Flightfax

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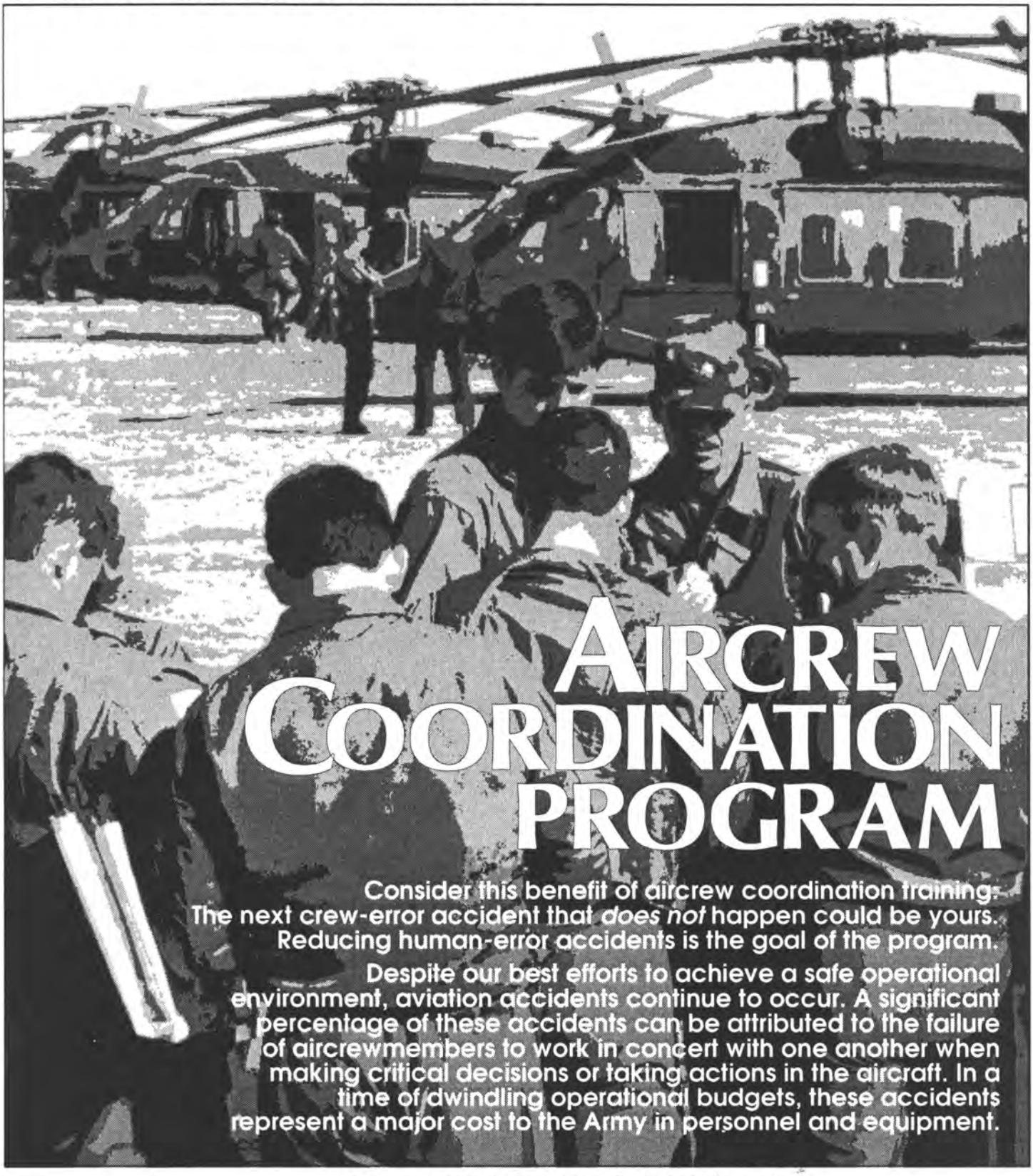
REPORT OF ARMY AIRCRAFT ACCIDENTS



AIRCREW COORDINATION PROGRAM

Consider this benefit of aircrew coordination training: The next crew-error accident that *does not* happen could be yours. Reducing human-error accidents is the goal of the program.

Despite our best efforts to achieve a safe operational environment, aviation accidents continue to occur. A significant percentage of these accidents can be attributed to the failure of aircrewmembers to work in concert with one another when making critical decisions or taking actions in the aircraft. In a time of dwindling operational budgets, these accidents represent a major cost to the Army in personnel and equipment.

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Fort Rucker, AL 36362-5163

Accident analysis

A study of accident records for the period FY 84 through FY 89 shows that crew coordination failures directly contributed to 147 aviation fatalities and a cost of over $292 million. Analysis of these accidents reveals that 41 percent of the crew coordination errors identified in this study related to a breakdown of communications between crewmembers. Thirty-five percent of the errors dealt with workload management or task prioritization during critical portions of flight operations.

As a result of these analyses, the U.S. Army Aviation Center (USAAVNC) was directed in 1990 to reevaluate its training and evaluation procedures. The Center was to continue training individual aviator skills *and* to begin emphasizing crew-level performance as well.

TC 1-210: Aircrew Training Program, Commander's Guide was rewritten to define crew coordination and stress its training at the unit level. This action was closely followed by changing the format of each aircraft's ATM. The new format identified and defined several crucial crew coordination elements. It also established crew coordination as a standard for each individual task. This was the first time that crew coordination had been identified and defined and an attempt made to standardize the concept in Army aircraft.

Even with these tools in place, the Army still suffered from crew-error accidents. Interestingly, the bulk of these accidents involved experienced operational aircrews; average age was 31 with 1,495 flight hours. It was apparent that a program was necessary to assist aviation units in training their existing crewmembers to the established standards.

Exportable training package development

In 1992 at the request of USAAVNC, the U.S. Army Research Institute (USARI) began work on an exportable training package (ETP) for aviation crew coordination. The researchers at USARI were aware that several commercial programs such as CAE-Link and HEART already existed and that some aviation units were currently using these programs to train their aviators. As good as they were, these commercial programs did not meet the prerequisites placed upon USARI. Some aviation units used one format, while others either chose a different training course or remained untrained altogether. This presented a major flaw as far as a standardized approach to crew coordination was concerned.

The procedural content of the courses available did not adequately address the uniqueness and the intensity of the tactical flight environment. The courses available did not identify existing critical error patterns that were correctable through training, nor were there any provisions for assessing crew/individual performance levels.

USARI with the assistance of Dynamics Research Corporation (DRC) succeeded in fulfilling all its requirements with the development of an ETP. The training could be implemented by aviation unit instructor pilots (IPs) and unit trainers and included flight-simulator-based evaluation procedures to assess progress and performance. Addressed in the program were the crucial coordination elements listed in each ATM. Additionally, several new aspects were introduced—

- Development of flight-team relationships
- Mission planning and critical segment rehearsal
- Workload management and prioritization
- Information exchange
- Cross-monitoring of all crew positions.

Having identified these aspects, USARI and DRC then defined each one, using a set of 13 observable/trainable qualities based on behavioral-rated performance. Descriptions were provided to aid the unit instructors in evaluating a crew's performance as superior, acceptable, or unsatisfactory. This approach allows the unit IPs to tailor training to specific crew dysfunctions or to enhance total crew performance.

Use of flight simulators

The ETP provides for cost effectiveness by taking maximum advantage of the Army's existing visual flight training simulators. The use of flight simulators allows commanders to have crew coordination training scenarios tailored to the unit's mission essential task list so that crew coordination becomes an integral part of the unit's operational mission capabilities.

Included in the training package is a provision for permanent modification of existing visual flight simulators with standard-format VHS recording equipment. This equipment is trainer operated and provides instructors and crewmembers with immediate performance data and feedback. Training debriefs are conducted using the taped sessions, significantly improving

the effectiveness of the debriefing process and resulting in substantial performance improvement.

Validation of ETP

Validation testing of the ETP was conducted in late 1992. The test involved an active Army aviation unit of the 101st Aviation Brigade at Fort Campbell. Pre-training performance data was collected from 16 UH-60 crews and compared to posttraining data at the end of crew coordination training. The training resulted in better overall mission planning while using less planning and rehearsal time. Cockpit communications patterns improved, and all crews exhibited more efficient management of critical tasks and unexpected events. Posttraining data also demonstrated dramatic improvements in reducing in-flight crew-error patterns most frequently associated with aviation accidents.

ETP approval and fielding

The training package contents and the validation test results were briefed to the Army Chief of Staff during a visit to the USAAVNC in early 1993. The DA-level endorsement initiated the program as a qualification course with completion-statement entries made in an aircrewmember's individual aircrew training folder on their DA Form 759: Individual Flight Record and Flight Certificate—Army.

The USAAVNC was directed to begin Armywide fielding by installing this training system at each of the Army's consolidated flight simulation training facilities worldwide. The National Guard and Army Reserve will also be included with the installation of training at the Eastern and Western Army National Guard Aviation Training Sites. At the same time, the concepts and principles developed are being integrated into the initial entry rotary wing training conducted at Fort Rucker.

"Train the trainers" begins

In September 1993, a "train-the-trainers" team of instructors from the USAAVNC conducted the first qualification training at Fort Campbell. The team taught two 10-day qualification courses to unit instructors in observation, attack, utility, and cargo mission profiles. Each course consisted of 38 hours of academic instruction and 13 hours of scenario development and evaluation. The latter portion included three training flights and an evaluation in the flight simulators (observation scenarios were conducted in the aircraft).

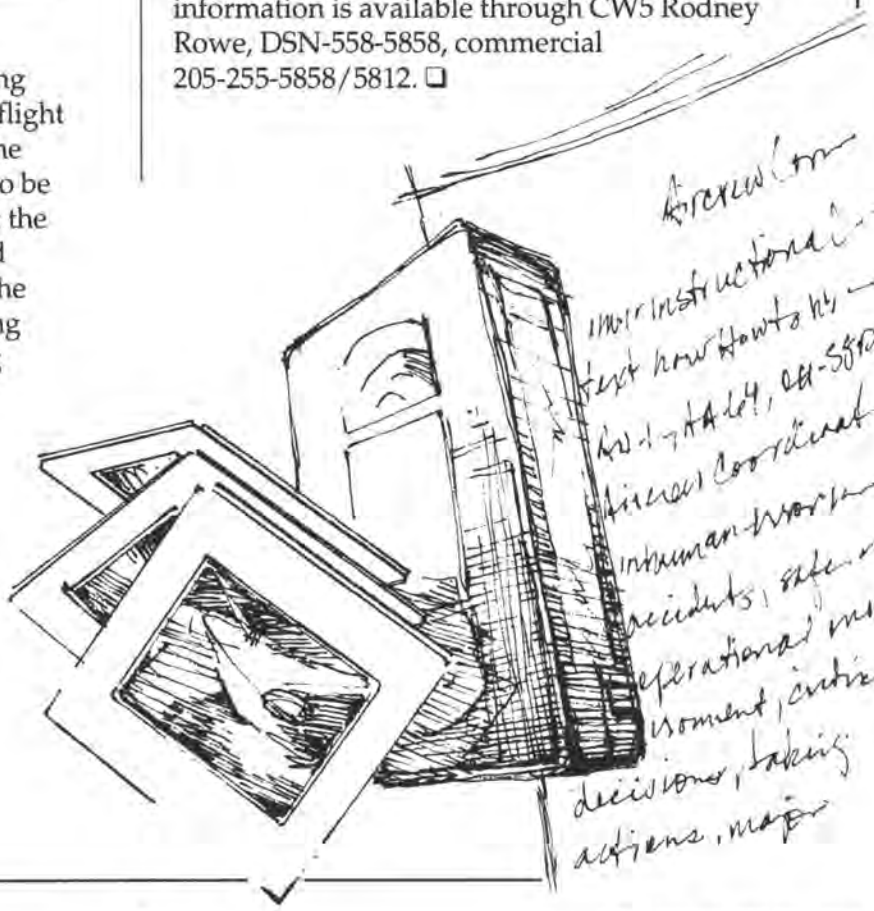
Exit comments and opinions of the course attendees were overwhelmingly favorable. In addition to the training they had received, the unit instructors were now armed with training videos, slides, and instructional text provided by the training team to facilitate training of the remaining unit aircrewmembers.

The aircrew coordination training team members will install the entire training package at the Eastern Area Aviation Training Site in December 1993. Tentative plans for 1994 include training at Fort Hood near the end of February and Fort Bragg in June-July.

Eventually, all installations with consolidated flight training simulator systems, including facilities in Germany, will receive this "train-the-trainer" instruction. Installation standardization offices of units not already on the training team's schedule should anticipate this in the future.

Points of contact

Information about the crew coordination training package is available through CW4 Jim Winston or CW4 Richard Boylston, DSN-558-2238/5858, commercial 205-255-2238/5858. Scheduling information is available through CW5 Rodney Rowe, DSN-558-5858, commercial 205-255-5858/5812. ❑



Hazard alert: pen-like and other laser pointers

Pen-like and other laser pointers produce a very narrow, bright red beam that can be used in presentations or for aiming firearms. These laser pointers are commonly found in novelty mail-order magazines, at electro-optics trade shows, and at various electronics stores. Because they are relatively inexpensive, readily available, and powered by common batteries, use of these visible laser diodes is quickly becoming widespread. However, at least one accident has already occurred when an individual stared into a laser, which was mounted incorrectly on a pistol.

To prevent further accidents and injuries, users should be aware of a potential hazard identified by the laser-safety community.

The hazard

The potential hazard is limited to the unprotected eyes of the individual who looks at the laser from within the direct beam. No skin hazard exists.

Some of the laser pointer devices contain warning labels. The natural aversion response or blink reflex of the eye from the bright light would limit exposure to a safe level for devices with a "caution" label. Devices with a "danger" label, however, can exceed momentary viewing criteria, and an individual should never look at the laser from within the beam.

If you do purchase a laser pointer, select one that has a "caution" warning label and requires few safety controls rather than one with a "danger" label. And be wary of seller claims about safety. Many of these devices are erroneously advertised as "safe."

How to use the devices safely

Despite their size and the fact that most are powered by small, commonly available batteries, these pointing devices can and have caused eye damage as a consequence of improper operation. Users of the laser pointer must never aim the pointer into the audience. Users should also unscrew the case enough to disable the power source when storing it in their shirt pocket or briefcase. These devices are not toys and should never be used by children.

Points of contact

This hazard alert information was prepared by the DOD Laser System Safety Working Group. Further service information can be obtained from—

- U.S. Army Environmental Hygiene Agency, ATTN: HSHB-MR-LL, Aberdeen Proving Ground, MD 21010-5422, DSN 584-3932/2331, commercial 410-671-3932.
- Space and Naval Warfare Systems Command, Code OOF, 2451 Crystal Drive, Arlington, VA 22245-5200, DSN 332-7235/7273, commercial 703-602-7235/7273.
- Armstrong Laboratory, Optical Radiation Division, 8111 18th Street, Brooks AFB, TX 78235-5215, DSN 240-4784, commercial 210-536-3622/4784. ❑

Aviators needed

The U.S. Army Aeromedical Research Laboratory (USAARL) at Fort Rucker, AL, needs aviator volunteers to participate in several research studies.

Many of these studies will require a 2-week commitment. And participants will be able to acquire either simulator or aircraft time, depending on the study.

Temporary duty funds and travel funds will be provided by USAARL on a case-by-case basis. Anyone interested in participating in the research should contact Mr. Larry Woodrum, DSN 558-6834, commercial 205-255-6834. ❑

Probable safety-of-flight hazard: discolored plastic prescription sunglasses

The Triservice Aeromedical Research Panel (TARP) has recently received reports of pilots who have been unable to see the red warning lights in the cockpit while wearing *plastic* prescription sunglasses.

The standard amount of light transmission for sunglasses is 15 percent with some slight variation acceptable. However, research revealed a substantial variation of the light transmission in aviator plastic prescription sunglasses fabricated in military optometric laboratories. In fact, one pair of sunglasses tested had a light transmission of only 2 percent.

In addition to incorrect light transmission, the hazard can be further compounded by color-distortion problems. Color distortion may occur due to outdated or faulty dyes, as well as exposure to adverse environmental elements such as excessive heat or prolonged exposure to bright sunlight (ultraviolet radiation). The light-transmission and color-distortion problems can cause aircrews to misinterpret visual information in the cockpit, which could lead to an accident.

The TARP has tasked a working group to continue to research and establish corrective measures for the plastic prescription sunglasses. Their instructions will be disseminated as soon as they become available.

Recommendations

Crewmembers should be aware of the potential safety-of-flight hazard of plastic prescription sunglasses. Until a solution to this problem is found, the TARP recommends that the following steps be taken to ensure aircrew safety:

- Crewmembers requiring glasses should not wear *plastic* prescription sunglasses while flying. This includes both military and civilian sunglasses with plastic lenses. Standard-issue plano-glass sunglasses, NSN 8465-01-114-1488, or previously issued military aviation prescription sunglasses with *glass* lenses are safe for aviation use.
- Crewmembers should use clear glasses in combination with the tinted sun visor (N-15) if protection from sunlight is needed.
- Crewmembers with approval for contact lenses should wear them in conjunction with the tinted sun visor (N-15) for eye protection in bright sunlight. ❑

POC: COL John M. Blough, MC, Safety Center Flight Surgeon, DSN 558-2763, commercial 205-255-2763

New DA Pam 385-1 now available

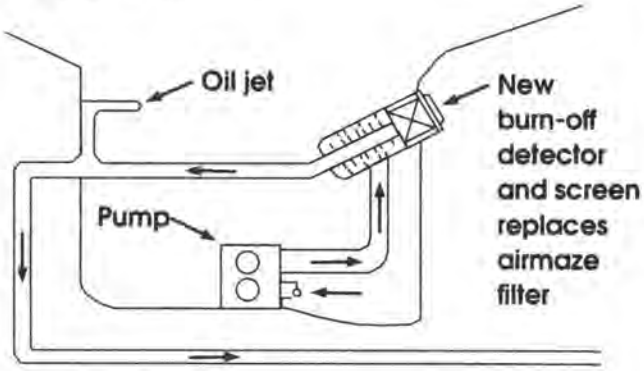
DA Pam 385-1: Small Unit Safety Officer/NCO Guide dated 22 September 1993 is now available and supersedes the old DA Pam 385-1 dated 15 March 1973. Initial Armywide pinpoint distribution of the new pamphlet began on 5 October 1993.

The new DA Pam 385-1 is smaller (5 by 8½ inches) than normal and nonstandard in appearance. The guide is designed to help unit safety officers and NCOs establish and manage a unit safety program. Because it is general in nature, information in the guide can be applied to all types of units—armor, supply, infantry, aviation, and so forth.

The new pamphlet is available through normal publications channels. See your publications officer/NCO and make sure adequate quantities are on request. ❑

Understanding the ODDS

Odds are you need to know more about the oil debris detection system (ODDS) to ensure your unit is getting the maximum benefit from this modification work order (MWO) kit that is currently being installed on UH-1s. The UH-1 ODDS design is similar to the ODDS on the AH-1. All of the operation information in this article applies to the AH-1 as well as to the UH-1.



In the early 1980s, fine filtration on lubrication systems and fuzz burnoff chip detectors were already being used by the Air Force. Because the UH-1 had a long history of nuisance chip lights, the Army selected it as the best aircraft to use for testing the ODDS—a system that combines the features of fine filtration on lubrication systems and burnoff chip detectors.

In 1982, the Aviation and Troop Command (ATCOM) OLR teams installed the ODDS on 38 UH-1s at the Army Aviation Center at Fort Rucker, AL. Following more than 80,000 hours of testing and an initial redesign of the engine capacitor, the ODDS worked flawlessly. UH-1 crews in the test aircraft encountered no nuisance chip lights.

Problems

Although the ODDS had been thoroughly tested and was working as designed, the system was fielded before some support functions were completely ready and training completed.

■ *Support.* The contractor provided all of the technical publications, but during the printing cycle, a portion of the ODDS data was left out. And, as with all new systems, ATCOM had established the piece-parts requirement for the support of ODDS. Procurement of these parts was delayed for several unforeseen reasons. This problem is being resolved, but it will take some time before it is completely fixed.

■ *Training.* The system was fielded before unit personnel fully understood the design of the system or how to operate and how to maintain it. People in the field were not educated about the ODDS before it was installed on their aircraft; therefore, a lot of misinformation about the system is currently circulating. The intent of this article is to explain how the system was designed, to provide some much-needed operation and maintenance guidance, and to reiterate that ODDS-equipped aircraft are exempt from the Army Oil Analysis Program (AOAP) requirements for the engine and transmission.

Design

The ODDS filter element is designed to remove minute separate particles down to 3-micron size. By bridging the gap with a charge of electricity, the chip detector is designed to discriminate between fuzz and a chip. And the current transmission filter has been replaced by a 3-micron filter element and housing. This housing, along with the engine filter housing, has a pressure bypass button that alerts maintenance of a clogged filter element.

Installation of the ODDS MWO kit supplements the original T53 engine filter with the addition of a 3-micron filter element and housing bracket attached to the firewall on the copilot's side of the aircraft. This assembly has a cyclonic separator, which is where the engine chip detector is located forward of the filter assembly. The ODDS MWO kit replaces the transmission wafer filter with a full-flow debris monitor incorporating a new chip detector. And both the 42- and 90-degree gearbox chip detectors have been replaced by new chip detectors. The gearboxes remain on the AOAP because lubrication fine filtration is not incorporated.

The chip detectors in the engine, transmission, and 42- and 90-degree gearboxes are powered by a 28-volt DC power module that is mounted in the overhead center console on the pilot's side of the aircraft. There are three capacitor systems inside the module: one capacitor operates the engine chip detector, the second capacitor operates the transmission chip detector, and the third capacitor operates the 42- and 90-degree gearbox chip detectors. The 42- and 90-degree capacitor fires across both chip detectors simultaneously.

Operation and maintenance

When the ODDS is installed, a writeup is entered in

the aircraft records requiring replacement of the filter elements after 300 hours of operation. This replacement is to clean the aircraft oil system. After the 300-hour filter element replacement, all other replacements are on condition.

Units must understand how the chip detector operates. As a chip bridges the gap, the capacitor discharges (zaps) through the chip and tries to sever it. The chip light does not illuminate unless the zap fails to sever the chip. If the chip is severed, the capacitor will recharge. If the chip cannot be severed because of its size, the chip light will illuminate and the capacitor will not recharge. The system was designed this way so that the crew would not be distracted by the chip light flash while it is burning fuzz.

Because the ODDS has separate circuits for the chip light and fuzz burnoff, the chip light will operate even if the power module (fuzz burnoff function) fails.

In a recent incident at Fort Hood, a UH-1 had a chip light with fuzz on the chip detector. Because of the findings, the unit thought the ODDS wasn't operating properly. Even though the zapper function provided by the power module failed, the system showed a chip light. Realizing there was a problem, maintenance personnel switched power modules from other aircraft. Each time they did this and unknown to them, the power modules burned out. After the unit replaced the power modules on the original aircraft, they thought none of the aircraft in the unit were operating properly. However, it was later found that the power module capacitor failed because the power module ground wire was installed on a power pin.

The unit was using .001, .002, and .003 wire to test the fuzz burnoff capability. Field maintenance personnel are not authorized to use this procedure. Although this procedure was used by OLR teams when they installed the ODDS MWO kits, it is being removed from the MWO and replaced by a voltage test. Currently, the only approved field procedure to test the fuzz burnoff capability is to use a screwdriver or paper clip to produce a spark across the contact points on the chip detector. In the future, this procedure will also be replaced by a voltage test.

Army oil analysis program

The AOAP uses spectrum analysis to look at parts per million (PPM). All T53 series engines use a PPM level as removal criteria. The 3-micron filtration of ODDS filters effectively removes particles to make spectrum analysis ineffective. ODDS-equipped aircraft are exempt from AOAP requirements for the engine and transmission. However, some units are electing to remain on the AOAP. This local requirement is costing both time and money without providing any benefit. The chip detector and bypass button on the ODDS will catch any impending failure. Both the UH-1 testing and ODDS-fielded aircraft chip lights have proven the effectiveness of the system.

Although ODDS-equipped aircraft are exempt from AOAP requirements for the engine and transmission, pilots must look at the bypass buttons on the transmission and engine filter housings during their preflight walkaround. Checking the bypass buttons is critical since this, along with chip lights, replaces the AOAP process. ❑

POC: Mr. Charles Elkins, Aviation and Troop Command, DSN 693-2004, commercial 314-263-2004

Army Aircraft Safety Performance Review

The *Army Aircraft Safety Performance Review* was prepared to provide aviation commanders, safety officers, aircrews, and maintenance personnel an overview of utility, attack, cargo, observation, and fixed wing aircraft safety performance for FY 89 through FY 93. With the help of the Army Aviation Center Directorate of Evaluation and Standardization and the Aviation Training Brigade at Fort Rucker, AL, we have provided some techniques and procedures and control measures that may help enhance realistic training while reducing human error, thus increasing force protection.

This report is in nine sections. Section I describes overall Army aviation experience. Sections II through IX provide overviews of the accident experience of each aircraft system, along with synopses of selected accidents and accident-prevention measures. Note that these synopses do not necessarily reflect all factors contributing to the accident; they concentrate on the primary cause or risk-management failure.

The review is now available and will be distributed to aviation units. If you do not receive a copy, you can obtain one by writing to Commander, U.S. Army Safety Center, ATTN: CSSC-IM, Fort Rucker, AL 36362 or by calling Ms. Sharrel Forehand, DSN 558-2062/3557, commercial 205-255-2062/3557. ❑

Incorrect installation of Hellfire missile rack leads to accident

In a recent accident, the AH-64 was in cruise flight when the left inboard Hellfire missile rack departed the aircraft because it had been installed incorrectly. Specifically, the maintenance crew failed to adjust the ejector foot to the full upward position, which prevented maximum clearance while installing the missile launcher. This, in turn, prevented the suspension hooks from engaging into the fully locked position. The maintenance crew also failed to install the ground safety pin, which cannot be installed unless the suspension hooks are in the locked position. As a result of the maintenance crew's failure to follow written procedures as prescribed in TM 9-1427-475-20, the missile launcher was not fully secured to the pylon rack assembly.

The crew did observe the hook locked/unlocked indicator and thought it was in the hook-locked position. However, the indicator can indicate a locked condition with the lock not fully engaged. This caused the maintenance personnel to believe the missile launcher was fully locked into position when, in fact, it was not.

The maintenance crew were not the only ones who failed to follow procedures. During and upon completion of the Hellfire missile launcher installation, quality control personnel did not ensure proper documentation and endorsements were completed. As a result, the technical inspector could not determine if the missile launcher was installed in accordance with the maintenance manual. During preflight, the flight crew also failed to notice that the external stores were not safetied with the wing-store jettison pins.

It could have been prevented

If the maintenance crew had installed the Hellfire missile rack using by-the-book maintenance procedures outlined in the TM, if the quality control personnel and technical inspector had ensured the maintenance work had been performed by the book, and if the flight crew had followed the checklist to ensure the external stores were safetied, this accident that cost about $28,000 could have been avoided.

To prevent this type of accident, units should follow established maintenance practices and ensure everyone does all maintenance work by the book. This is the only way to avoid unnecessary risks. Being more careful in the way we perform maintenance will save lives, money, and equipment. ❑

—SFC(P) Alcides Santana-Cruz, Aviation Branch, DSN 558-3262, commercial 205-255-3262

Class A Accidents through November

	Month	Class A Flight Accidents		Army Military Fatalities	
		FY93	FY94	FY93	FY94
1st Qtr	October	6	2	2	0
	November	2	3	6	0
	December	1		0	
2d Qtr	January	1		0	
	February	5		8	
	March	1		5	
3d Qtr	April	4		0	
	May	1		1	
	June	0		0	
4th Qtr	July	0		0	
	August	1		0	
	September	2		0	
	Total	**24**	**5**	**22**	**0**

"Wings of Freedom"— 23 years of accident-free flying

(Editor's Note: The following article was written by CW3 Frank Cisneros, Aviation Safety Officer for the Berlin Aviation Detachment from June 1990 to June 1993. It addresses the detachment's 23 years of accident-free flying, along with a synopsis of why the safety program is so successful.)

On 29 September 1992, the Berlin (Freedom City) Aviation Detachment completed another year of accident-free aviation duties. With a total of six aircraft in the detachment's inventory, the unit logged over 1,240 hours during FY 92. This significant event culminated 23 years of safe flying within Berlin and the greater German airspace. Each of the unit's 23 military and 16 civilian members is justifiably proud of this safety record.

Over the 23 years, the aircraft inventory has consisted of eight different airframes. The unit's missions range from VIP transport to air assaults to static displays to formation flying.

Train safely

Safety is a big part of our job and we know it. Safety starts when we wake up in the morning and continues throughout the entire day. If we don't do things right the first time, accidents can happen and people can get hurt. The combined effort of the detachment has paid off and safety is not taken for granted. The goal of every unit member has always been to *train safely*.

■ The Aviation Detachment commander clearly establishes the philosophy of systematic safety and ensures its principles are effectively employed throughout the organization. Safety is an attitude that must be as natural as breathing. In everything we do, safety is a consideration.

■ The Operations Section is responsible for planning, scheduling, and executing all missions in a timely manner. Two essential ingredients are assigning a good crew mix based on experience level and properly briefing crewmembers before every mission. Additionally, operations requires that each pilot-in-command (PC) brief back each mission before the flight to ensure the mission is fully understood. After each flight, the PC is responsible for giving a postmission debrief.

■ The Standardization Section ensures all crewmembers are current and qualified in their aircraft. They use a rigorous and effective standardization program consisting of no-notice checkrides, annual flight evaluations, and written examinations.

■ The Maintenance Section is the backbone of the preventive safety program. This section ensures that sound maintenance practices and procedures are applied before each flight; this helps prevent preflight, in-flight, and postflight maintenance-related mishaps. What makes this happen is a systematic application of safety management principles, including daily inspections of each aircraft before and after every flight and regular 25-, 50-, and 150-hour interval inspections.

■ Technical inspectors (TIs) are responsible for inspecting all "safety of flight" work performed on the aircraft by the crew chiefs and mechanics. The detachment has two maintenance test pilots to test the aircraft to ensure flight readiness.

■ The unit's Quality Control Section works closely with each mechanic to ensure by-the-book procedures are followed during every maintenance procedure. The maintenance team has responsibility for all shops—tool room, battery, calibration, aviation life support, avionics, and prop and rotor.

■ The aviation safety officer is the eyes and ears of the commander. The safety officer's duties include—

- Making on-the-spot safety corrections and providing advice and recommendations to the commander and other unit members on safety issues.
- Ensuring all assigned personnel are given proper safety information that equally emphasizes on- and off-duty areas.
- Implementing an effective program to reduce accidental losses of material and injury to soldiers.
- Being a fully operational pilot whose focus is on safety.
- Planning and conducting monthly safety meetings and inspections.
- Ensuring that aviation operational procedures are developed that maximize both safety and mission accomplishment.

As proven by their record, the Berlin Aviation Detachment works hard, and in all things, they *train safely*. ❑

Accident briefs

Information based on preliminary reports of aircraft accidents

Utility

UH-1 Class C

H series - During day VFR cruise flight, aircraft yawed violently left, low engine RPM audio activated, and PC entered autorotation. As engine RPM was decreasing and rotor RPM was still in the green, PC placed governor in emergency position, reduced throttle, and completed landing without further incident. Inspection revealed that rotor overspeed occurred when PC switched governor to emergency position.

H series - While conducting power check at 5-foot hover, PC heard rumbling noise. Aircraft experienced tail rotor failure during landing attempt, rotated 30 degrees, and impacted ground, damaging skid and tail rotor.

UH-60 Class A

L series - Chalk 4 in formation flight of 5 was on short final for landing to dirt strip when it encountered brownout conditions. Aircraft drifted right, and main rotor blades struck trees. Aircraft rolled left and came to rest on left side. No fatalities. 9401

Attack

AH-1 Class B

S series - While raising aircraft to hover, AH-1 crew lost visual reference with OH-58 to their front due to blowing dust. AH-1 drifted forward, and its telescopic sight unit was struck by OH-58 main rotor blades. AH-1 crew lost visual contact with ground during rearward hover, and aircraft landed hard. 9402

AH-1 Class C

F series - During MOC of 42- and 90-degree gearboxes, pilot turned ignition key off when TGT reached 750°C. TGT continued to increase, and at about 880°C, pilot began emergency procedure for fire-engine start. Engine shutdown was completed before TGT exceeded maximum limit of 950°C. Crew determined to attempt a second start. After waiting 1-minute cool-down time, pilot reconfirmed switch positions and again attempted start. During second start attempt, TGT increased rapidly. Pilot turned aircraft ignition key off when TGT reached 750°C and began emergency procedure for fire-engine-start as TGT reached 880°C. While performing emergency procedures, TGT reached 1,000°C for about 5 seconds.

AH-1 Class E

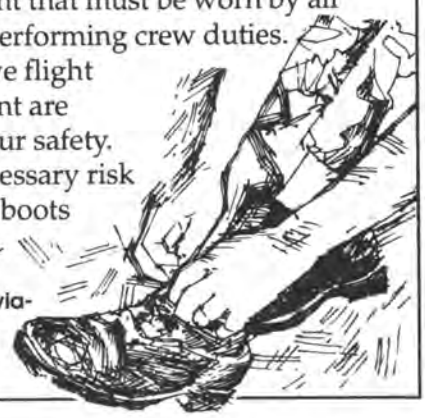
F series - While performing maintenance test flight at 11,000 feet MSL, pilot reduced collective and aircraft experienced compressor

Jungle boots unauthorized for flight

The Army Safety Center has received numerous calls from Aviation Branch soldiers regarding the wear of the black jungle boot, which is the authorized replacement for the old green ones. The jungle boots are *not* approved for wear by Army flight crewmembers when performing crew duties.

Because the black jungle boots, like the green ones, are partially constructed of nylon material, they would not provide the protection needed should a flash fire or postcrash fire occur. According to AR 95-1: Flight Regulations, para 3-11, leather boots are part of the required and approved protective clothing and equipment that must be worn by all crewmembers when performing crew duties.

Approved protective flight clothing and equipment are provided to ensure your safety. Don't accept an unnecessary risk by wearing the jungle boots during flight. ❑



POC: SFC John Morthole, Aviation Branch, DSN 558-3262, commercial 205-255-3262

Caution: *brownout incidents on the rise*

As the December issue of *Flightfax* was being finalized, two accidents involving brownout situations occurred. We're raising the caution flag: use extra care when operating in areas where brownout or whiteout conditions are likely to be encountered.

Review the flying techniques outlined in FM 1-202: Environmental Flight so that you'll be prepared to safely operate in sandy, dusty, or loose-snow areas. The January issue of *Flightfax* will contain a review of specific techniques and procedures to use for blowing-snow approaches and to avoid brownout situations and appropriate actions to take when brownout or whiteout situations are encountered. ❑

stall. Crew heard several loud reports, aircraft yawed left, and engine chip detector light came on. Crew immediately returned to airfield and completed landing without further incident. Inspection revealed variable inlet guide vane actuator was out of adjustment.

AH-64 Class A

A series - During takeoff after refueling, aircraft crashed in field off end of runway. Aircraft tail boom was dislocated, structure of aircraft was compressed, and main rotor blades were damaged. No fatalities. 9403

AH-64 Class B

A series - Main rotor blades dipped and struck PNVS during pre-operational check for night mission. 9404

Cargo

CH-47 Class C

D series - During taxi runup, main rotor blades contacted ½-inch support cable on nose-dock type hangar.

CH-47 Class D

D series - Crew was conducting training on use and operation of cargo/rescue winch. Winch was being used to pull engine stand onto aircraft and was being controlled by pilot's overhead control panel. When crew placed switch in remote, plug blew off winch control solenoid valve and penetrated heater exhaust pipe insulation. Hydraulic fluid came out of valve and permeated pipe insulation.

Observation

OH-6 Class C

A series - During engine runup, PC observed RPM indicator go into green and confirmed that throttle was full open. Crew noted engine overspeed condition as it reached 106 to 107 percent about 15 to 20 seconds following confirmation. Overspeed condition requires that engine be replaced.

OH-58 Class A

C series - While attempting to land to field location with 3- to 5-degree cross upslope to the right, PC failed to observe aircraft's rate of closure and longitudinal alignment. As aircraft drifted laterally right, right skid contacted ground, and dynamic rollover condition was encountered. No fatalities. 9405

C series - Aircraft departed stagefield and was proceeding south during NOE flight when engine quit. IP took controls from student pilot, and aircraft descended into trees. No fatalities. 9406

OH-58 Class C

A series - Crew chief walked into tail rotor while engines were operating and sustained cut into left upper arm.

OH-58 Class E

C series - While in traffic pattern, crew felt binding in collective as it was moved from full-down position to cruise torque setting. Crew made precautionary landing to airfield and shut down aircraft. Maintenance personnel found armor side panel was rubbing against collective.

Fixed wing

C-12 Class D

D series - While taxiing aircraft from one taxiway to another, pilot applied right brake to help turn and brake pedal went to floor. Copilot applied brake and his also failed. Left prop hit taxiway light. Crew taxied aircraft to hangar and shut it down without further incident. Inspection revealed pilot's right brake master cylinder had failed.

OV-1 Class E

D series - Pilot placed landing gear handle in up position and observed that right landing gear indicator failed to indicate up. Right landing gear was observed to be partially extended. Crew reduced airspeed and unsuccessfully attempted to recycle gear. Crew extended landing gear, declared an emergency, and completed normal landing without further incident. Inspection revealed that right main landing gear had been improperly serviced.

Messages

■ Aviation safety action maintenance mandatory message for all UH-1, AH-1, and OV-1 series aircraft concerning revision to special oil sampling and repair of T53 engines with abnormal iron content (UH-1-94-ASAM-01, AH-1-94-ASAM-01, OV-1-94-ASAM-01, 122100Z Oct 93).

■ Aviation safety action maintenance mandatory message concerning one-time inspection of transmission oil cooler lines for proper routing following improved particle separator installation (AH-1-94-ASAM-02, 021353Z Nov 93).

■ Aviation safety action maintenance mandatory message concerning procedure to inspect the auxiliary power unit (APU) fuel solenoid valve (AH-64-94-ASAM-01, 031229Z Nov 93).

■ Aviation safety action maintenance mandatory message concerning one-time and recurring inspections of rotary wing head bushings on CH-47D, MH-47D, and MH-47E aircraft (CH-47-94-ASAM-01, 191815Z Oct 93).

■ Aviation safety action message amendment to one-time and recurring inspections (ATCOM message dated 191815Z Oct 93) of rotary wing head bushings on CH-47D, MH-47D, and MH-47E aircraft (CH-47-94-ASAM-02, 291756Z Oct 93).

■ Aviation safety action information message concerning excessive restriction of engine intake air due to the engine inlet barrier filter and compensating provisions for all OH-6A series I and II aircraft (OH-6-94-ASAM-01, 021317Z Nov 93).

■ Aviation safety action maintenance mandatory message concerning additions and changes to the retirement schedule for the OH-58D and improved OH-58D (OH-58-94-ASAM-01, 191500Z Oct 93).

U.S. ARMY SAFETY CENTER

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ATTENTION:

new FAX number for submitting PRAMs

Due to the recent replacement of the telephone system at Fort Rucker, AL, the FAX number for submitting preliminary reports of Army mishaps (PRAMs) to the Safety Center has changed. The new FAX number is DSN 558-9136, commercial 205-255-9136.

New telephone number for ASMIS modem

We have replaced our telephone system and are looking forward to providing improved service for computer/modem dial-in users of the Army Safety Management Information System (ASMIS). However, changing over to the new system required assignment of a new ASMIS telephone number.

On 18 November 1993, the telephone number for the ASMIS changed to DSN 558-9001, commercial 205-255-9001. Remember that modems must be reprogrammed with this new number to access ASMIS.

Users who reach ASMIS via DDN/TAC dial in, DDN telnet, or the DSS link are not affected by this change. ❑

POC: Mr. Taylor Steele or Ms. Sylvia Edgar, DSN 558-2974, commercial 205-255-2974

New addresses and telephone numbers

To acquire night vision goggle (NVG) message diskettes and exportable training packages, aircrew coordination information, or aircrew training manual information, contact the following:

Night vision goggle

■ **Message diskettes**

• *Address*: Commander, Aviation Training Brigade, ATTN: ATZQ-ATB-NS, Fort Rucker, AL 36362-5218.

• *Telephone numbers*: DSN 558-9545/9515, commercial 205-255-9545/9515, FAX DSN 558-2463, commercial 205-255-2463.

■ **Exportable training packages**

• *Address*: Commander, U.S. Army Aviation Center, ATTN: ATZQ-TDN-D (Mr. Pierre Dyck), Fort Rucker, AL 36362-5035.

• *Telephone numbers*: DSN 558-9715, commercial 205-255-9715.

Aircrew coordination

• *Address*: Commander, Aviation Training Brigade, ATTN: ATZQ-ATB-ACC, Fort Rucker, AL 36362-5218.

• *Telephone numbers*: DSN 558-2238/9375, commercial 205-255-2238/9375, FAX DSN 558-2463, commercial 205-255-2463.

Aircrew training manuals

• *Address*: Commander, Aviation Training Brigade, ATTN: ATZQ-ATB-ATM, Fort Rucker, AL 36362-5218.

• *Telephone numbers*: DSN 558-3801/2635, commercial 205-255-3801/2635, FAX DSN 558-2463, commercial 205-255-2463.