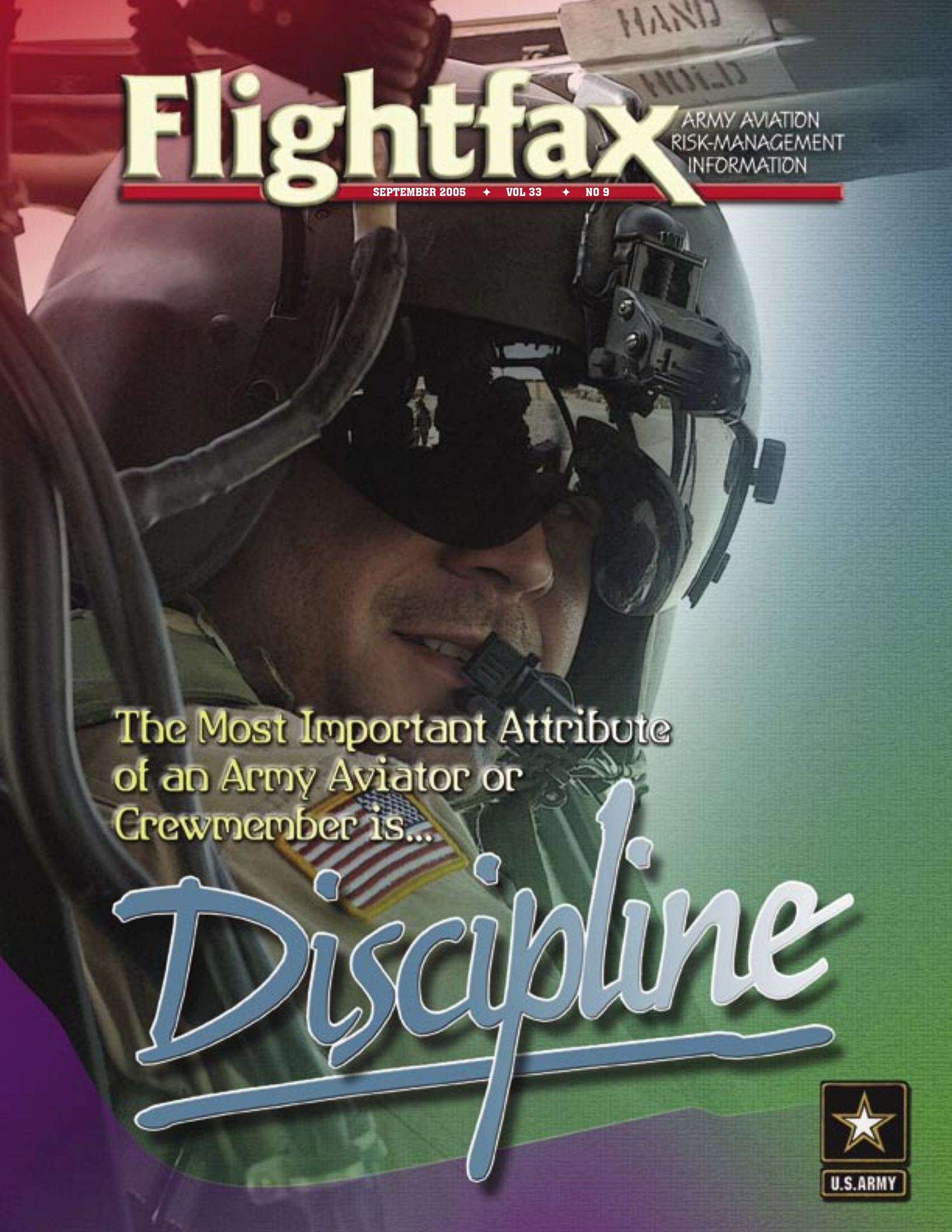

The Most Important Attribute of an Army Aviator or Crewmember is...

Discipline

U.S. ARMY

Flightfax

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Investi

"Let Me D

You Hol

Discipline

is the most important attribute of an Army Aviator or crewmember. Learned discipline allows inexperienced aviators and crewmembers to overcome a deteriorating tactical situation or unexpected weather conditions. Unwavering discipline keeps a mid-level aviator from attempting maneuvers beyond his capabilities and from placing his crew in situations of unnecessary risk. Discipline enhanced by experience allows senior aviators and crew chiefs to make solid recommendations to air mission commanders and influence the actions of fellow crewmembers.

o It...
d Your Diet Coke"

Indiscipline can result in anything from a paper cut, to brain damage, to death. That is what's so disturbing about the whole indiscipline thing—you never know what the results might be. As an aircrew, you might be able to find that "sucker hole" and get your aircraft with eight passengers onboard below the clouds, OR you might hit a 1,000-foot television broadcast tower! You might do that break turn and get a great photograph you can e-mail home, OR you might impact a rocky hillside and suffer brain damage so severe that you won't be able to recognize any of your family members.

Discipline is not isolated to the cockpit, but it can end in the cockpit. Just as several layers of carbon fiber make armor plating strong, multilayered discipline—including your air mission commander, troop or company commander, and squadron or battalion commander—is essential. However, no matter how robust the discipline in these top layers, a discipline breach in the cockpit can be catastrophic.

A recent accident illustrates the result of cockpit indiscipline. In this accident, the crew was providing security during a supply ring flight. A risk assessment worksheet (RAW) was completed for the mission, with the mission complexity portion of the RAW indicating COMBAT. During the flight, a request was made from one of the aircraft in the flight to perform a maneuver with a steep bank angle which would expose the underside of the aircraft. The crew agreed to this photographic opportunity and had a short discussion on who would be on the flight controls during the maneuver. The discussion ended with, "Let me do it, you hold your Diet Coke."

The crew performed a breaking turn with a bank

angle in excess of 60 degrees. Consequently, the crew failed to anticipate and recover from the high sink rate from the aggressive maneuver and the aircraft impacted the ground and was destroyed. Thankfully, the crew suffered only minor injuries.

As stated earlier, the RAW indicated COMBAT, but this was not meant to allow the crew to do whatever they wanted. The crew was briefed to perform maneuvers or mission deviations only in response to tactical situations.

When the accident occurred, they were not maneuvering away from surface-to-air fires, there was no call for immediate assistance by ground troops, nor were there any troops-in-contact. The crew's indiscipline resulted in the total loss of a helicopter. The enemy never lifted a finger. This lack of discipline directly impacted the combat readiness of this unit.

The facts

Many of you may be unaccustomed to this level of exposure. To further emphasize the situation, we offer the following—

■ Between 1 October 2002 and 29 June 2005, 88 Army aircraft have been lost to accidents. Replacement costs for these aircraft will exceed $1 billion.

■ In fiscal year 2005, 34 Soldiers lost their lives to aviation accidents; that's 14 percent of all Army Soldier accidental fatalities.

Any feelings these statistics and this article might give you pale in comparison to a visit to one of our regional medical centers or civilian hospitals treating survivors of these accidents. Our national industrial base can manufacture or rebuild helicopters, but no factory can restore brain function or full mobility to a Soldier injured in an accident.

Conclusion

With the recent sharp rise in Army Aviation accident rates, increased emphasis has been placed on determining what root causes precipitated the accidents. Are you a potential root cause? Does your current level of discipline rule out inappropriate behavior in the face of command pressure or peer pressure? What about loss of "cool points?" If YOU have been trained, signed-off, and knowingly induce a maneuver while flying an aircraft, then YOU are required to anticipate, adjust, and recover from any flight conditions that may transpire.

If you are unsure of your abilities given the environmental conditions (wind, density altitude, or temperature), the performance limitations of your aircraft, or your personal limitations, don't do an extreme maneuver until the conditions are more favorable. If you are not briefed to do a certain type of maneuver or mission, don't do the maneuver or mission until you are properly authorized and have applied all applicable mitigation measures. Extreme tactical situations may require real-time mission modification, but these situations should be taken into consideration during contingency planning. Most importantly, if you know you can successfully execute the maneuver and have been briefed, BUT the maneuver is not appropriate—

DON'T DO IT!

Discipline begins and ends with you, the Army Aviation Soldier. Unwavering discipline will result in increased professionalism between your aircrew members and will reduce the probability of accidents within your unit. ♦

—Comments regarding this accident may be directed to the Accident Investigations Division at the U.S. Army Combat Readiness Center, DSN 558-9552 (334-255-9552).

"Nothing can be more hurtful to the service than the neglect of discipline; for that discipline, more than numbers, gives one Army superiority over another."

--GEN George Washington

Investigators' Forum

Simple Mission Turns Tragic

Near dusk, the AH-64A crew was conducting a routine continuation training flight in the local terrain flight area (TFA) in overcast, light rain conditions. The crew flew to a nearby airfield to conduct traffic pattern maneuvers and then flew on a nap-of-the-earth (NOE) route over a major river. At the release point of the NOE route, the crew flew into the TFA for approximately 10 minutes before returning to the river.

Upon their return, it is suspected that the crew navigated at terrain flight levels as they attempted to rejoin the NOE route and mistakenly returned to the river beyond the anticipated route release point. The crew then assumed a flight profile along the river that was too low and too fast for environmental conditions. It is suspected the crewmembers were flying toward a setting sun, and the crew failed to detect wires suspended across the river at 50 feet above ground level; consequently, the aircraft struck multiple 1.25-inch wires and crashed into the river. The aircraft was destroyed and both crewmembers suffered fatal injuries.

Why did it happen?

The exact cause of the accident could not be determined due to no survivors, eyewitnesses, or digital source collection means on the aircraft. It is suspected that the crew was overconfident in their abilities to rejoin the intended route with the aid of only a 1:250,000 scale map and onboard navigation equipment because of their familiarity with the local TFA. Overconfidence is also suspected within the crew by them assuming a flight profile on the river that was too low and too fast for the environmental conditions in which they were flying. In addition, fatigue on the part of the pilot in command (PC) may have degraded his ability to concentrate and exercise proper judgment. The PC had taken a checkride the night before and then departed early the morning of the accident to attend several medical appointments.

Lessons learned, recommendations

The crew failed to conduct adequate pre-mission and in-flight planning. Complete and adequate flight planning is a critical element in the success of any mission. Not only does it provide the information required to perform an aircrew's duties, it also puts the crew in the correct mindset to perform the mission safely. Skipping required planning steps due to overconfidence or complacency can lead to disastrous results.

The mission briefer and approval authority were not available to perform face-to-face risk management duties. The mission briefer compromised his ability to conduct a thorough and relevant briefing by conducting the briefing via radio while he was, himself, engaged in another aviation mission. A critical step toward ensuring crews perform to standard is thorough oversight by the mission briefer and approval authority. They are vital links in the risk management process. They help ensure crews conduct detailed mission planning, as well as ascertain whether the crew is fit and able to fly the mission before assigning, briefing, or approving it. ♦

—Comments regarding this accident may be directed to the Accident Investigations Division at the U.S. Army Combat Readiness Center, DSN 558-9552 (334-255-9552).

Investigators' Forum

Mishap or Malpractice

It was the end of a hot, windy day in the high desert. The Apache and its crew, an experienced instructor pilot/pilot in command (IP/PC) and a novice copilot gunner (CPG), had been standing ready for a Quick Reaction Force mission all day but had not launched. Their standby mission was to conduct close combat attack (CCA) gunnery training.

The planned takeoff time for the gunnery mission was approaching; however, the crew had to first attend an after-action review (AAR) from a previous mission. The lessons learned from these AARs were important and had already permeated throughout the squadron, resulting in the risk assessment worksheet (RAW) being updated three times in the past 4 months.

The CPG took care of the preflight while the PC handled the paperwork. Unfortunately, with two missions to deal with and little time to waste, some items were overlooked. Some of the items, including getting the weather and the RAW approved, later proved to be critical.

The pilots strapped in and cranked the auxiliary power unit (APU). The Apache was fueled and armed with 300 rounds of 30 mm and 24 rockets. The mission was to conduct team CCA training with running and diving fire; however, their sister Apache was already turning blades. They hurried to join them, but as they were going through the aircraft powerup, both weapons processors failed.

Armament was called and the crew had no choice but to cancel the team training. No problem, they decided they would go alone. When the Apache was ready to fly, the pilots cranked up and taxied for takeoff. Inbound to the range, they accomplished a mission handover from their sister Apache and contacted the Operations Control Facility (OCF) controller on the FM radio and called for a target.

The Apache was flying well that day. The pilots made six attacks using a combination of rockets and 30 mm cannon fire. They were coming around for the seventh run when things got out of hand. It was a hot, high-density altitude (DA) day with the temperature in the high 30s Celsius and a DA of over 7,800 feet. The six inbound runs may have made them a little complacent … and a little overconfident. Although the crew was not cleared for combat maneuvering flight (CMF) training, the PC executed a 98-degree right bank angle and kept the nose above the horizon for about 6 seconds as he lined up on their inbound course.

"Altitude low! Altitude low!" came the computerized voice as the 17,000-pound Apache sank to less than 50 feet above the sand-swept, rocky terrain. The aircraft stopped its descent at 39 feet and some change. The nose came up and they climbed just high enough to nose it over and let loose another devastating rocket attack. Maybe it was the altitude loss, or maybe it was the main rotor downwash on the tail of the rocket, but they overshot by 300 meters and were cleared for immediate re-attack by their ground controller. Unfortunately, they did not take the "altitude low!" warning seriously enough to modify their flight maneuvers.

Two more successful attack

runs later and they were headed outbound. Now ready to turn inbound on their 10th and final engagement, the PC on the flight controls said, "I'll get us turned around here," as he banked the aircraft to the right to 98 degrees. It was eerily the same. The same bank angle, the same nose-up attitude, and, unfortunately, the same low above ground level (AGL) altitude when they initiated the turn. The radar altimeter read 106 feet AGL when the PC banked the aircraft. This time, he only kept the nose above the horizon for 3 seconds before he dropped it to gain airspeed.

The combination of low altitude, high DA, and excessive bank angles proved fatal for the Apache and injurious to the crew. The aircraft was destroyed and the CPG is still recovering from head injuries and broken bones. What went wrong? How could an IP, trained in CMF by the Directorate of Evaluation and Standardization (DES), with over 4 months in-country do so many things wrong? Are there lessons to be learned here to prevent one of us from making the same deadly mistake? Read on and see for yourself.

From a Combat Readiness Center perspective

So what was the cause of this accident? Was the PC overconfident in his ability to perform CMF training or was this a case of indiscipline? Webster's dictionary defines discipline as "a rule or system of rules governing conduct or activity." Therefore, indiscipline simply means a lack of discipline—or not following the rules.

The PC was qualified to teach this maneuver. In fact, he had been trained in CMF by a DES standardization pilot (SP) a few months prior and was taught the hazards associated with conducting CMF at low altitudes in extreme environmental conditions. He had also performed this maneuver nine previous times on that same day. He had logged more than 300 hours in-country and had flown in a variety of local environmental conditions. These are all acceptable reasons to be confident, not necessarily overconfident, in his flying abilities.

The PC's actions that day make a convincing case for indiscipline versus overconfidence. Consider these facts: the PC did not obtain approval authority to conduct the mission, did not verify that an air mission commander had been designated for this CCA mission, did not sign the mission briefing form for the CCA mission, and he did not obtain a weather briefing prior to departure. In addition, the PC disregarded the cautions in the aircrew training manual on several occasions on this day alone, warning against excessive bank angles at terrain flight altitudes. Moreover, he had been previously restricted from teaching CMF training by the troop commander due to reports of overly aggressive flight maneuvers from other fellow aviators.

As professional aviators, we must be accountable for our actions, or inactions, in the cockpit. We must not accept undisciplined behavior from fellow aviators; we must hold each other accountable. It is when we depart from established procedures, either willfully or through neglect, mishaps result. Those who are dependent on us to be professional—in this case, the CPG—are the ones paying the high price.

When we talk about reducing mishaps, we must focus on what is preventable. Willful aircrew indiscipline or violations of procedures are controllable by those of us in Army Aviation. We know the pressures to complete the mission can create tough situations and challenge our aircrew, but as professionals, we must always strive to do the job correctly and safely. Concerned leadership, effective training, professional behavior, and on-target composite risk management should be the "mantra" of every leader. ♦

—Comments regarding this accident may be directed to the Accident Investigations Division at the U.S. Army Combat Readiness Center, DSN 558-9552 (334-255-9552).

From a DES Perspective

CW5 Craig Winters
Directorate of Evaluation and Standardization

What caused the preceding accident? Basically, an excessively steep bank angle at too low of an altitude did not allow the pilot sufficient altitude for recovery. How do we prevent future combat maneuvering flight (CMF) accidents? The answer is through education and training. We have raised an entire generation of attack helicopter pilots that have not been trained to maneuver their aircraft.

When discussing or performing CMF, it is important to understand that you have to manage three forms of energy: power, the margin between power required and power available; kinetic energy (airspeed); and potential energy (altitude). These three forms of energy are commonly referred to as our bank accounts. One of the basic CMF rules of thumb is "never empty your bank accounts."

When operating in a high-altitude, desert environment with a combat-loaded AH-64D, your power bank account is nearly empty at takeoff, which leaves airspeed and altitude. When operating at altitude, even with a narrow power margin, the AH-64D is quite maneuverable. As altitude is decreased, airspeed may not be available to trade off for lift and must be evaluated prior to and during the maneuver. This is aggravated as helicopter gross weights and density altitude (DA) increases. What this means is when you are operating at terrain flight altitudes with a loaded Longbow at high DAs, you can't bank as steeply as you can at higher altitudes. Remember to always leave yourself a way out.

Combat maneuvering flight proficiency is essential to success on today's battlefield. As with nap-of-the-earth (NOE) flight and night vision goggle (NVG) flight, the only way for our aircrews to attain and maintain proficiency at CMF is through a structured and disciplined training program.

CMF rules of thumb

■ Never move cyclic faster than you can maintain torque, trim, and rotor.

■ Correct for changes in performance, loading, and environmental factors.

■ Plan for contingencies; e.g., have a way out.

■ Expect the collective to DROP during "G" loading if your hand isn't on it.

■ NEVER EMPTY YOUR BANK ACCOUNT!

■ CMF must be practiced (it IS a perishable skill; therefore it needs to be instinctive).

■ Crew coordination is CRITICAL. Who is inside? Who is outside? Who is shooting with what?

■ Rolling into steep turns, anticipate the nose drop and add aft cyclic.

■ Can be used as an advantage.

■ Never let the nose drop below the target!

■ Know where the wind is from and plan accordingly.

■ Sink rates must not be allowed to develop.

■ Always land and take off into the wind.

■ Give yourself more altitude and recovery time.

■ Avoid large flares to a stop.

■ If possible, maintain effective transitional lift until in-ground effect.

■ Don't forget, jettison when necessary. ♦

—CW5 Winters is a AH-64 A/D standardization pilot at the Directorate of Evaluation and Standardization, Fort Rucker, AL. He may be contacted at DSN 558-2532 (334-255-2532) or e-mail craig.winters@us.army.mil.

"Oh, Ye of Little Faith!"

Gary D. Braman
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As a former accident investigator, I'm always on the lookout for high-risk aviators, or what we used to call "cowboys." Cowboys are not identifiable by age, gender, race, rank, or position. They can be anyone in your unit: the commander, the operations officer, an instructor pilot (IP), or the aviation safety officer (ASO). They can be the best or the worst officer in your organization. Their behavior can be very obvious or very discreet. They don't like doing things by the book and don't understand why they should. They become defensive when confronted and will always have an excuse for their actions. They also have a very difficult time complying with the instructions on the mission briefing sheet. When flying, one of their favorite terms is, "Watch this!"

I once served on an AH-64 accident investigation board. Shortly after arriving at the scene of the accident, we were handed the tape from the aircraft's video recorder. After viewing the tape, I knew we were dealing with cowboys. An accident had been inevitable during this flight; it wasn't a question of "IF" an accident was going to happen, it was "WHEN."

The mission was a single-ship, day aircrew training manual (ATM) training flight for an officer who had not flown much but was scheduled to deploy on a Joint Readiness Training Center rotation. The training was to include high- and low-level reconnaissance, low-level flight, and nap-of-the-earth flight with target-engagement operations. The crew was briefed to conduct the flight in the local training area utilizing several different sectors and transition corridors.

As part of preflight planning, the crew checked the weather, computed aircraft performance data, and assessed the risks associated with the mission. Additionally, they conducted all mission and crew briefings. The crew then filed their flight plan and completed the preflight inspection of the Apache. The time was about 1400 when they took off. The pilot in command (PC), who was also a unit IP, was in the backseat on the controls, and the copilot was in the front seat. They conducted ATM training consisting of low-level and NOE operations in several different training areas. They also practiced multiple target engagements and high- and low-recon of landing zones. This training was completely documented on the aircraft's videotape. The video also showed the PC operating the aircraft as low as 3 feet above ground level (AGL) at 26 knots between trees and wires beside common-use roads. At one point, the copilot was heard to say, "Yeeeeeee-haaaaaaaa," as the PC completed a return-to-target maneuver.

At one point, the copilot was heard to say, "Yeeeeeee-haaaaaaaa" as the PC completed a return-to-target maneuver.

The crew continued their flight along a common-use roadway until arriving at one of the large drop zones scattered around the reservation. The PC turned the aircraft left to a heading of 320 degrees toward a stand of trees. As the aircraft approached the trees, the PC noted a gap in the trees and asked the copilot, "Do you think we can make it between there?"

The copilot answered, "Nope."

The PC then remarked, "Sure we can. Look how big it is. Oh, ye of little faith."

At 1532, immediately after the PC's remarks, the No. 4 main rotor blade struck a 2½-inch diameter limb, breaking off an 8½-inch piece of the blade. The Nos. 2 and 3 main rotor blades also struck the tree. The aircraft shook violently, but the aircrew was able to land in an open field unassisted.

The aircraft was at 16 feet AGL and 76 knots when it struck the tree, resulting in more than $1 million in damage to the aircraft. So, "cowboys" are still alive and well in Army Aviation. As hard as we try to identify and eliminate them in initial flight training, some still manage to get through. As professional aviators, we have a responsibility to report and eliminate them once they have been identified. Our business is a dangerous one, and the cowboys only increase the risk. We must not condone their behavior by doing nothing. ♦

—Mr. Braman is a Senior System Safety Analyst for CAS, Inc. He supports the Utility Helicopters Project Management Office in Huntsville, AL. He may be contacted at gary.braman@uh.redstone.army.mil. Mr. Braman was an active duty accident investigator assigned to the U.S. Army Combat Readiness Center when he wrote this article.

COMMANDERS, DON'T BE AFRAID TO ACT

LTC Mike Langham
Command Judge Advocate
U.S. Army Combat Readiness Center

"You cannot be disciplined in great things and undisciplined in small things."

GEN George S. Patton Jr., May 1941

Discipline is a necessary character trait of a Soldier. It is instilled in all of us from the first day we enter military service. It touches every aspect of our lives and is a vital component of integrity. It is reliance on discipline that can save lives and conserve vital combat resources.

In the military, we train to standards that have been established from experience. There are reasons for the rules, even if we don't personally know what all the reasons might be. Adhering to these standards is the basis for discipline. Hand in hand with discipline is accountability for breaches of discipline. Accountability is another vital component of integrity.

There are times when individuals toss discipline to the wind and fail to follow the standards they've been taught. Several of the articles in this issue of *Flightfax* address such situations. Fortunately, most of the crewmembers involved in these examples of indiscipline did not become fatality statistics. Unfortunately, we in the Combat Readiness Center (CRC) see too many instances of indiscipline where the participants are not so lucky.

I agree with the author of "Mishap or Malpractice" that "[a]s professional aviators, it is time … to be held accountable for our actions or inactions in the cockpit." But how is this done? Although

a commander cannot use the findings and recommendations of a safety investigation as the basis for administrative or punitive action, he can rely on collateral reports, reports of surveys, line of duty determinations, and other criminal or administrative reports to provide the factual basis for action against a Soldier or civilian employee.

There are several tools available to commanders to correct indiscipline. I would like to address the commander's options under the Uniform Code of Military Justice (UCMJ). The UCMJ has several provisions that may be used to hold military personnel accountable for their indiscipline and the impact it has on the safety of Soldiers.

■ **Article 93 – Cruelty and Maltreatment**. "Any person subject to this chapter who is guilty of cruelty toward, or oppression or maltreatment of, any person subject to his orders shall be punished as a court-martial may direct." A Black Hawk pilot who chooses to take an infantry squad on the "ride of their life" and intentionally sets out to "make them puke" could be guilty of this Article.

■ **Article 119 – Involuntary Manslaughter**. "Any person subject to this chapter who, without an intent to kill or inflict great bodily harm, unlawfully kills a human being by culpable negligence." A similar offense is negligent homicide.

■ **Article 134 – Negligent Homicide**. If on the same "ride of their life" the Black Hawk pilot exceeded the aircraft's capabilities and crashed the aircraft, killing those same infantry squad members, the pilot could be prosecuted for these offenses which carry a potential sentence of a dishonorable discharge, forfeiture of all pay and allowances, and confinement for 10 years for involuntary manslaughter or 3 years for negligent homicide.

■ **Article 92 – Failure to Obey Orders or Regulations**. This Article is most commonly available to commanders for safety violations.

Many provisions of regulations are included for the safety of our Soldiers, their family members, and the general public. Failure to adhere to these regulations can lead to an Article 15 or prosecution under Article 92. Violations of this Article include disobeying an order, disregarding regulations, or being derelict in the performance of one's duties. The maximum punishment for these offenses varies with the degree of culpability of the defendant.

Violating an order or regulation is fairly clear cut and is an easy concept for each of us to understand. If the Army has published an order or regulation and it is lawful, you must follow it. To be guilty of dereliction of duty, you need only be found to have acted with simple negligence or with culpable inefficiency in the face of a duty to act otherwise. "Negligence" is any act or failure to act when you have a duty to use care. Aviation is an inherently dangerous business and you always have a duty to use care in the operation of an aircraft. "Culpable inefficiency" means a reckless, gross, or deliberate disregard for the foreseeable results of an act or a failure to act without a reasonable or just excuse. Operating an aircraft on the edge of its performance limits ("hot-dogging," or "crankin' and banking") would be acting with culpable inefficiency.

The stories in this issue of *Flightfax* are a vivid reminder that indiscipline often leads to tragedy. Commanders should learn from these tragedies and not accept indiscipline within their units. Don't ignore complaints made about safety. Most importantly, don't be afraid to act.

If you have any questions about this article or your obligations as a leader to maintain the health and welfare of your Soldiers, contact the USACRC Command Judge Advocate or your local Judge Advocate's office. ♦

—LTC Mike Langham is the Command Judge Advocate at the U.S. Army Combat Readiness Center. He may be contacted at DSN 558-2924 (334-255-2924) or e-mail mike.langham@crc.army.mil.

There are NO New Accidents (Part II)

LTC W. Rae McInnis, Retired
U.S. Army Aviation Technical Test Center

Author's note: There is a saying among the investigators that "There are no new accidents, just repetitions of the old ones." I hope by reviewing these accidents, you can avoid the next repetition. This is the second article that discusses aviation accidents that I investigated."

There are reasons we memorize Chapter 9

Any safety officer can tell you that 80 to 90 percent of accidents are caused by human error. A search of the Combat Readiness Center (CRC) database confirms that. That doesn't mean that aircraft never break. They do. There are rare occasions when the failures are so catastrophic that the crew can only hang on and hope. But there are other times when it's up to the crew to memorize and apply Chapter 9. Here are two cases where knowledge of aircraft emergency procedures and the application of common sense saved four aviators from injury or worse when their aircraft failed them:

■ An OH-58D Kiowa Warrior (KW) was Chalk 3 in a flight of four aircraft (three OH-58Ds and one SH-60) 40 miles offshore at approximately 90 KIAS when things began to go wrong. The crew heard a bang, followed by a high-frequency vibration. Moments later there was another bang, and the aircraft yawed right and tucked its nose. The crew accurately identified the problem as loss of tail rotor components. They first tried to keep the aircraft in forward flight to maintain the slipstream. This was not possible because one of the components lost was the vertical fin. The more experienced crewmember then took the controls, rolled off the throttle, and executed what was later described as a perfect autorotation to the water. Both crewmembers swam out and were rescued within minutes. This crew did everything right from the onset of the emergency. They knew exactly how to respond to the situation and were rewarded

with no injuries and a pair of Broken Wing awards.

■ Another crew who responded well to a mechanical emergency was flying Chalk 3 in a flight of six AH-64As over desert terrain. Shortly after leaving a holding area, the instructor pilot (IP) in the pilot's station heard a loud report, followed by a grinding noise and feedback in the pedals. There were no cockpit indications of any problem. The IP wisely decided to land and announced his intentions to the flight. The feedback in the pedals led him to execute a roll-on landing to the desert in case he lost tail rotor authority. At approximately 15 feet, the PI announced there was a fire light. The IP decided to continue to land and then fight the fire. He landed at approximately 40 knots to the unimproved surface without even breaking the tail wheel pin. He then executed an emergency shutdown, pumped both fire bottles into the auxiliary power unit (APU) compartment, and got out of the aircraft. Over the next 45 minutes the IP was forced to watch his aircraft burn to the ground. What he didn't know at the time was that the APU clutch had exploded, sending shrapnel throughout the turtleback area of the aircraft. Hydraulic fuel or oil lines were ruptured and caught fire. It is suspected that airframe integrity was compromised within 5 minutes of the onset of the emergency and within 3 minutes of the first cockpit indication. By landing immediately and executing the emergency shutdown, the IP removed himself and his pilot (PI) from further danger. (*Flightfax*, July 2002)

Good people don't always do the right thing

Our Army, the Aviation Branch in particular, is filled with outstanding men and women who are intent on accomplishing their unit's mission. They train hard, generally abide by published standards, and are willing to go the extra mile when necessary. They are great people. So why do great people make bad decisions? Why do experienced pilots choose to violate standards they are very familiar with? The answers to those questions lie at the heart of many accident investigations. The answers that usually come up are haste and overconfidence. That is, people get in a hurry to get a mission completed or believe their skills enable them to execute maneuvers and prosecute the mission outside of published standards. Here are two such stories:

■ A Cavalry Troop was executing situational training exercise (STX) lanes in support of a ground force. Three KWs were rotating on and off station when ENDEX was called. The AAR site was announced and one of the three aircraft flew down the lane to ensure that all the ground vehicles were moving. As he passed the last one, he entered a turn, during which he allowed his airspeed to drop to less than 20 KIAS. The KW began a sideslip descent that the pilot was unable to recover from. He did manage to level the aircraft before impacting the ground. The aircraft was destroyed, and the pilots were uninjured.

So, what happened? Why did the aircraft stop flying? The pilot on the controls expedited the turn to follow the ground troops. The data cartridge from the aircraft indicated that the bank angle when the sideslip started was 67 degrees with less than 20 knots of forward airspeed. The KW simply did not have enough power to maintain flight. A 3,000-foot per minute rate of descent was established and there was no way to recover. Haste and overconfidence. The pilot wanted to expedite the turn and believed he was capable of executing a turn greater than 60 degrees, despite the restriction in the -10. (*Flightfax*, September 2002)

■ A more tragic incident where haste and overconfidence caused an accident was when a UH-60 crew took off for home from another airfield utilizing night vision goggles (NVGs). They encountered deteriorating weather that was worse than anticipated. Rather than return to the airfield and wait out the weather, or remain overnight, the crew decided to push on. Their down time was 2100, and apparently they thought they could make it despite the

conditions. Because the primary route required a greater altitude than an unofficial alternate route, the crew chose to take the alternate routing. Getting lower and lower, they tried to get through a low pass as the weather turned into downpours and occasional thunder and lightning. At some point, they lost visual reference and flew into the side of a hill at over 90 KIAS. The aircraft was destroyed and all five crewmembers were killed.

In both these cases, the crews were well respected. Witness after witness said they couldn't believe that the crew had deviated from the standard. How do we stop these accidents? As individuals, we cannot let mission accomplishment override everything else. There are few commanders who would question an aviator for being too safe. As leaders, we absolutely must ensure our subordinates understand that there is no mission in peacetime or combat important enough to risk an accident. They must also understand that standards will be ruthlessly enforced and that mission accomplishment is not an excuse for violation.

"Objects in the rearview mirror are closer than they appear...."

OK, maybe not the rearview mirror, but there are many accidents caused when crews either drift or fly into obstacles they were sure they were clear of. Blade strikes are among the most common accidents that happen to rotary-wing aviators. One that comes to mind involves a very experienced IP who allowed his aircraft to get too close to an obstacle. As a result, the aircraft was destroyed and crewmembers received minor injuries.

This case is an AH-64 entering an attack-by-fire (ABF) position at night. Flying as Red 2 in the lead team in a flight of six, the IP in the backseat of the aircraft moved to "set" to the right of Red 1. The ABF was in a small valley that ran from right to left with tree lines separating large open fields. As the IP moved to the right of Red 1, he settled near an intersection of two tree lines. He continued to move slightly forward, leaving the T intersection of trees to his 5 o'clock position. All you AH-64 pilots know that the night vision system doesn't go back past approximately the 3 o'clock position. The PI in the front seat was wearing NVGs in accordance with the limited airworthiness release to help keep the aircraft away from obstacles. Unfortunately, both pilots became focused on the lead aircraft, and their aircraft began to drift backwards. The VTR in the aircraft indicated the aircraft was lower than the crew intended. The aft drift ended as the tail rotor struck 75-foot trees. The No. 5 driveshaft sheared and the aircraft began to spin. The pilot lowered the collective and the aircraft crashed to the ground. The crew received only minor injures, but the aircraft was destroyed.

Why did it happen? The IP allowed himself to descend lower than he intended because he was focusing on the lead aircraft while simultaneously trying to talk to the front seater through his procedures. The drift then began and he failed to notice. The board determined the experience level of the front seater was such that the IP was virtually single pilot. This happens more often that we would like to admit and must be addressed when training young aviators. Hard decks, slant range restrictions, and crawl-walk-run philosophies are basic tools to help mange the risks.

Don't depend on luck

A troubling part of being a CRC investigator is that you see the mistakes of others and they remind you of the ones you made in the past. Fortunately, my mistakes didn't lead to any serious accidents. I was just lucky. Unfortunately, I now know that you can't depend on luck to prevent accidents. Good risk management; a sound, well-understood safety philosophy; and, perhaps most importantly, leaders in the right place at the right time are what prevent accidents. I hope what is written here will help readers avoid some of the mistakes others have made without having to depend on luck. ♦

—LTC McInnis retired from the Army in 2004 and currently works at the U.S. Army Aviation Technical Test Center at Cairns AAF, AL. He may be contacted at william.mcinnis@us.army.mil.

NEWS & notes

Individual Soldier Hemostatic Dressing

Effective immediately, the Chitosan dressing, NSN 6510-01-502-6938 for the package of one and NSN 6510-01-503-8726 for the package of five, is the approved individual Soldier hemostatic dressing. Each Army Soldier deployed to the CENTCOM AOR will carry one Chitosan dressing; each combat lifesaver will carry three Chitosan dressings; and each 91W (combat medic level I and II) will carry five Chitosan dressings as part of their aid bags. Priority of issue is to the combat medic, combat lifesaver, and then the individual Soldier, in that order. In FY05, and until theater stockage is sufficient to meet the above-stated requirement, issue three Chitosan dressings to each combat medic Level I and II and three to each combat lifesaver.

The issue of Chitosan dressing for currently deployed Soldiers will be by unit requisition in theater and then, when received, direct issue to their Soldiers. Issue to newly deployed Soldiers will occur during RSOI operations.

Quikclot may still be used but IAW ALARACT 016/2003 Army policy states, "Intended users are medical care providers to include medics, if properly trained."

Funding will be provided by FORSCOM as the executive agent for sustainment in OIF/OEF.

The POC for medical policy issues is COL William Tozier, OTSG/MEDCOM, at DSN 471-6525 (210-221-6525), or e-mail william.tozier@us.army.mil; the POC for logistics is LTC Robert May at DSN 761-1973 (703-681-1973) or e-mail robert.may@us.army.mil. ♦

USAREUR Begins Winter Safety Campaign

The U.S. Army Europe's (USAREUR) winter safety program will run from 1 October 2005 through 30 April 2006. European winters present a wide range of hazards, including carbon monoxide poisoning, driving on black ice, cold-weather health hazards, and treacherous winter driving and flying conditions.

The campaign's purpose is to reduce accidental injuries and deaths to Army Soldiers, civilians, and local national employees, and to also protect Army assets.

For more information, visit the USAREUR Safety Web site at **http://www.per.hqusareur.army.mil/services/safetydivision/usareur_winter_safety_campaign.htm.** ♦

BETTER TO HAVE A DAMAGED EGO THAN A DAMAGED AIRCRAFT

CW3 Julio Morales
3-10th Aviation
Fort Drum, NY

The mission was a simple one. We were to fly a CH-47D from Camp Humphreys, Korea, to an antenna outpost about 1½ hours south of our location, pick up a few Soldiers and two connexes, and then fly them down to their support base. We departed Camp Humphreys on time with a CW2 as the pilot in command (PC), a CW3 who was an OH-58A/C instructor pilot with a lot of experience in that aircraft but brand new to Chinooks, and me, a CW2 at the time with about 250 hours of total flight time.

The PC and CW3 were to fly the first leg of the flight to the support unit's base and make final coordination with our point of contact there. I was to swap with the CW3 and fly the second leg of the flight. We departed the support base and headed up to the antenna site, which was about 3,000 feet up on the side of a mountain. The landing pad would have been big enough for the Chinook if it had not been for the connexes, so we decided to put the aft landing gear on the pad, load the passengers, and then pick up the first connex.

The passenger pickup went smoothly. They had been onsite for a few weeks and had not been able to enjoy any Korean cuisine, so they were happy to see us. After we had the passengers on board, the flight engineer loaded the hook without any problems using the aircraft shepperd's hook. We then descended down to the supported unit's base camp, delivered the first connex, and dropped off the passengers.

At this point, I swapped with the CW3 and took the left seat. We then departed the base and made the climb to the antenna site. I was on the controls, and the PC told me that 3,500 feet would be a good altitude to approach the pad. However, when the pad came into view I was already at 4,000 feet and too high to attempt an approach. I told the PC I was going to make a right descending turn and approach the pad from a lower altitude. As I made the turn, I turned my head to the left and down to make sure I had a good visual of the pad. When I turned my head to the right again, my world went upside down.

When I looked at my instruments, I realized I had placed the aircraft into a high rate of descent of more than 2,000 feet per minute and we were at approximately 150 knots indicated airspeed. I pulled aft on the cyclic and applied thrust to arrest the rate of descent and slow down our airspeed. I *felt* we were too nose-high, so I placed the controls back to their original position, which again put us at a high rate of descent and a higher airspeed than what I wanted.

I tried to get the aircraft back to a level attitude, feeling we were still too nose-high, but my instruments were telling me that we were diving. I knew there was something terribly wrong with me at this time. I remember telling the PC to take the controls and looking to the right side to verify that he took them. As he did, he gave me a strange look and asked if I was alright. I told him I was not feeling well. He said that my eyes looked like they were not "caged." Later he explained that my eyes were going around in my eye sockets but were not focusing on anything.

The PC continued to fly the mission to the pad, and we picked up the connex and dropped it off at the support base. We then headed home. The PC asked if I wanted to fly back home and I took the controls—even though I was not feeling 100 percent ready. Although we were flying visual flight rules (VFR), I kept a very close eye on my instruments on the way home. Afterward, I realized I had experienced spatial disorientation. I was lucky to be able to transfer the controls to the PC. Had I been flying single-pilot, this story might not have made it into *Flightfax*.

We are told throughout flight school to "trust your instruments." After being in this position, however, I can tell you that it's not as easy as it sounds. Making yourself do something when your body's instincts are telling you to do something else can be quite a task. I'm glad I had enough situational awareness to know that I needed help to get this situation under control.

Thinking back on the decision to take the controls and fly home when I was not 100 percent ready was also a mistake. I should've let the PC fly the aircraft back home. Unfortunately, my pride had been hurt and I had to prove myself to the crew. Many times we go that extra 30 seconds simply because we cannot or will not admit we've exceeded our capability or made a mistake or a bad decision. So we make an even greater mistake or worse decision. Thankfully, it worked out; but I was lucky.

Every time I fly now, whether it's VFR or IFR, I pay close attention to my head movements and avoid rapid head movements at all costs. I've learned a very good lesson—it's better to have a damaged ego than a damaged aircraft … or worse. ♦

—CW3 Morales can be contacted at julio.morales1@us.army.mil. He wrote this article as a class assignment while attending Aviation Safety Officer Course 05-002 at Fort Rucker, AL.

Accident Briefs

Information based on preliminary reports of aircraft accidents

AH-6

J Model

■ **Class E:** While performing aerial gunnery, the aircraft's CHIPS XMSN caution light illuminated. The aircraft landed to the rearm pads and shut down. Further inspection of the chip detector revealed chips in the transmission. The aircraft was trucked back to the airfield. The transmission was replaced, and the aircraft returned to service.

AH-64

A Model

■ **Class A:** The aircraft descended and impacted terrain during forward flight, striking a berm head-on. Both crewmembers suffered minor injuries, however the aircraft was destroyed.

D Model

■ **Class A**: While conducting close combat attack training, the aircraft impacted the ground. The frontseater suffered fatal injuries and the backseater suffered minor injuries.

■ **Class A**: While returning from a mission, the crew, while not communicating properly, unknowingly applied counteracting control inputs, resulting in loss of aircraft control. The aircraft crashed and the crewmembers sustained minor injuries.

■ **Class C**: The aircraft experienced an overtorque condition (130 percent for 1 second) during simulated engine failure. Maintenance replaced main transmission and tail rotor drive shafts, as well as the nose gearbox.

MH-6

J Model

■ **Class E**: The aircraft was Chalk 2 of a weapons test fire in combat. The pilot observed T/R TXMN CHIPS WARNING light and landed the aircraft. The tail rotor gear box chip detector was cleaned off and the pilot ran up the aircraft and the light did not illuminate. On approach, the crew observed the chip light illuminate again and landed at the airfield. Aircraft was shut down and maintenance was notified. The tail rotor gear box was replaced, and the aircraft was returned to service.

MH-47

E Model

■ **Class B**: During taxi to land, the "butterfly" cowling (to the right-side upper fan of the aft pylon) separated from the aircraft and flew into the aft rotor system, damaging all three rotor blades.

OH-58

A Model

■ **Class E**: During flight in gusty conditions on a hot afternoon, the LOW ROTOR RPM light and audio came on several times. Maintenance was unable to duplicate the fault, and the aircraft was released for flight.

D Model

■ **Class E**: At the completion of an autorotation during a normal ground run, the forward left cross tube broke. The aircraft was shut down without further incident, and maintenance replaced the cross tube.

■ **Class E**: During hovering flight, the pilot noticed the low fuel pressure light and conducted a precautionary landing. Maintenance replaced the fuel pressure switch, and the aircraft was released for flight.

UH-1

V Model

■ **Class B**: The contract instructor pilot perceived a hard landing during readiness training and elected to return the aircraft to the home station for inspection.

■ **Class E**: While preparing for precision approach radar (PAR), the pilot noticed the transmission oil temperature gauge indicated zero degrees. The pilot in command (PC) cancelled instrument flight rules (IFR) and made a straight-in visual landing. The aircraft landed without further incident.

UH-60

A Model

■ **Class C**: The crew experienced a No. 1 engine "hot start," with TGT spiking at 909ºC. An inspection revealed the No. 1 engine plug was still in place.

■ **Class E**: During a HIT check, the fire light and auxiliary power unit (APU) T-handle illumi-

nated while the APU was not operating. There were no other indications of fire. The aircraft was shut down. The sensor flame detector was replaced, and the aircraft returned to service.

■ **Class E**: While in NVG formation as Chalk 2, the stabilator auto unit mode failed. After pressing the AUTO MODE button once, the stabilator failed again. The crew returned to home base without incident and completed a normal shutdown. Maintenance personnel replaced the lower actuator and released the aircraft for flight.

■ **Class E**: During the No. 2 engine HIT check (anti-ice portion), the ANTI-ICE light illuminated and the TGT rose more than 130ºC. This exceeded the maximum 110ºC rise allowed for this check. The engine inlet anti-ice modulating valve was replaced, correcting the problem.

L Model

■ **Class C**: A suspected wire strike during flight resulted in main rotor blade damage.

■ **Class C**: During maintenance runup, the aircraft initiated an uncommanded yaw to the left, striking maintenance stands, and sustained sheet metal damage

■ **Class E**: On a short final to the runway, the aircraft experienced auto mode failure. The stabilator would not manually slew below 30 degrees, and the flight was terminated.

C-12

U Model

■ **Class C**: The aircraft was in cruise flight when it suffered a lightning strike. Post-flight inspection revealed damage to the weather radar radome.

C-26

B Model

■ **Class D**: While on a short final for landing, the aircraft struck a bird. The aircraft landed without further incident. The bird strike made a small dent in the leading edge of right wing.

■ **Class E**: At 11,000 feet mean sea level (MSL), aircrew had both hydraulic lights come on. The crew declared an emergency and landed without further problems.

■ **Class E**: During climb, the hydraulic lights illuminated and the pressure gauge went to zero. The crew performed emergency landing gear extension and landed aircraft.

RC-12

D Model

■ **Class E**: During cruise flight at 4,000 feet MSL, the No. 2 engine oil temperature dropped to zero and the crew returned to base and performed a normal landing. Maintenance replaced a faulty oil temp connector and released the aircraft for flight.

H Model

■ **Class E**: During a No. 2 engine start on battery power, the No. 1 engine N1 dropped to approximately 40 percent, resulting in the TGT rising to 740ºC. The aircraft was immediately shut down. Maintenance was notified and replaced a faulty starter generator on the No. 1 engine. The aircraft was released for flight.

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, call DSN 558-9552 (334-255-9552) or DSN 558-3410 (334-255-3410).

STUPID IS AS STUPID DOES

Got enough power?

20 knot tail wind + 20 knot ground speed = HOVER
Downwind approaches/takeoffs can require OGE hover power