Flightfax
ARMY AVIATION RISK-MANAGEMENT INFORMATION
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Flight into TRANSFORMATION

Flightfax

ARMY AVIATION RISK-MANAGEMENT INFORMATION

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U.S. ARMY SAFETY CENTER

US Army RAH-66
photos by:
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CONTENTS

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James E. Simmons
Brigadier General, US Army
Commanding

DASAF's CORNER

from the Director of Army Safety

Thanks for what you do everyday

Flightfax is frequently a vehicle where we openly discuss Army aviation in a critical manner as we describe failures of equipment or human error that resulted in tragic accidents, which in turn resulted in our accident rates climbing. We tend to share the bad news—and fail to balance it with the good.

Too often, we let numbers and rates be the focus of our stories. I'm setting the record straight: numbers and rates are but one measure of success. The real essence of Army aviation, and the Army itself, lies in its people. This month, I want to personally recognize and pay tribute to the dedicated, skilled professionals who make up our aviation units.

I could take just about any aviation unit in our Army and use it as an example of great training, outstanding leadership, or even superior maintenance. Based on limited space, I would like to briefly talk about just two shining examples of our great aviation units.

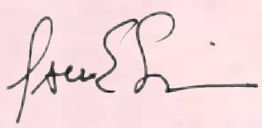
First, I would like to recognize the outstanding soldiers and leaders in the 160th Special Operations Aviation Regiment. It is no secret that this unit clearly represents the idea of tough, tactical training that produces a truly combat ready outfit. I am routinely in absolute awe of what these aviation professionals consider a routine mission. For years, they have led the way in the development of night operations and precision flying. You do not accomplish what this unit has, and continues to accomplish, without technically and tactically competent leadership. We should be proud that "US Army" is stenciled on the left breast pocket of each our 160th soldiers.

Second, I would like to reflect on some of the great things that are going on in the l01st Airborne Division. Led by a great Army Aviator, MG Dick Cody, the 101st routinely sets the standard for real air-ground integration. The air assault concept was developed in the 1960's, but I think it has reached its most effective state with the outstanding training that is currently underway in the division. Integrating sound maintenance procedures has increased their ability to train more realistically and with more frequency. When you couple the mobility of the aircraft and the toughness of the infantry soldiers in the 101st, I think you have an unstoppable combination.

Both of these units push the envelope in training and preparation for combat. My hat is off to them. I am proud every day when I watch the news and read the reports of the exploits of these units in the current conflict.

To all the great soldiers in the 160th Special Operations Aviation Regiment, in the l01st Airborne Division, and in all of our other outstanding aviation units, thanks for what you do every day. With great pride, determination, and professionalism, you fulfill your commitment to keep our nation safe, strong, and free. "Above the Best" isn't just our aviation song, it is what you are. **Train Hard—Be Safe**!

BG Simmons,
Director of Army Safety



Aviation in the 21st century

Transformation accelerated

An accelerated aviation modernization plan predicts that by the end of 2004, the Army's operational fleet will consist of only four types of helicopters: the AH-64 Apache, the UH-60 Black Hawk, the OH-58 Kiowa Warrior, and the CH-47 Chinook.

The AH-64 Apache is the Army's attack helicopter. By the end of 2002, attack helicopter battalions in heavy divisions will be restructured from 24 to 18 AH-64 Apaches. Corps level attack battalions will be converted from 24 to a maximum of 21 aircraft.

The UH-60 Black Hawk will remain the foundation of the Army's utility helicopter fleet. To have the capability required for the Objective Force, the Army will continue to recapitalize and upgrade the UH-60.

The CH-47 Chinook will continue to provide medium/heavy lift capability for the foreseeable future. The CH-47F model upgrade program is slated to begin in early 2003.

For the long-term, the RAH-66 Comanche remains the Army's highest aviation priority and is the centerpiece of Army aviation objective force transformation. Comanche will provide the commander on the ground with more timely and accurate information about tactical situations. Comanche provides the ability to orchestrate devastating firepower and synchronize mobile security, even in the most challenging operational environments.

The plan, the result of a two-year effort, contains specific guidance to accelerate the retirement of older, "legacy aircraft" from the Vietnam era. It allows the Army to compress the procurement timeline of the Comanche aircraft and moves newer helicopters into National Guard and Army Reserve units sooner.

The Chief of Staff of the Army has established a goal of attaining a 90 percent mission capable rate, in contrast to the current fleet average of 75 percent.

The Army's plan will reduce the total number of aircraft by more than 400 in the active force, and 600 in the reserve forces. This includes accelerating the retirement of the UH-1H Iroquois "Huey" helicopter and of the AH-1F Cobra attack helicopter.

—adapted from an Army news release

This just in: "Aviation Transformation Update"

An Aviation Transformation strategy was briefed to the Chief of Staff of the Army (CSA), GEN Eric Shinseki on 4 January 2002. The briefing finalized the Army Aviation Interim Transformation Structure, and presented a detailed implementation plan. The CSA approved the implementation plan, starting in FY02. The implementation plan included funding associated with transformation, elimination of Fort Rucker IERW backlog, and limited aviation unfunded requirements (UFRs) associated with transformation.

There are four open issues requiring further effort and staffing associated with transforming aviation to the interim structure:

- A strategy and feasibility analysis to achieve a 90% mission capable rate in Army aviation.
- A complete review of TDA aircraft distribution plans to include the CTCs, ATEC, and MEDEVAC.
- TRADOC in concert with the DA Staff is developing and O&O plan that will set the required capabilities for our fixed wing force and where it can best be positioned to meet operational requirements.
- Detailed memorandums of agreement (MOA's) between Active and Reserve Component aviation units to facilitate aircraft transfers.

The Army's Aviation transformation to the interim force structure focuses resources on maintaining our war fighting capability by divesting of legacy aircraft and investing in objective force systems and capabilities.

Safety and the Army Transformation Campaign—RAH-66 Comanche Design

The overarching theme of the Army Transformation Campaign is that the soldier is centric to all future combat systems. The Manpower and Personnel Integration (MANPRINT) Program is the Army's executive safety program for ensuring the soldier is centric during materiel development. The RAH-66 Comanche is the Army's model MANPRINT program. Comanche is making great strides in Human Engineering, System Safety and Soldier Survivability.

Human Engineering

Human Engineering ensures that aviators, maintainers, and support personnel are all being considered in the RAH-66's development. Comanche's design will mitigate many hazards that have caused accidents in legacy aircraft. Aviation ground support systems are also being considered as part of the Comanche's overall development process. Improvements include integrated work platforms, onboard Fault Detection/Fault Isolation (FD/FI) diagnostics, and modular Line Replaceable Units (LRU). Identifying operational challenges, considering them during the design phase, and engineering systems that mitigate or eliminate hazards reduces the risk to the soldier.

System Safety

System Safety is the process of mitigating risk by controlling hazards through design. Comanche is applying this philosophy to force protection. While adaptation of System Safety principles has led to fewer physical hazards, new and often more complex hazards involving the human-to-machine interface are emerging. Situational Awareness and Soldier Machine Interface (SA/SMI) requirements and expectations are among these. The ability to gain and maintain information dominance in the future's battle space requires the soldier to receive, analyze, and transmit large amounts of digital information. The RAH-66 Comanche's Mission Equipment Package (MEP) provides a glimpse into the future of SA/SMI for the Army. Correct development and integration of future combat system's SA/SMI is critical to the

safety of our soldiers. The ability to gain and maintain information dominance will be key to mitigating risk on the digital battlefield.

Soldier Survivability

Soldier Survivability describes the characteristics of a system meant to reduce fatigue, detectability, damage, injury and fratricide. The Comanche is designed to minimize these factors.

Fratricide is the most complex challenge. The ability to provide an accurate common operating picture to all members on the digital battlefield will greatly reduce the possibility of friendly fire incidents. A soldier who is overwhelmed with information will quickly become combat ineffective and inevitably induce fratricide hazards into the digital battlefield. The soldier must remain in the decision loop; however, some decisions that are based on correlation of factual data will be automated. Routine decisions will be made by onboard software and executed. Critical tasks requiring human intervention will be presented to the pilot for a decision. Comparable technologies are also being applied in the areas of supportability. Embedded Fault Detection/Fault Isolation self-diagnostics will all but eliminate troubleshooting procedures while Line Replaceable Units will reduce aircraft downtime and the maintainer's workload.

One of the primary goals of the program is to increase situational awareness and reduce pilot workload through automation. Automation, in the form of the Aided Target Detection Classification system (ATDC) as well as the Automated Flight control system (AFCS), means the aircraft is going to be there for them.

Comanche will empower the commander, leader, aviator, and maintainer to project a more capable, integrated, and lethal force. The result of this will be more decisive engagements and increased force protection. *We don't want a fair fight.* The ability to dominate the enemy both physically and mentally is the goal. Comanche pilots as well as other future combat system operators will benefit from equipment that is being designed with them in mind.

—CW3 Mark A. Martin, Assistant, TSM-Comanche MANPRINT/System Safety Officer
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Is the glass cockpit safer? Researchers look at accident rates

Digital technology is the wave of the future for Army aviation. On the crest of this wave is the use of multifunction displays (MFDs) to replace traditional dedicated cockpit instruments. These MFDs integrate the information previously provided by electro-mechanical instruments, with the speed and processing power of microprocessors and the adaptability of cathode ray tubes (CRTs) and/or flat panel technology displays.

A single MFD can be configured to provide some or all of the information needed for navigation, communications, weapons systems management, and aircraft control. The cockpit design based on MFDs has given rise to the phrase "glass cockpit."

Automation and the glass cockpit design have been in use in commercial aviation for some time with great success and increased safety. However, Army helicopters fly entirely different missions in more demanding flight environments. Therefore, it is reasonable to ask if the current trend in cockpit redesign has been a safe and successful one for Army aviation.

To take the first step in answering this question, researchers at the US Army Aeromedical Research Laboratory (USAARL),

working in collaboration with the US Army Safety Center (USASC) and the Aviation Branch Safety Office (ABSO), compared accident rates for models having traditional dedicated instrument cockpits, and those having glass cockpits.

The US Army has integrated the glass cockpit design into four aircraft series: the AH-64 Apache, the UH/MH-60 Black Hawk, the CH/MH-47 Chinook, and the OH-58 Kiowa. The glass cockpit models of these aircraft are designated as the AH-64D, MH-60K, MH-47E, and OH-58D. In addition, there are two hybrid crewstation configurations that mix MFDs and dedicated instruments, the MH-47D and the MH-60L.

The accident frequencies and flight hours were obtained from the Risk Management Information System (RMIS) maintained by the USASC. Accident rates were calculated for several different time periods. However, rates based only on the period for which accident data and flight hours were available for all aircraft models investigated (FY98-FY00) were considered to be the best rates for comparison. These rates are presented in the accompanying chart. Accident rates are expressed as accidents per 100,000 flight hours.

The highest accident rate across all models in the study was 23.00 for the glass cockpit AH-64D; the second highest accident rate was 21.32 for the hybrid cockpit MH-47D. For dedicated cockpit models only, the highest rate was 18.36 for the AH-64A. For the two hybrid models, the highest rate was 21.32 for the hybrid cockpit MH-47D. The highest glass cockpit rate was 23.00 for the AH-64D.

An inspection of the chart shows that glass cockpits models had greater accident rates as compared to dedicated cockpit models for three of the four aircraft series. The exception is the CH/MH-47, where the rate for the hybrid model is greater than for both the dedicated and glass cockpit models.

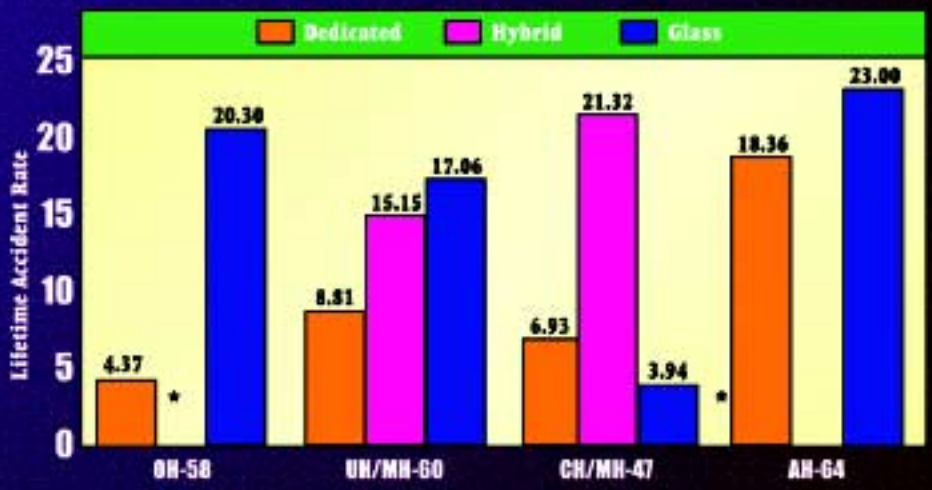
Taken overall, the findings of this study suggest that there is reason to be concerned that aircraft with hybrid or glass cockpits have higher accident rates than aircraft with traditional dedicated cockpits. However, great care must be taken in drawing this conclusion.

First, statistical tests found that the higher glass cockpit rates were significant *only* for the OH-58D. There were insufficient flight hours for the other glass cockpit models to make their higher rates statistically significant.

Finally, higher accident rates for glass cockpit models *do not* imply that the cockpit design alone is the cause. There are several other possible explanations. These include: differences in aircraft handling qualities, added systems that increase workload, poor organization of data on the MFDs, or perhaps, aircraft models with enhanced capabilities, such as the use of MFDs, engage in riskier missions.

The complete accident study can be viewed at **www.usaarl.army.mil** by entering the Technical Reports section and searching for USAARL Report No. 2001-12.

—Clarence Rash, physicist, USAARL, DSN 558-6814 (334) 255-6814, Clarence.Rash@se.amedd.army.mil



Note: Asterisk denotes no hybrid model exists for this aircraft series. Accident rates for all accident classes combined by aircraft series for FY98-FY00.

Recapitalization program upgrades UH-60s

In 1978, when the first UH-60A Black Hawk rolled off the production line, the Army had its first new utility helicopter since the UH-1 Iroquois (Huey) was introduced in 1959.

The Army originally planned to build a new aviation system every 20 years because that's about how long it can safely expect an aircraft to last the rigors of training and battle. Now, however, the Army plans to retire all UH-1Hs by the end of FY04, but there is no new utility helicopter in the works to replace the Black Hawk. So what's an Army to do if it intends to have utility aviation support in the Objective Force of 2020? The answer is recapitalize the Black Hawk: strip it down to its airframe, rebuild it with components to meet the Army's current and future operational requirements and give it at least 20 more years of life.

That's a tall order. Today's Army has 964 UH-60As and about 567 UH-60Ls. The main differences between the two models are the UH-60L has T-701C engines with more horsepower than the A model's T-700 engines. The L model also has an improved durability gearbox.

"Black Hawk recapitalization will be a blocked, evolutionary approach" according to COL Bill Lake, Utility Helicopter's project manager at the US Army Aviation and Missile Command (AMCOM). Because the UH-60 is the Objective Force utility aircraft, we have developed a program to rebuild the Black Hawk to give it better capabilities, more durability, and 20 years more service to our Army.

This recapitalized Black Hawk, designated the UH-60M, will use some components of the older A and L model's, such as the Improved Durability Gearbox, that can be expected to support it through its new life cycle. The UH-60M will include many new features such as the more efficient T-701D engines, the Wide Chord Blade main rotor system, improved crashworthy seating, an integrated cockpit with digital displays, improved digital flight control computers, Dual Embedded Global Positioning and Inertia Navigation (EGI), active vibration suppression, improved aircraft survivability equipment, improved transportability, and a redesigned and fully crashworthy main and auxiliary fuel system.

Last year the Defense Acquisition Board gave the UH-60M recapitalization effort a green light to proceed toward system development and demonstration. Four prototype UH-60Ms will be produced under a contract awarded to Sikorsky by AMCOM in May 2001. Under this contract, Sikorsky will convert a UH-60A into a UH-60M, a UH-60L into an M model, a UH-60A (medical evacuation) into an M model, and build a new production M model from scratch.

Currently in its development and demonstration phase, UH-60M will enter low-rate initial production in FY04 and eventually increase production to about 90 aircraft per year until 2020. A total of 1217 UH-60A and L aircraft will be recapitalized to the UH-60M. New built UH-60M will be "cut-in" to the existing UH-60L production line in order to grow the Utility Helicopter fleet size to meet interim and objective force requirements.

The introduction of the UH-60M means more than just another 20 years of life for this utility workhorse. The M model will bring increased operational capability to our utility helicopter fleet while reducing operation and support costs by more than $500 per flight, hour compared to the A model.

Black Hawk REBUILD

Black Hawk update

Teardown has begun on the first three Army Black Hawks slated for upgrade to the new UH-60M configuration.

The two UH-60As and one UH-60L mark the first aircraft officially inducted into the Army's comprehensive Black Hawk recapitalization program.

The first aircraft scheduled for upgrade is a UH-60A manufactured in 1985. It last served with the 507th MEDEVAC at Fort Hood, Texas. The second is a UH-60L from Fort Stewart, Ga. that was built in 1989. The last is a UH-60A manufactured in 1977 that was the third production Black Hawk to roll off Sikorsky's assembly line. It last served the Naval Test Pilot School in Patuxent River, MD. It will be upgraded to the UH-60M MEDEVAC configuration.

Sikorsky will also install a new glass cockpit with four multi-function displays, two control display units, a modern flight control computer, a new avionics suite, and a narrower instrument panel that will significantly improve chin bubble visibility. In addition, the aircraft will be fitted with a new cabin and transition section that uses high-speed machine frames, which reduce the cost and complexity of the cabin.

The UH-60M composite spar wide-chord blade will provide 500 pounds more lift than the current UH-60L blade. The new General Electric T700-GE-701D engine currently under development by the Army will add an additional 400 to 500 pounds lift.

The maiden flight of the first UH-60M is scheduled for 2003. After completion of the first four aircraft, work on the initial production UH-60M aircraft will begin in 2004, and will eventually increase to 90 aircraft inducted per year by 2012.

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Letter from the field – Airborne Weather Radar

The November issue of Flightfax Magazine included an article titled "More or Less on Radar." The article describes an airborne procedure in which the pilot can allegedly determine the strength of the Electro Magnetron Tube (EMT). This is not an OEM or Army approved procedure nor is it a valid/accurate method to determine EMT power.

PM Fixed Wing has researched this procedure and queried several Wx radar OEMs, and numerous aviation radar experts/engineers to include Steve Sweet from Honeywell and Archie Trammell. Their comments are summarized below:

- Not a valid procedure.
- Procedure could show reduced power levels, however, reduced power levels could be the result of a bad receiver, RADOME, Magnetron or several other components in the radar system.
- Procedure is not accurate - degree of error is so large, it could show new radar with 100% power, only producing 70% power.

Many pilots have the understanding that because this was published in Flightfax, that this procedure is OEM and/or Army approved. OEM procedures are currently the only approved way to check for proper operating Wx radars. This can only be done with approved test sets or through OEM bench tests. Since this article was published, the field has seen a surge of Wx radar write-ups in the logbooks, with the Flightfax procedure the reason for the write-up. This is having a detrimental impact on readiness and O.R. rates.

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EDITORS NOTE: **All technical articles published in Flightfax are thoroughly reviewed for correctness. The staff consults a variety of SMEs in an effort to preclude printing any misinformation, however, at no time should it be construed that an article published in Flightfax supercedes Army doctrinal publications to include FM's, TM's or AR's.**

Commanders Safety Course mandatory before taking unit command

A new Commanders Safety Course for officers, selected to command units from company through brigade, will give commanders the tools they can use to build their unit safety programs through all levels of command.

Completing the Commanders Safety Course will become a pre-command requirement once it comes online within the next three months.

The idea behind the course is to allow a brigade commander to know that his company commanders, by completing the course, have been grounded in building and conducting unit safety programs.

Those officers selected for battalion and brigade command will also be required to complete the course before beginning the Pre-Command Course at Fort Leavenworth, KS.

"This program is also for the young lieutenant who has not had any safety training and he's saddled with being a collateral duty safety officer," said Dwight McLemore, Training and Doctrine Command Safety Office. "He can learn how to do his additional duty job really fast, and he meets the pre-command requirement, too."

But it's much more than a safety course, according to LTC Steven Foley, Schools Division Chief, Training and Doctrine Command.

"The Army leadership told us to give commanders, command sergeants major and first sergeants the tools and knowledge to implement and manage a unit safety program to incorporate risk management in everything they do," he said.

Risk Management is the first tool. According to Foley, this program helps identify hazards as well as control measures to minimize risk involved in unit and individual actions and duties.

The second one is the Unit Safety Program. It uses an example of an outstanding unit safety program from the 2nd Airborne Brigade, Fort Bragg, which was approved by the Forces Command Inspector General. Students will be able to build their own unit safety program using data gathered from an enormous Army safety program reference list.

The last tool is a resource navigator, a portal through the Army Safety Center. The navigator contains the URL (Uniformed Resource Locator) links to "just about everything about safety that we can identify," Foley said. "That means if I'm writing a risk management assessment for a road movement, I look up control and hazards for that activity," Foley said. "If some other guy elsewhere who's using the tool at the same time thinks up hazards that I didn't think of, my computer will be automatically updated with those hazards." That happens because the tool is collecting and storing data, not only internally to the local area network, but also externally in a large data bank that will be part of this program. Users will be able to take those tools with them after completing the course, by either downloading from the Reimer Digital Library, or by requesting a CD-Rom from the Army Training Support Center at Fort Eustis, VA.

The Commander's Safety Course was created as a result of a directive from Gen. Eric K. Shinseki, Army Chief of Staff, to the Army Safety Center and TRADOC. He wanted a course that could help commanders identify and reduce needless accidents and deaths of our soldiers. He also wanted a course that would qualify an officer, sergeant major or a first sergeant to perform safety program duties and invigorate risk management training and programs within the institutional and operational Army.

—Jim Caldwell, TRADOC Public Affairs Office

(Editor's note: The Safety Center is the proponent for the course. Dr. Brenda Miller developed the Program of Instruction and TRADOC built upon that to develop the distance learning product.)

Care and feeding of your OH-58 Data Transfer devices

The OH-58D is equipped with a Data Transfer Cartridge (DTC) or a Data Transfer Module (DTM). These cartridges transfer and store mission planning data. A portion of the cartridge is also used to record real-time flight data and can be extremely useful in providing data in the event of an accident or incident. In many cases the data output has served as an analytical maintenance tool for the maintenance officer or aviation safety officer. In numerous cases, analysis of the data confirmed that limits were not exceeded during an incident. Normally, the end result was that data confirmed that a component did not need to be replaced.

Data extracted from the cartridge can also be used to simulate the last minutes of flight during accident investigations. For example, on request, the US Army Safety Center (USASC) can convert data sets into a flight visual program using *FlightVis*®. This capability is extremely useful during accident investigations or pilot safety and standardization meetings and mishap debriefings. The program recreates flights using real-time datasets generated from decompressed data files from the DTC/DTM.

It's only as good as it is maintained

During several recent OH-58D accident investigations, the DTMs/DTCs were found to be blank or void of useable data when post accident download was attempted at the USASC. Inspection of these cartridges indicates units are *not* complying with the guidance in OH-58-00-ASAM-03 (False Engine Out Warnings).

In addition to providing guidance on false engine out indications, the purpose of this ASAM is to also ensure batteries for the data transfer cartridges are replaced on a regular basis so that data is accurately recorded.

If available, a DTC/DTM should be installed prior to every flight. Batteries will be replaced every 30 days and the 30-day battery requirement will be annotated on a label attached to each DTC. There is no standard for labeling; however, the cartridges should be annotated with the date of the last battery change and this should be checked on preflight inspections.

Many units have varying policies on DTC/DTM use and storage/handling. In some units, they always remain in the aircraft, and in some units, the DTC/DTMs are issued by operations personnel, much like aircraft keys. Regardless of the way your unit controls DTC/DTMs, the bottom line is you should insure the battery has been replaced every 30 days. Remember, the DTC/DTM is only as good as it is maintained.

In the event of an accident, secure the accident scene and *do not* attempt to remove the DTC/DTM from the aircraft unless instructed to do so by the accident investigation team. *Do not* attempt to apply power to the cartridge or otherwise read data or transfer data. If the DTM/DTC has been removed it will be secured IAW AR 385-40. Prior to mailing the cartridge to the USASC, call DSN 558-3410/2660 for shipping and handling instructions.

—Major Mike Cumbie, Aviation, USASC and Doyle N. Wootten, Flight data recorder analyst, COBRO, US Army contractor, doyle.wootten@safetycenter.army.mil

Plan Annual Training With Safety In Mind

Well, it's that time of year again. The annual training plan and training calendar have long been submitted and approved, and now it's time to start detailed planning for annual training (AT).

In order for the reader to gain the proper perspective on this issue, understand that Army Reserve (AR) and National Guard (NG) soldiers do not conduct training like their active duty brethren. Our active duty contemporaries usually train every day. While we adhere to the same tasks, conditions, and standards, our program requires breaking the tasks into blocks lasting about two days, sandwiched around two-to-four week periods of "leave." It is the lack of continuous training time, in a highly technical/tactical skill with no equivalent in the civilian job market, that makes AT no simple task. This is a real challenge for Reserve Commanders.

Each AT session represents a period of intense training. Leaders need to remind their soldiers that they are accountable for their actions, and self-disciplined performance to standard can have the greatest impact on accident prevention. Planning with safety in mind is a sure-fire prerequisite to successful training.

Command Climate

The first step is to develop a command climate that permeates safety throughout the organization. Make it clear that standards must be adhered to, and that supervisors enforce them. This philosophy has to start from the top, and be executed from both—top down and bottom up.

FM 100-14, *Risk Management*, states that risk management must be integrated into mission planning, preparation and execution. Leaders and staffs must continuously identify hazards and assess both accident and tactical risks, then develop and coordinate control measures. This process applies to AR/NG units as well as active component units.

Supervision

Tough, realistic training conducted to standard is the cornerstone of Army warfighting skills. Our mission demands high-intensity field training in a realistic combat environment, and the potential for accidents is high. As leaders, you've been around long enough to see fenders dented, fingers pinched, and ankles twisted. Unfortunately, some leaders have seen worse—and have attended the funerals that resulted. Supervision is the key to preventing accidents. Simply put, leaders can reduce accidents by consistently enforcing standards in training and discipline.

Rules to remember

Rule No.1: No unnecessary risk should ever be accepted. The leader who has the authority to accept a risk has the responsibility to protect his soldiers and equipment from unnecessary risk. A risk that could be eliminated or reduced and the mission still be accomplished is an unnecessary risk and must not be accepted.

Rule No. 2: Risk decisions must be made at the appropriate level. The leader who's going to have to answer if things go wrong is the leader who should make the decision to accept

or reject the risk. In some cases, that will be a senior officer. In many cases, it will be a first-line leader. Small-unit commanders and first-line leaders are going to make risk decisions in combat; as much as possible, they should make risk decisions in training.

Rule No. 3: The benefits of taking a risk must outweigh the possible cost of the risk. Leaders must understand the risk involved and have a clear picture of the training benefits to be gained from taking the calculated risk.

Advantages of risk management for leaders

- Detect risks before losses.
- Quantify risk.
- Provide risk control alternatives.
- Better decisions.
- Greater integration of safety.
- Increased mission capability.

Risk management is, in reality, a smart decision-making process, a way of thinking through a mission to balance training needs against risks in terms of accident losses. Once understood, it is a way to put more realism into training without paying a price in deaths, injuries, and damaged equipment.

The US Army Reserve Command (USARC) teaches risk management four times annually and the Army Safety Center can assist with risk management instruction on a unit-by-unit basis.

—POC: LTC Keith M. Cianfrani, USAR Advisor, DSN 558-9864 (334-255-9864), keith.cianfrani@safetycenter.army.mil.

WANTED

UH-60 PILOTS interested in receiving laser surgical correction for refractive error and participating in a rated Army aviator study. The US Army Aeromedical Research Laboratory and the Walter Reed Refractive Research Center have initiated a study to evaluate the use of refractive surgery for active duty, rated aviators within Army aviation.

What is the Rated Aviator Refractive Surgery Study? This study is a two-year prospective evaluation of the efficacy and safety of keratorefractive surgery in rated Army aviators. This study will evaluate standard, FDA approved photorefractive keratectomy (PRK) and laser in-situ keratomileusis (LASIK) procedures to determine whether PRK and/or LASIK are compatible with the Army aviation environment.

It has been estimated that 24-39% of rated Army aviators require optical correction for flying duties, and refractive surgery, of any type, is not permitted in Army aviation. This makes the use of spectacles or contact lenses essential for clear, undistorted vision, but the loss or displacement of these correction devices can cause difficulties during flight. Additionally, spectacles reduce compatibility with NVGs and HMDs.

What are the qualifications required to get into the study?
To qualify as a candidate you must be an active duty, rated aviator of a UH-60 aircraft, be between the ages of 22-50; meet all current FDME requirements; suffer from near-sightedness, far-sightedness and/or have astigmatism; and desire to have laser surgical correction of your refractive error. Candidates must not have any aeromedical waivers for visual conditions other than the requirement to wear corrective lenses (you may have a waiver to wear contact lenses).

Interested?
Contact USAARL for more information:
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NEWS & notes

3rd Annual AGSE Users Conference 3-7 June 2002 At Fort Campbell, Kentucky

The Aviation Ground Support Equipment (AGSE) Weapons Systems Management Office, Redstone Arsenal, Alabama will host the **Third Annual AGSE Users Conference 3-7 June, 2002 at Fort Campbell, Ky.**

The theme this year is "Focus on the User." Attendance is intended for Aviation Officers, NCOs, and enlisted personnel from throughout the Aviation Community. The focus on Thursday, 6 June is on the maintainers. Issues important to the community will be collected for discussion at the conference. Email user issues NLT 6 April 2002 for inclusion. For more information on the conference, housing options, display availability, or user issues - email Major Hank Isenberg at **henry.isenberg@redstone.army.mil**, or Doug Cowart at **doug.cowart@redstone.army.mil.**

Army Knowledge Online features Flightfax

Have you logged on to your Army Knowledge Online (AKO) account? AKO is the Army's portal for soldiers and civilian employees worldwide. Along with all its other useful features, you can get *Flightfax* and *Countermeasure* and other benefits from the US Army Safety Center website, right there on AKO. Here's how:

1. Log on to AKO.
2. Scroll down the left column to SPECIAL STAFF.
3. Click on SAFETY.
4. Click on the Safety drop down.

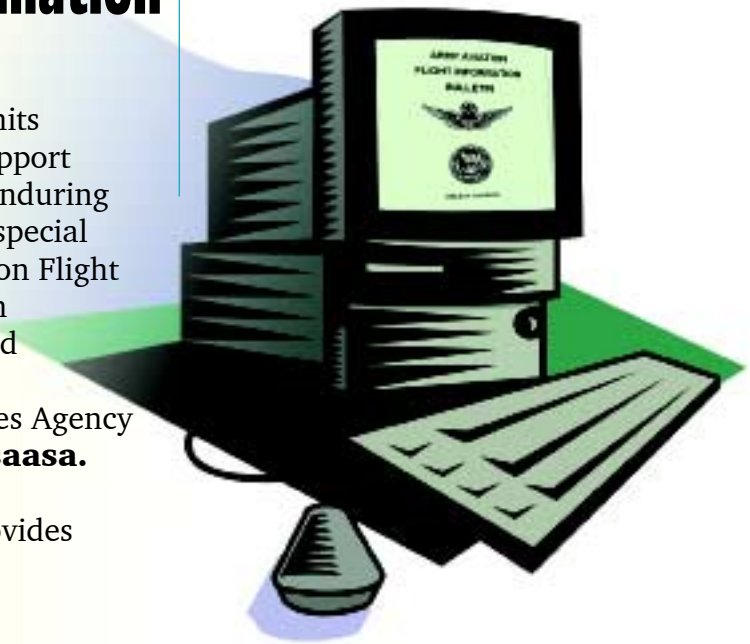
You're there!

Special edition Flight Information Bulletin

Army aviation units operating in support of Operation Enduring Freedom can use a special edition Army Aviation Flight Information Bulletin (FIB) recently posted to the US Army Aeronautical Services Agency website at **www.usaasa.belvoir.army.mil**

This bulletin provides operational support for Army units deployed into the CENTCOM AOR in support of Operation ENDURING FREEDOM. Subjects covered in this special FIB include Instrument flight procedures policy, FM immunity issues, Flight Information Publications, Flight Inspections, IMC recovery and NOTAMS.

Units may download and print copies as needed. Updates to this Special Edition will be published in future editions of the quarterly FIB, and on the USAASA website. Comments and questions concerning this Special FIB should be directed to LTC Owens at DSN 656-4872/4882, Comm (703) 806-4872/4882 email: **owensb@belvoir, army.mi**l Or you may write to: **Commander, U.S. Army Aeronautical Services Agency, ATTN: ATAS-AI, 9325 Gunston Road, Suite N319, Fort Belvoir, VA 22060-5582.**



ACCIDENT BRIEFS

Information based on preliminary reports of aircraft accidents

AH-6

Class B
J model

■ While conducting day live-fire team gunnery training, during a left break from a diving fire engagement, aircraft's engine and rotor RPM decayed. Due to low altitude, higher than normal rate of descent, and engine droop recovery time, the PI was unable to arrest the rate of descent. The aircraft impacted the ground at approximately 40 knots in a near level attitude and rolled over, coming to rest on its right side. The aircraft was extensively damaged and the crew received minor injuries.

AH-64

Class E
A model

■ After flight, maintenance personnel found damage to three tail rotor blades. On previous flight aircraft landed at an unimproved landing site. The remainder of the flight was 200 feet or greater above the highest obstacle. There was no evidence of a tree or bird strike. Suspect damage was caused by object blown into tail rotor on landing. Damage classified as fair wear and tear (FWT). Tail rotor blades were replaced, the maintenance operational check was performed, and aircraft was released for flight.

C-12

Class E
R model

In cruise flight, FL210, OAT -20 C, light freezing precipitation and light turbulence, pilot's outer windscreen cracked and then spider-webbed. Aircraft was landed at home base without further incident. Windscreen was replaced and aircraft returned to service.

C-26

Class E
B model

■ On take-off in Instrument Meteorological Conditions at 400 feet, the PC initiated a right turn as assigned by ATC. In the right turn at about 800 feet above ground level the right engine firelight illuminated. The firelight remained on for about 10 seconds. The turn was stopped and the aircraft leveled off at 2000 feet. The crew completed an instrument approach. Maintenance found the right hydraulic pump by-pass line lying against the lower 45 degree detector. Maintenance repositioned the by-pass line.

CH-47

Class C
E Model

■ Aircraft was damaged during landing to an unimproved site. Right rear wheel penetrated the surface of the earth. Ramp and landing gear damaged.

OH-58

Class E
D model

■ While in cruise flight, FE noticed hydraulic fluid seeping. The No. 2 flight control hydraulic system was low. The crew made a precautionary landing and found the No. 2 flight boost pressure line seeping at a junction. Maintenance replaced the T-fitting and aircraft was released for flight.

Class B
DI model

■ Aircraft drifted rearward during a simulated Hellfire missile engagement. Postflight inspection revealed damage to two main rotor blades, vertical fin, and fuselage. The replacement of aircraft components was completed and aircraft was released for flight.

Class C
DI model

■ Aircraft experienced hard landing during snow qualification training.

Class E
DR model

■ During engine run-up, crew chief (CE) informed pilot that they were leaking fluid from the aft section of the aircraft. After shutdown the crew found that the transmission drain valve had been left open, CE closed valve and refilled transmission sump. Upon second cranking attempt, CE informed pilots that the aircraft was still leaking fluid. Aircraft was shutdown once again. The crew found that a transmission line in the previously serviced area was not torqued properly, but was only hand tightened. Maintenance cleaned up spilled fluid, and tightened line to proper torque. After maintenance flight, aircraft released for flight.

RAH-66

Class C

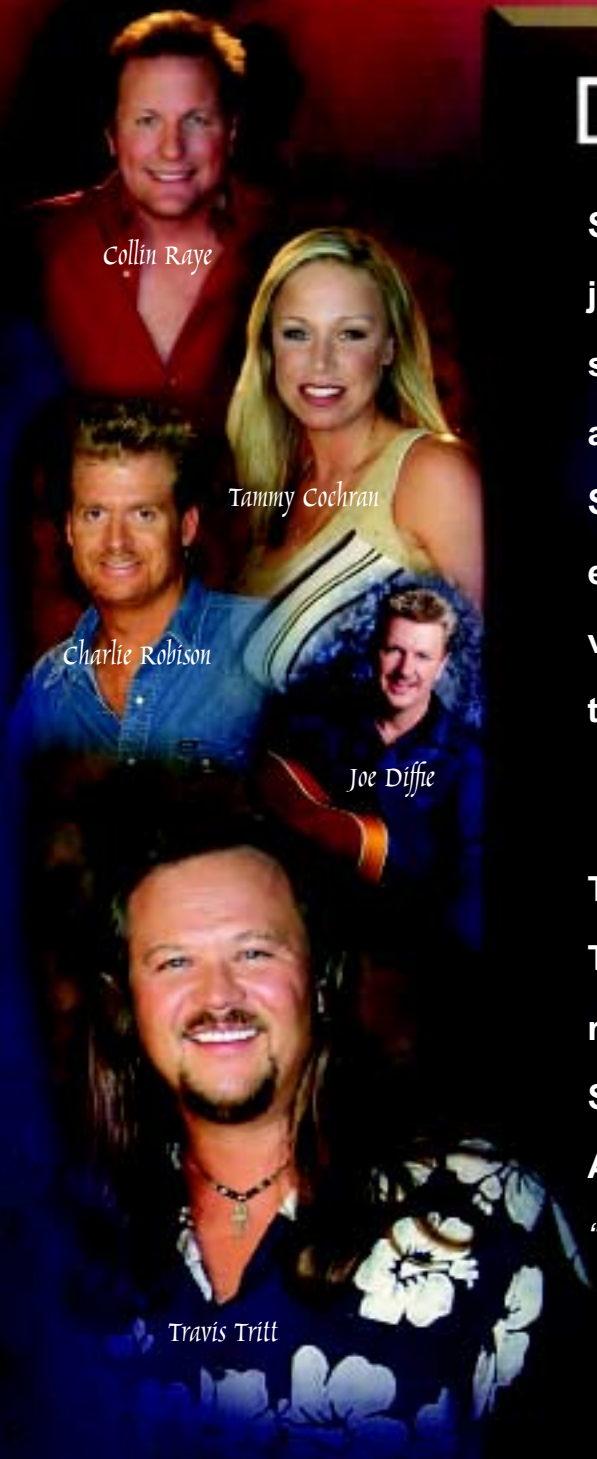
■ Following extensive maintenance, the aircraft was undergoing maintenance ground run. During shutdown, an unusually loud noise was heard, accompanied by loss of all engineering instrumentation indications. It was determined that slip ring bearings in an engineering instrumentation package in the rotor head had failed. That failure caused the instrumentation housing to break free of its mounting on the aircraft deck. Damage occurred to decking.

UH-60

Class C
K model

■ During a rolling take-off, aircraft experienced a significant rotor droop during climb-out near the departure end of the airfield. Crew initiated emergency procedures and placed both engine power control levers to lockout, effectively recovering the rotor RPM. The crew landed the aircraft without further incident. There was damage to the engine due to overtorque, but there were no crew injuries.

COMING soon to a theater near you!



DRIVE TO ARRIVE

Several talented country music artists have joined up in the Army's campaign to prevent soldier deaths in POV accidents. In movie theaters across the Army and Air Force Exchange Systems (AAFES) worldwide, military moviegoers will soon be treated to short public service video clips while waiting for the main feature to begin.

Country artists Joe Diffie, Collin Raye, Tammy Cochran, Charlie Robison and Travis Tritt are featured in the *"Drive to Arrive"* **high resolution videos, produced by the U.S. Army Safety Center. Watch for them at your local AAFES theater next time you take in a flick, and** *"Drive to Arrive."*