FlightFax

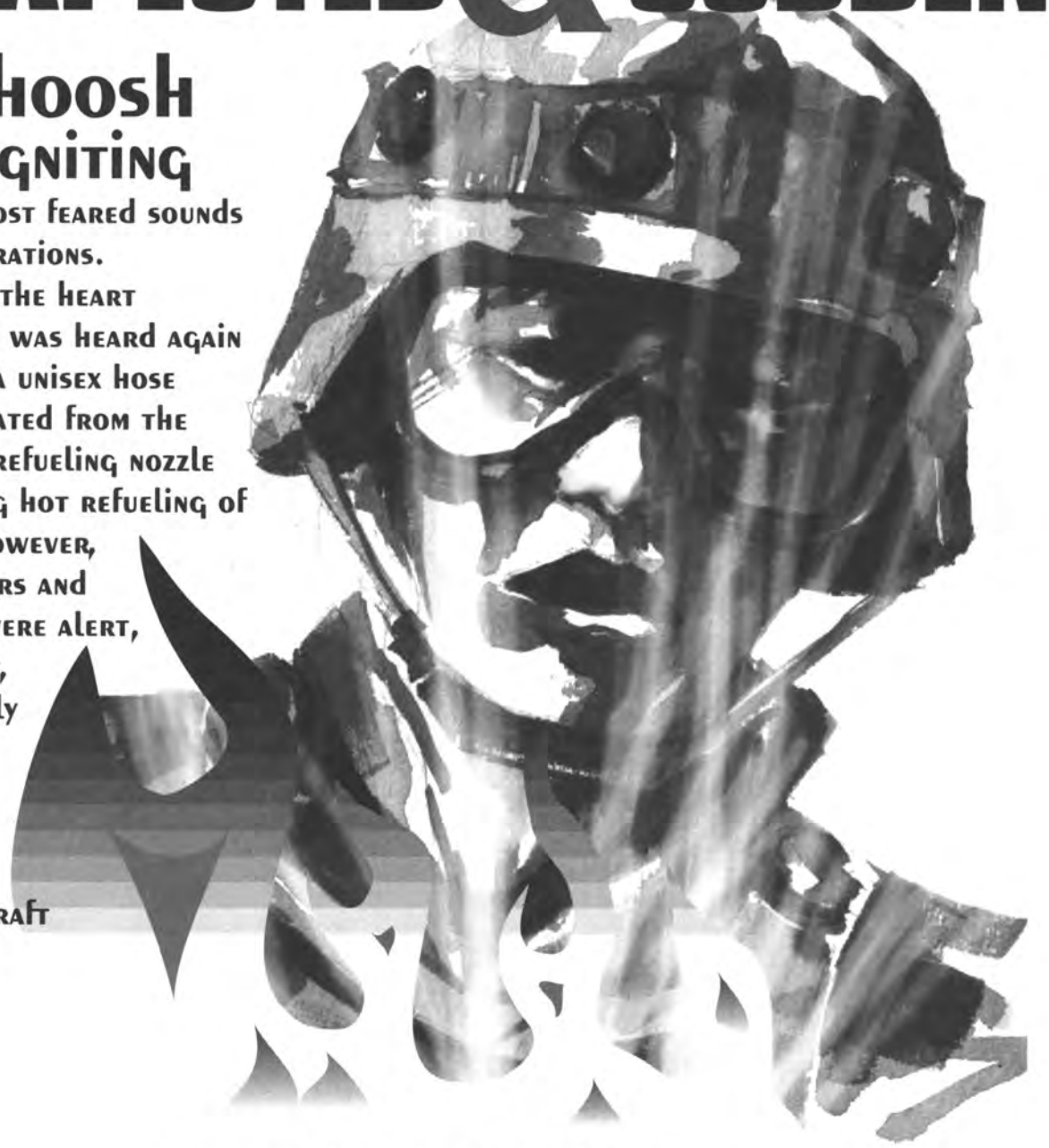
REPORT of ARMY AIRCRAFT ACCIDENTS

July 1995 ◆ Vol 23 ◆ No 10

UNEXPECTED & SUDDEN

THE WHOOSH of FUEL IGNITING

IS ONE OF THE MOST FEARED SOUNDS IN AVIATION OPERATIONS. UNFORTUNATELY, THE HEART STOPPING SOUND WAS HEARD AGAIN RECENTLY WHEN A UNISEX HOSE COUPLING SEPARATED FROM THE CLOSED-CIRCUIT REFUELING NOZZLE COUPLING DURING HOT REFUELING OF AN OH58D. HOWEVER, THE CREWMEMBERS AND FUEL HANDLERS WERE ALERT, REACTED QUICKLY, AND MIRACULOUSLY ESCAPED WITH ONLY MINOR INJURIES. THE MORE THAN $6 MILLION AIRCRAFT WAS DESTROYED BY THE FIRE.



Property of U.S. Army Aviation Technical Library
Fort Rucker, AL 36362-5163

A UH-60, which was sitting where the vehicle in the photo is located, was refueling two OH-58D aircraft. At refuel point 1, the fuel nozzle separated from the hose coupling. Pressurized fuel sprayed over the refueler and the aircraft and ignited.

Another refueling fire

Spraying fuel, an operating aircraft give new meaning to the words "hot refueling."

The Army has dedicated a lot of effort and money to overcoming the hazards of postcrash fire or igniting fuel during refueling. Development of crashworthy fuel systems has greatly reduced the risk of fire in survivable crash impacts, and the use of closed-circuit refueling has greatly reduced the dangers of hot refueling. But the destructive and devastating results of fire remain an ever-present danger. We must never forget the inherent hazards of fuel handling and be prepared to react if the unexpected happens.

Various aircraft operators manuals list emergency procedures for dealing with fires on the ground and in the air. But manuals cannot provide for every eventuality. And sometimes no amount of procedures in a regulation can get you out of a bad situation. Some situations require quick use of common sense, recall of previous training, determination of the proper course of action, and a whole lot of luck.

The February issue of *FlightFax* highlighted an AH-64 pilot's very vivid account of the horrifying 18 seconds from the time he knew his aircraft was on fire until he bailed out and ran from the inferno that had ignited during refueling operations. Recently another fire occurred during hot refueling of an OH-58D Kiowa Warrior. Again, quick reaction and previous training saved the lives of the crews and refuelers.

"Fat Hawk" refueling accident

Six OH-58D Kiowa Warriors were to conduct a night mission during which refueling would be required. The aircraft would refuel at a FARP site that used UH-60 aircraft as the fuel source. This rapid refuel operation, commonly referred to as a "Fat Hawk," basically means defueling the UH-60 to refuel the OH-58Ds. The refuel system was made up of components from the heavy expanded mobility tactical truck (HEMTT) tanker aircraft refueling system (HTARS) and a Robertson Micro-Fare Pump Module, which was bought off-the-shelf.

At 2200, two UH-60L aircraft departed the intermediate support base to conduct the refuel mission. Thirty minutes later, they arrived at the refuel site, and the system was set up and operational in less than 4 minutes. Each UH-60 aircraft fed two refuel points.

Before beginning refuel operations, the NCO at each site checked the FARP layout IAW a FORSCOM checklist, followed by an inspection by an aviation safety officer. No deficiencies were noted. The refueler at each point also checked the equipment. As the refueler for refuel point No. 1 in the first FARP was checking her hose connections, the CCR (closed-circuit refueling) nozzle separated from the hose coupling. Unfamiliar with the type of coupling being used, the refueler called her NCOIC for assistance. He reconnected the hose and CCR nozzle and then turned the pump on, pressurizing the system.

At 2250, the first Kiowa Warrior arrived for fuel and landed at refuel point No. 2 of the first FARP. Because of problems with the refuel port on the aircraft, the crew shut down the aircraft for cold refueling. At 2303, the second Kiowa Warrior arrived and landed at refuel point No. 1. During refueling, the aircraft remained at full operating RPM with both pilots inside.

The refueler grounded the aircraft, bonded the nozzle to the aircraft, and inserted the CCR nozzle into the aircraft's fuel port. As she tugged on the nozzle to ensure it was properly seated, the nozzle separated from the hose coupling, and pressurized fuel sprayed upwards over the aircraft and the refueler. As the fuel ignited at the engine exhaust stack area, the refueler instinctively pulled the hose against her stomach in a futile attempt to staunch the fuel flow.

The fire quickly spread, engulfing the refueler and the aircraft in flames. Almost immediately, the NCOIC, who was standing nearby, pulled the refueler to the ground extinguishing the flames only to have his BDU shirt catch fire. Realizing he was on fire, he dropped and rolled to extinguish the flames on his uniform.

The crew shut down the aircraft and egressed

uninjured. The UH-60 crew disconnected all hoses and electrical connections and departed the area without incident. As they left, they activated the crash alarm system. The installation fire department responded and extinguished the aircraft fire. Except for the tail boom and tail rotor, the aircraft was destroyed. Miraculously, the two fuel handlers received only minor injuries.

What happened?

The original design of the unisex hose coupling (P/N AE88050R) allowed for adequate clearance of the grenade-style pull pin in the unisex nozzle coupling (NSN 4930-01-214-2909). But the design had been changed. The new design did not allow for adequate clearance of the pull pin, and the coupling separated from the nozzle.

The FARP NCOIC had failed to detect an inoperable interlock pin in the unisex hose coupling. The pin could not seat when the coupling was properly seated to the nozzle. He also failed to detect that the grenade pull pin in the unisex CCR nozzle did not seat when the coupling was properly connected to the nozzle. Even though the refueler had specifically informed the NCOIC of an uncommanded separation of the nozzle and hose coupling, he failed to detect these deficiencies.

Note: The Aviation and Troop Command has issued a safety-of-use message (SOUM-ATCOM-95-006, 091818Z Jun 95) concerning removal from service of Aeroquip Corporation aircraft CCR nozzle assemblies (NSN 4930-01-214-2909) and pressure fuel servicing nozzles (RDF nozzle) NSN 4930-01-214-0991 with non-valved unisex inlet couplings. (See sidebar for summary and purpose of the message.)

Be prepared for the unexpected

Fortunately, fire doesn't happen often in aviation operations. But when it does, it has the potential to be deadly—quickly. As we've seen in these recent refueling accidents, seconds can mean the difference between living and burning to death. In both of these recent accidents, the individuals involved were alert to potential hazards and reacted quickly and instinctively even in unusual circumstances.

Long after the specific details of these refueling accidents have faded from your memory, remember that even a familiar, stable situation can deteriorate into a life-threatening emergency in a surprisingly short length of time. A lack of situational awareness and attention by any one of the individuals involved in these accidents could have used up precious seconds that could not be spared. Anticipate contingencies by planning actions and priorities if your situation deteriorates while you're in hot refueling. Doing so can save you seconds and aid in your survival should an unexpected fire occur.

POC: CW4 Gary D. Braman, Investigations Division, DSN 558-9855, (334-255-9855)

Safety-of-use message

Recently, an OH-58D helicopter was consumed by fire during hot refueling operations using an Aeroquip Corporation CCR nozzle assembly, NSN 4930-01-214-2909. Preliminary examination of the refueling components indicates that incompatible unisex couplings may have caused the nozzle to separate from the hose at the unisex coupling.

To preclude recurrence of this incident, SOUM-ATCOM-95-006 requires removal of refueling nozzles and nozzle assemblies with potentially incompatible couplings from service. The potential incompatibility results from the location and angle of entry of the interlocking pin on the non-valved inlet coupling. In addition, a separate message will be issued to reiterate the importance of ensuring only properly functioning equipment is used for aircraft refueling.

The purpose of this SOUM is to require units to inspect CCR nozzle assemblies and RDF refueling nozzles for incompatible couplings and remove them from service in accordance with this message.

Points of contact

- Technical, Mr. Charles Bright, DSN 693-3888 (314-263-3888).
- Logistical, Mr. Jack Shortridge, DSN 693-2618 (314-263-2618).
- Safety, Mr. Brad Meyer, DSN 693-2258 (314-263-2258).
- Foreign military sales, CW5 Jay Nance or Mr. Ron Van Rees, DSN 693-3826/3659 (314-263-3826/3659).
- After hours, contact ATCOM command operations center, DSN 693-2066/2067 (314-263-2066/2067).

What would you do?

My duties as the Utility Aircraft Systems Manager at the U.S. Army Safety Center include reading the abbreviated aviation accident reports to identify potential trends. Recently, the Safety Center received two reports that I thought would be good topics for risk-management discussion around the flight planning table in operations. They could also serve as the basis for writing a "There I was" type of article, which we hope many of you will begin doing (see February 1995 issue of *FlightFax* for more information on our requests for "There I was" stories).

Although I have communicated with the organizations involved and given them an opportunity to review this article prior to publication to ensure that nothing was taken out of context, I do not know all of the circumstances involved in these two reports. I have used these two excellent examples simply to generate a discussion on risk-management procedures and the decision-making process. I do want to commend the aircrews for submitting the reports.

Apply the risk-management process and continue applying the principles until the mission is completed—including sharing of lessons learned.

The intent of this article is not to second-guess or judge the aircrews' actions but to generate discussion among aircrewmembers and to encourage each reader to do a self-evaluation by answering the question, "What would I have done in that situation?"

First scenario

A UH-1H aircraft departed under visual flight rules (VFR) for a planned day VFR service mission with en route weather forecasted to be 1500-foot ceilings and 2 miles' visibility. Destination weather was forecasted to be above VFR minimums at estimated time of arrival (ETA) through 1 hour after ETA. Ten miles out from departure, the aircrew encountered unforecast weather of ceilings less than 500 feet and visibility less than 1/2 mile. The crew aborted, returned to home station, and canceled the mission.

Second scenario

A UH-1H aircraft departed under instrument flight rules (IFR) with 100-foot ceilings and 1/16-mile visibility on a service mission with destination weather forecast for 600 foot scattered, 1,200 foot overcast, and visibility of 2 miles with fog. Upon contacting approach control on departure, the aircrew was informed that destination weather was zero-zero. Upon inquiry, approach control stated that the closest airport where they could expect to "break out" was 140 nautical miles west. The aircrew requested vectors for a precision approach radar (PAR) procedure to a nearby Air Force base. The PAR was successful, and the crew canceled the mission.

Analyzing the scenarios

With the stage set, let's look at the scenarios from both a regulatory and risk-management perspective.

■ *Applying regulatory requirements.* In the first scenario, the en route portion of the flight was going to be conducted in Class G, uncontrolled, airspace. In accordance with AR 95-1: Aviation Flight Regulations, paragraph 5-2.d.(4), for day flight, outside of controlled airspace, forecast en route weather must permit flight clear of clouds and 1/2-mile visibility. For this flight, the above minimums were easily met.

Based on the forecast, the crew should not have had any problems with maintaining these minimums. The aircraft was not IFR equipped. The local SOP requires that aircraft be equipped for instrument meteorological conditions (IMC) flight for VFR operations below a 1,000-foot ceiling and 3-miles' visibility. Upon identifying and assessing the hazard of less-than-forecasted ceilings and visibility, the aircrew elected to control the hazard by choosing a course of action that included aborting the mission and returning to home station.

Now, let's look at the second scenario. One of the crewmembers was an instrument examiner. The crew also met the criteria in AR 95-1, paragraph 5-4.a. requiring 50 hours of instrument flight time, which meant that they had no takeoff minimums. The departure airfield has a non-precision approach with weather minimums of 500-foot ceiling and 1-mile visibility. There were airfields in the local area with precision approach radar and weather minimums as low as 100-foot ceiling and 1/4-mile visibility. However, these fields were affected by the same local weather. The weather forecaster on duty had the least amount of experience at the facility and attributed the weather phenomenon (fog) to the close proximity of large bodies of water.

The service mission was a VIP pick-up and transport for linkup with a fixed wing aircraft. The pick-up point had been changed from the original heliport to an airfield because of approach planning criteria and the forecasted weather. Additionally, the aircraft was equipped with auxiliary fuel and had sufficient fuel on board to fly to the airfield 140 miles west to "break out" with a 1-hour reserve.

The purpose of AR 95-1 is to establish responsibilities, procedures, and rules for aircrew training, standardization, and the operation of Army aircraft. AR 385-95: Army Aviation Accident Prevention states that professionalism means complying with all of the set standards and that by-the-book, disciplined operations are mandatory. Does this mean that if we meet the criteria set forth in the regulation that we are obligated to launch even if we feel it exceeds our own capabilities or limitations?

■ *Applying risk management.* I feel confident that the crew flying the second scenario applied risk-management techniques to their mission, implemented controls, and made the risk decision at the appropriate level. For example, the original pick-up point was changed due to weather, plus they had auxiliary fuel capability on board which gave them sufficient fuel to fly to an alternate airfield. In this case, we had an experienced crew, the aircraft was mission capable, and they launched with a favorable destination weather forecast.

But what is a weather forecast? One of Webster's definitions of forecast is to predict weather conditions by analysis of meteorological data. Once we have the weather forecast, we can start our planning and risk management. But how many times has the weather forecast or prophecy been missed in your aviation career? I can count mine on one hand. For example, after being airborne for more than an hour and upon contacting approach control, the weather we received was the minimum for the planned instrument landing system (ILS) approach and now required an alternate. Needless to say, we did not have fuel for one, nor could we divert to another destination. The aircraft ahead of us reported breaking out at minimums, and fortunately, we did as well. But we had an alternate plan in the event we had to execute a missed approach. Since we were committed to our destination, we were going to request sequencing for additional ILS approaches in hopes the conditions would improve. When fuel became critical, our plan was to execute the approach at 60 knots and at a 300-foot-per-minute rate of descent to the ground. In essence, we were going to do a controlled crash. My other incidents were under VFR conditions and involved encountering special VFR. Airspeed and altitude were adjusted, and we were able to continue the mission. As I look back, I am not sure I would make the same decisions using the risk-management process we are taught to use today. But enough about my experiences—I'm sure you've had yours too.

Back to our two scenarios. The current regulations allow operations in VFR when IFR recovery is not possible, and one may also be able to depart IFR in zero-zero conditions. What would you do? Would you depart IFR from an airfield with less than approach minimums at the point of departure? What would your course of action be if a master caution light flickered during climbout?

Changing perceptions

Sometimes we perceive that mission accomplishment is paramount—no matter what the risk—and that mistakes or failures are not tolerated and will reflect adversely on evaluation reports. As we restructure the force, our "can do" attitude is becoming one of "can't fail." This could set the stage to reverse the downward trend in accidents that we have experienced over the past 4 years.

Risk management is the tool to change these perceptions. It is being taught in both officer and enlisted leadership development courses throughout the Army. Today, commanders and soldiers are gaining an understanding and appreciation of the risk-management process and know that if the risks outweigh the benefits, the mission should be a no-go.

Risk management truly is a force multiplier and plays a key role in force protection. Remember that once the mission is received, start applying the risk-management process and continue applying the principles until the mission is completed—including sharing of lessons learned.

—MAJ James F. Dunn, USASC Aviation Branch, DSN 558-3756 (334-255-3756)

Aviation units needed to support Ranger training at Camp Merrill

Like to spend some time in beautiful mountain scenery in the company of rugged outdoorsmen? No, this isn't an ad for a macho hunting weekend; but you can have this and more—an opportunity to fly day and night air assault missions—if your unit provides aviation support to the Army Ranger School.

Camp Frank D. Merrill is located in the North Georgia mountains and is the home of the 5th Ranger Training Battalion and the location of the mountain phase of the Army Ranger School. About 200 ranger students come to Camp Merrill each month. During the 10-day field exercise, students conduct numerous day and night air assault operations, aerial resupply missions, and cadre airborne operations.

Normally, the 5th Ranger Training Battalion receives its aviation support, which consists of two UH-60s, from Fort Benning's Directorate of Operations and Training (DOT). The support provided by DOT aviation has been outstanding; however, due to crew shortages and required crew-rest policies, they cannot support the night air assault operations that are being incorporated into the program of instruction.

For units interested in providing this support, the 5th Ranger Training Battalion will be able to provide a tactical scenario, missions, billets, mess, and most logistical needs. Due to mission requirements and fuel capacity at Camp Merrill, the ideal number of UH-60s to support a ranger class is four. Supporting the ranger school would provide aviation units an opportunity to conduct actual day and night air assault missions in mountainous terrain.

For further information, please call MAJ Richard Kemp, DSN 797-5770 (706-864-3327) ext. 184; CPT Dan Knight, ext. 122; or SFC Ramon Bual, ext. 199.

ASOL CORNER

Abbreviated aviation accident report

LESSONS LEARNED

I hope that most of you have already read the revised AR 385-40: Accident Reporting and Records and DA Pam 385-40: Army Accident Investigation and Reporting, which introduces and explains DA Form 2397-AB-R: Abbreviated Aviation Accident Report (AAAR).

Testing the AAAR form

In 1992, the U.S. Army Safety Center (USASC) selected Fort Hood to test the DA Form 2397-AB-R. In the past 2 years, we have used the form to document numerous Class C through Class E aviation incidents. With each use of the AAAR form in an investigation, we provided our comments and suggested improvements to Forces Command (FORSCOM) and the USASC. As FORSCOM and the USASC processed the AAAR, they too identified needed improvements. In all, we used four different versions of the AAAR form at Fort Hood. The AAAR form contained in the new DA Pam 385-40 is the result of considerable coordination between the USASC, FORSCOM, and Fort Hood.

Lessons learned

The USASC asked us to share our experiences and lessons learned using the AAAR form. Now that you have begun using the AAAR form in your units, you should not have a lot of the same problems that we experienced during the development of the form. However, we would like to offer the following suggestions that we believe you might find helpful.

■ **Document supporting information**. Commanders and personnel selected to investigate aviation incidents need to understand that the AAAR is designed to streamline administrative requirements not investigative requirements. The need still exists to do an indepth investigation to enhance accident prevention.

During the USASC's quality review of our Class C AAARs, they called on numerous occasions and requested additional information or clarification of information on the form. Several times, we had failed to either collect or document enough information to support the form. It was very difficult to go back and try to get the information after the accident investigation board had been dismissed. Although you may be able to get some of the information from historical records, other information may be permanently lost. Board presidents must continue to collect and document all supporting information, not simply check or fill in the blocks on the AAAR form.

■ **Collect MACOM-specific information too**. Another thing to keep in mind is that your MACOM safety office may require information that is not included on the AAAR. For example, on the AAAR there is a block for total flight hours in the aircraft mission, type, design, and series. However, FORSCOM Safety requires us to also provide the crewmembers' total flight hours. FORSCOM also requires the ages of the crewmembers, the type of crew coordination training they had received, and the mission risk assessment. These items are not required on the AAAR form.

■ **Decide what supporting documents to attach.** Since the purpose of the AAAR is to streamline administrative requirements, you must determine what additional supporting documents to attach to the AAAR form. At Fort Hood, we prepare and stack the file copy report as if it were a Class A or B accident. In the copy that we provide to FORSCOM and the USASC, we extract and attach only the documents that support the findings and recommendations of the investigation board. Although they are in our copy of the report, we rarely attach orders appointing the board, weather reports, estimated cost of damages, weight and balance, flight plans, and negative toxicology reports. Each report and circumstance is different; we try to retain everything but only provide what is required to support the findings and recommendations.

■ **Provide a copy of recommended corrective action to appropriate headquarters**. On Class D, E, and F incidents, the unit will prepare and send the AAAR form as directed by their command to the USASC. However, if the unit addresses a recommended corrective action to higher or another headquarters, you must provide a copy of the AAAR to that headquarters and the installation-level safety manager (see AR 385-40, paragraph 5-1a and b). At Fort Hood, we had a case where a unit completed an AAAR for a Class E incident and recommended that HQ, III Corps and Fort Hood take corrective action but sent the AAAR directly to the USASC. It was several weeks later and by accident that we learned of the recommendation.

Our experience with the new AAAR form has been very positive. The III Corps and Fort Hood chain of command has easily adapted to and accepted the new AAAR form. Our next challenge is the Abbreviated Ground Accident Report form.

POC: MAJ Wendell W. Blair, III Corps Aviation Safety, DSN 737-3338 (817-287-3338)

Aviation Safety Officer Refresher Course gets thumbs up

It was an exciting week seeing old friends, meeting new friends, and being able to exchange ideas on safety to make the Army of the future a safer force in its warfighting role. I think everyone would agree that the first Aviation Safety Officer Refresher Course was a resounding success.

This course—developed and taught by the Army Safety Center—has long been overdue and much needed by all of us in the safety field. It was time to clean out the cobwebs and rejuvenate our systems. This old soldier heard many excellent suggestions and comments during the week-long course that we in the aviation community can use to ensure mission accomplishment while protecting the force.

The first class included 42 aviation safety officers from the attack, cavalry, medevac, air assault, medium lift, general support, special operations, and military intelligence communities. The class included safety officers from company, battalion, brigade, division, corps, installation, and Army level. The National Guard and Reserve components were also well represented. The class included one lieutenant colonel, two majors, and several CW5s, CW4s, CW3s, and CW2s, and civilians. The safety experience level ranged from about 4 years to more than 20.

As you can see, there was a wealth of knowledge and experience represented in this first refresher course. All provided excellent feedback on the safety programs used in their units. The chance to talk lessons learned and how to improve our force protection efforts is something you can't put a price on.

Aviation Safety Officer Refresher Course schedule

Course Number	Dates
95-3	28 Aug — 1 Sep 95
96-1	4 — 9 Dec 95
96-2	18 — 22 Mar 96

Assignment to the course is through the ATARS. This is a computer-based system wherein the soldiers selected to attend training are entered into the system by their personnel manager at the U.S. Total Army Personnel Command or by the appropriate National Guard or Reserve training manager. Requests for attendance should be made via DA Form 4187 or direct coordination with personnel managers.

The Aviation Safety Officer Refresher Course is one professional development course that all safety officers need to put on their schedule to attend. If you haven't scheduled yourself to attend the next class, see the sidebar for future course data and details on how to apply through the Army Training Requirements and Resources System (ATARS). You need to do it **today**!

POC: CW4 Scott Johnson, Aviation Branch Safety Office, DSN 558-3000/2388 (334-255-3000/2388)

The unit "Safety Bulletin"

We all know that National Guard units generally drill one weekend per month and spend 2 weeks or so together during annual training each year and that individual aircrewmembers have a fixed number of additional flight training periods available for aircrew and unit collective flight activities. What we sometimes forget is that time with the troops is very limited.

As the assistant aviation safety officer of a UH-60-equipped combat assault helicopter company in the Alabama Army National Guard, I am well aware that the unit safety office does well to comply with regulatory requirements regarding quarterly safety briefings, quarterly safety council meetings, and semiannual safety surveys given the finite number of drill weekends during a training year. Simple math reveals that accomplishing one of these mandatory tasks per drill weekend would account for 10 of the 11 weekend drill periods normally available without taking into consideration the fact that several drills per year are spent in the field.

Training schedules during drill are tightly packed and routinely filled to the brim with attempts to meet mandated training requirements and provide the flight time required to maintain proficiency in combat assault tasks.

Guard soldiers also face limited access to unit library materials. Field manuals, Army and National Guard regulations, training circulars, technical manuals, and so

forth are all available in the unit library, but individual soldiers simply don't have the time to search out and read all of the materials we would like for them to be familiar with.

Getting safety information to soldiers

In an effort to maximize soldier exposure to safety information in an efficient manner, our unit safety office decided to publish a local "Safety Bulletin." This one-sheet (front and back) publication—with reproduction of the company logo and a sketch of the UH-60 at the top to make it more eye-catching—is prepared monthly and distributed during weekend drills to all unit members.

The bulletin does not take the place of the quarterly unit safety briefing. While our bulletin may not be a novel idea, it is a reminder that "keeping it simple" (especially when time is a factor) is sometimes a good way of accomplishing the mission. The bulletin puts safety matters in front of the soldier in an easy-to-read format that can be tucked in a pocket and taken home for a relaxed reading later.

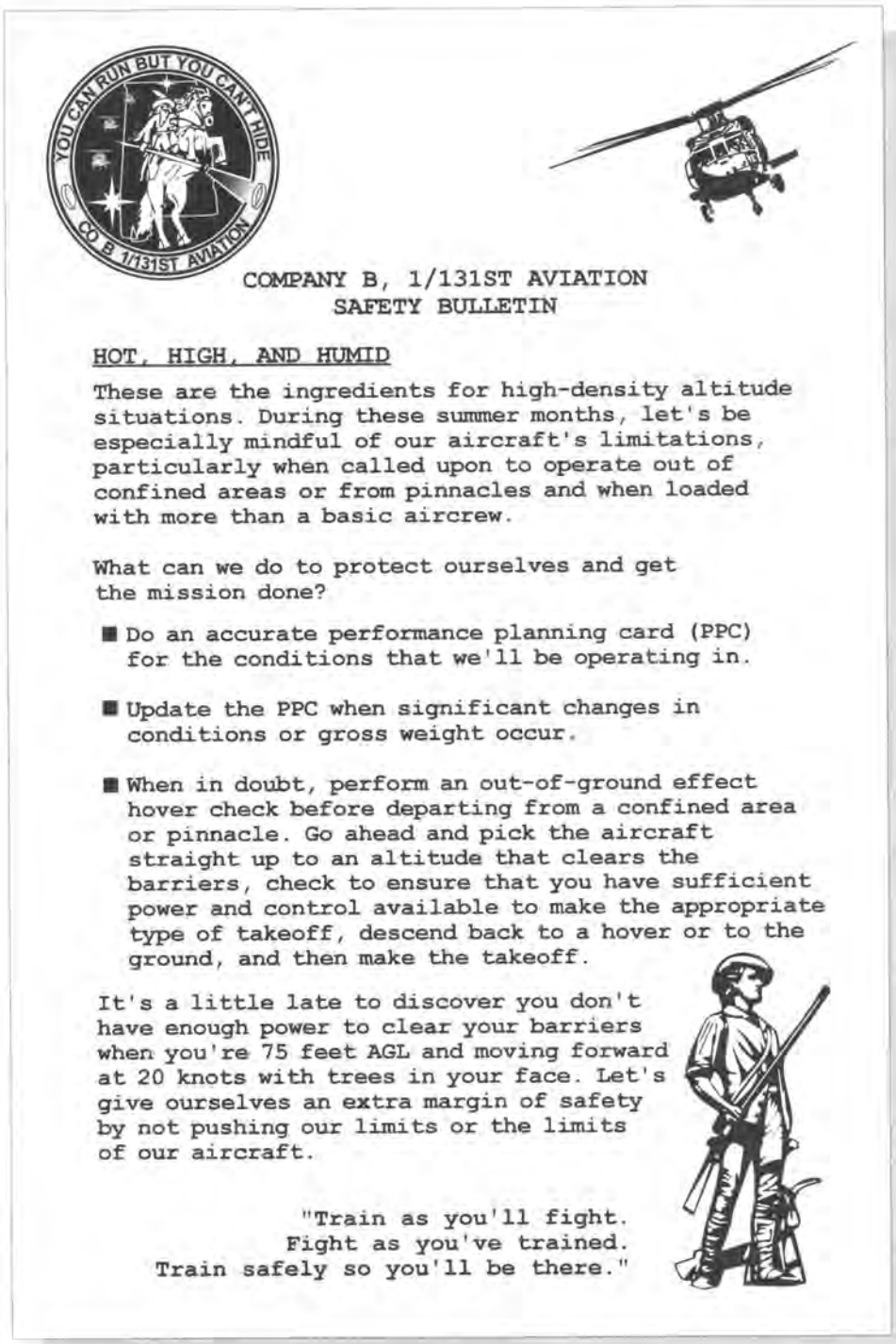
The bulletins are also posted on the unit's safety bulletin board, distributed to other companies in the battalion by the battalion ASO, and sent to the safety officer at the Army Aviation Support Facility where we fly.

Articles—usually four to six per bulletin—are brief, edited versions of materials extracted from other sources, safety tips, and discussions of matters of particular concern to the unit and its operations. The article on high-density altitude shown in the sidebar is a sample of the kind of timely reminder we publish in the bulletin.

Other examples of recent topics include developing a safety philosophy, hearing conservation, crew coordination, firefighting facts, FOD, OSHA and Army safety, hangovers and flying, avoiding gun accidents, and of course, risk management. Our command places strong emphasis on the integration of risk management into all unit operations, the accomplishment of our assigned missions within the framework created by the proper application of risk management principles and techniques, and the inclusion of all unit members as active participants in the Unit Safety Program.

Our bulletin is simply one small part of the safety program in a unit whose doctrinal goal is force protection and whose motto is "Train as you'll fight; fight as you've trained; train safely so you'll be there."

POC: CW3 Frank B. Angarola, Company B, 1/131st Aviation (Assault Helo), Alabama Army National Guard, 5700 East Lake Blvd., Birmingham, AL 35217-3597, (205-536-9645)



COMPANY B, 1/131ST AVIATION
SAFETY BULLETIN

HOT, HIGH, AND HUMID

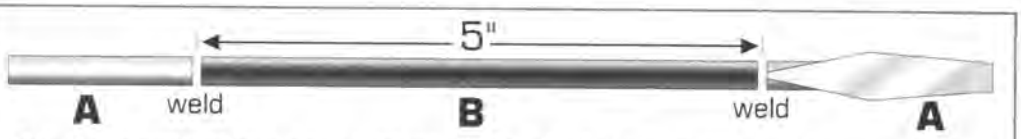
These are the ingredients for high-density altitude situations. During these summer months, let's be especially mindful of our aircraft's limitations, particularly when called upon to operate out of confined areas or from pinnacles and when loaded with more than a basic aircrew.

What can we do to protect ourselves and get the mission done?

- Do an accurate performance planning card (PPC) for the conditions that we'll be operating in.
- Update the PPC when significant changes in conditions or gross weight occur.
- When in doubt, perform an out-of-ground effect hover check before departing from a confined area or pinnacle. Go ahead and pick the aircraft straight up to an altitude that clears the barriers, check to ensure that you have sufficient power and control available to make the appropriate type of takeoff, descend back to a hover or to the ground, and then make the takeoff.

It's a little late to discover you don't have enough power to clear your barriers when you're 75 feet AGL and moving forward at 20 knots with trees in your face. Let's give ourselves an extra margin of safety by not pushing our limits or the limits of our aircraft.

"Train as you'll fight.
Fight as you've trained.
Train safely so you'll be there."



Cut the shank of the screwdriver blade bit (A) in half, then weld 5 inches of 3/32-inch stainless-steel rod (B) between the two halves.

STACOM

■ Night vision goggle maintenance

Recent DES assistance visits have shown that many units have not complied with the requirement to fabricate a special tool (screwdriver) that is necessary to properly torque purge ports on the AN/AVS-6(V)l and AN/AVS-6(V)2 night vision goggles. Instead of using the required fabricated tool, maintenance personnel are using standard screwdrivers, pocket knives, and other implements, resulting in distortion and disfigurement of purge port screws.

The root problem is that some NVG maintainers did not post the changes to TM 11-5855-263-23&P: Aviation Unit and Intermediate Maintenance Manual, Including Repair Parts and Special Tools List, AN/AVS-6(V)l and AN/AVS-6(V)2 as required by TB 1-1500-346-20: Updated Information on Night Vision Goggles, paragraph 8e(3), dated 5 January 1994. Unfortunately, a new TB 1-1500-346-20, dated 20 January 1995, that superseded the 5 January 1994 version was distributed and the reference to the changes was omitted. (TM 11-5855-263-23&P, dated 15 May 1995, is scheduled for distribution in the near future and will incorporate these changes.)

To assist those maintenance personnel who missed the changes and discarded the superseded TB 1-1500-346-20, the changes as they appeared in paragraph 8e(3) are as follows:

(3) TM 11-5855-263-23&P shall be changed to include the following corrections. Implement these corrections immediately.

(a) Tools and test equipment, Appendix B, Section III. Torque wrench, NSN 5120-01-618-4433 replaces item number 16. It is used to perform tasks on the AN/AVS-6 using the tube retaining wrench with the 1/4-inch drive.

(b) Tools and test equipment, Appendix B, Section III. Soldering iron NSN 3439-01-183-4623 replaces the currently listed NSN.

(c) Page C-2-1, item 2 (Part 1-1/2 SC). The correct NSN for "eyepiece lens cap" is NSN 5340-01-058-5930.

(d) Page C-2-1, item 11. The correct NSN for "objective lens cap with light interference filter (LIF) adapter" is NSN 5340-00-558-4962. Change part number listed to EC-23.

(e) Page C-2-1, item 11. The correct NSN for "objective lens cap without light interference filter (LIF)" is NSN 5855-01-152-5849. Change part number listed to SF-10. This part must be altered before use by cutting out the inside ridge. This is authorized at the unit level.

(f) Appendix E. Add the following fabricated tool to use as the screwdriver bit to accomplish the torque of the AN/AVS-6 inside the purge ports: "Fabricate screwdriver blade bit (NSN 5130-00-021-2015) by cutting the shank in half and welding 5 inches of 3/32 stainless steel rod between the two halves."

(g) Page 2-36, paragraph 2-14. This paragraph describes the AN/AVS-6 power pack test. Clarification is required for the low battery indicator test. The -Gl (P/N 66868300680) version power packs cannot be tested using this method on the TS3895A/UV (not the TS3895/UV) for test set serial numbers 1001-1999. For these power packs, use the alternative power pack test listed in paragraph 2-15, page 2-39, during the 180-day service. TS3895A/UV with test set serial numbers 2000 and subsequent can be used to test any power pack.

As previously stated, the required tool is to be used to accomplish the torque of the AN/AVS-6 inside the purge ports. The illustration shown may help with the local fabrication and will appear as Figure E-3 in the soon to be distributed TM 11-5855-263-23&P.

Questions concerning any aspect of night vision goggle maintenance may be directed to any of the points of contact listed in paragraph 16 of the current TB 1-1500-346-20: Updated Information on Night Vision Goggles.

■ Logging of NVG time

There is significant confusion in the field concerning which flight condition symbol "NG" or "NV" to use when logging AN/AVS-6 NVG flight time on the DA Form 2408-12: Army Aviator's Flight Record. Even though FM 1-300: Flight Operations Procedures and DA Pam 738-751: Functional Users Manual for the Army Maintenance Management System-Aviation (TAMMS-A) list "NV" as the flight condition symbol for AN/AVS-6, the use of "NV" is not authorized by AR 95-1: Flight Regulations, paragraph 2-6c. Consultations with the proponents for FM 1-300 and DA Pam 738-751 confirm that the reference to "NV" as a flight condition symbol will be eliminated from the next editions. Only the flight condition symbols listed in AR 95-1 are authorized for use.

Points of contact are CW5 Meline or CW4 Estrada, DES, DSN 558-2442.

■ HIRTA

DES has determined that many units with UH-60s are not aware of the new HIRTA message dated 23160OZ Mar 95, CDR ATCOM, Subject: UH-60A, UH-60L, EH-60A HIRTA Standoffs. This classified message must be reviewed by all operational UH-60 aviators.

Points of contact are Mr. Reed or Mr. Albright, ATCOM, DSN 693-1634/1638/1648.

STACOM 164 **July 1995**

Prepared by the Directorate of Evaluation and Standardization, USAAVNC, Fort Rucker, AL 36362-5208, DSN 558-1098/3504. Information published here generally precedes the formal staffing and distribution of Department of the Army official policy. This information is provided to all commanders to enhance aviation operations and training support.

William H. Bryan
Colonel, Aviation
Director of Evaluation and Standardization

ShortFAX
Keeping you up to date

Bulletin board link to ATCOM

The Maintenance Data Management Support bulletin board system (BBS) is now available from 0800 to 0600 CST Monday through Friday and 24 hours per day on Saturday and Sunday. The Maintenance Data Management Support BBS provides—

- Easy on-line, step-by-step *new user* registration.
- Electronic transfer of data.
- Electronic message conferencing between registered users.
- SOF and ASAM messages available on-line for downloading.

You may reach the BBS at DSN 693-9057 (314-263-9057), voice extension -3493 or -1955, FTP - m3388f-bbs.army.mil 'guest'. In use: Universal Data Systems, error correcting external modems: 1 200/2400/9600 8/N/1.

For more details, call Mr. Jack Harris, system operator, or Mr. Allan Journey, co-system operator at DSN 693-1955 (314-263-1955) or register today and leave them a note.

Avn safety additional skill identifier

If you are an MOS 68B, 68F, 68G, 68N, or 68P who has completed the Aviation Accident Prevention Course (AAPC) (regardless of when you completed the AAPC), you are authorized and encouraged to request that the A2 aviation safety additional skill identifier (ASI) be awarded to you. Requests for the A2 ASI should be made through normal personnel channels, and you must submit your AAPC completion diploma along with your request.

DA Circular 611-94-2: Implementation of Changes to the Military Occupational Classification and Structure dated 27 January 1995 authorized MOS 68B, 68F, 68G, 68N, and 68P personnel to be awarded the ASI A2. With this change and the restrictions outlined in AR 611-201: Enlisted Career Management Fields and Military Occupational Specialties, Table 6-1, all soldiers in Career Management Field (CMF) 67, which includes 67 and 68 series MOSs, and MOS 93P are authorized the A2 ASI provided all other requirements are met. Rank and pay grade prerequisites outlined in DA Pam 351-4: U.S. Army Formal Schools Catalog, Table 2-1 are not affected by this MOS change.

POC: MSG Keith A. Gallion, USASC, Training Division, DSN 558-1154 (334-255-1154)

Accident briefs
Information based on preliminary reports of aircraft accidents

Aviation flight accidents

Utility

UH-1 Class C

H series - During RL 3 refresher training, crew was performing emergency governor operations. Engine experienced overspeed exceeding 7200 RPM. Crew landed aircraft without further incident. Engine change is required due to overspeed.

UH-1 Class E

H series - At 80 knots and 100 feet AGL during FTX service mission, aircraft was flying west into setting sun with high glare from snow when it struck 1-inch cable strung across small valley. PC landed aircraft immediately. Inspection revealed cracked left windscreen. Maintenance officer noted no further damage and authorized aircraft one-time flight back to field site. Wire was not marked on hazard map and not noted during recon prior to flight into valley.

UH-60 Class E

A series - During NVG landing to an unimproved/unmarked LZ, aircraft entered brownout. During landing, aircraft rolled forward, traveling through a ditch. Crew suspected ERFS made contact with ground. Postflight inspection revealed that two main rotor blades received small nicks in trailing edges. Damage caused when main rotor blade contacted AN/ALQ 144.

Attack

AH-1 Class B

F series - Aircraft rolled while at 3-foot hover. Blades contacted ground, skids collapsed, and tail boom separated. No injuries.

AH-1 Class C

F series - During PMD, crew discovered lightning strike damage to one K747 blade. Crew from previous flight remembered strange noise during flight, but all cockpit indications had been normal.

F series - While exiting range following completion of Table 7 aerial gunnery, aircraft incurred blade strike. Crew landed aircraft without further damage.

AH-64 Class A

A series - During night training mission, aircraft was en route to home base from deep attack battle position when it struck wires. Aircraft entered left yaw, made two 360-degree right spins, descended, and struck warehouse and semitrailer. Crew extinguished postcrash fire. Minor injury.

AH-64 Class B

A series - Engine and rotor noise increased significantly during night vision system traffic pattern flight. Cockpit readings revealed No. 1 Np and Nr rapid increase (more than 100 percent) with No. 2 Np at zero. Crew increased collective to maintain Nr within limits and retarded Np 2 power to equal engine output. Inspection confirmed main rotor blade damage.

AH-64 Class C

A series - As night shift personnel were about to ground handle aircraft into hangar, they discovered damage to three tail rotor blades. Contract personnel had previously flown aircraft on maintenance test flight for balancing main rotor system and upon completion had failed to postflight or secure aircraft.

A series - No. 1 engine incurred overspeed condition. Three main rotor blades sustained damage.

Cargo

CH-47 Class C

D series - Aircraft was slingloading disabled UH-60A to home station when sling blade tiedown broke, allowing UH-60 blades to flap. First blade snapped 2 feet from rotor hub, and second blade also flapped and sustained damage.

CH-47 Class E

D series - During cruise flight, crew chief noticed imploded sides of ERFS tank. Crew discontinued use of ERFS and continued to

destination. Postflight inspection revealed ERFS vent cap was installed.

Observation

OH-6 Class C

F series - Flight of two aircraft were en route to destination when trail aircraft experienced loss of engine power. Pilot autorotated to nearby field. Aircraft landed hard. Initial inspection revealed damage to tail boom.

A series - Aircraft was at 10 knots and 6 feet while performing ATM mission as No. 2 aircraft in flight of two. Aircraft entered uncontrolled flight, pitching forward and aft and spinning counterclockwise with erratic changes in altitude. Pilot regained partial control. Aircraft landed hard, bouncing 2 to 3 feet off ground. Aircraft landed hard a second time with left skid low and sustained significant damage.

OH-58 Class C

A series - Evidence of blade strike was discovered during postflight inspection. One main rotor blade sustained tip cap damage. Transmission is being inspected for sudden stoppage.

A series - During night low-level autorotation demonstration, pilot was attempting power recovery at 8 to 10 feet AGL when aircraft experienced excessive right yaw. Aircraft touched down level, but hard landing inspection confirmed drive train and tail boom damage.

D series - During termination phase of touchdown autorotation, pilot failed to lower collective pitch. IP failed to take corrective action, and excessive blade conning occurred. All four main rotor blades were damaged beyond repair.

D series - While in cruise flight, crew experienced warning, caution, and failure cockpit readings, followed by burning odor. Crew observed fire in left avionics compartment. Pilot executed precautionary landing and emergency shutdown procedures.

Fixed wing

C-12 Class C

D series - During startup procedures, No. 2 engine experienced hot start when starter switch failed due to defective generator control unit (GCU). During start sequence on previous day, No. 2 engine would not start. Maintenance replaced faulty GCU. Crew started No. 2 engine and departed on first leg of mission. On morning of hot start, No. 1 engine started normally. When crew attempted to start No. 2 engine, they heard loud chattering noise being emitted from starter generator relay. Pilot placed starter switch in off position, then attempted another start of No. 2 engine. Crew again heard chattering noise. PC decided to make third attempt to start No. 2 engine. As No. 2 engine N1 stabilized above 12 percent for 5 seconds, pilot moved condition lever to low idle. Turbine gas temperature (TGT) rose rapidly. When TGT passed 750 degrees, PC called for abort start. Pilot pulled condition lever to fuel cutoff and placed starter switch to starter only. However, starter switch had failed and could not provide cooling air to engine. TGT rose to peak of 1,200 degrees for 2 seconds before beginning to cool. Maintenance discovered that No. 2 GCU replaced on previous day had shorted.

F series - Aircraft was struck by lightning at 16,000 feet as it was descending through clouds for landing.

Training

TH-67 Class C

A series - Pilot was executing standard autorotation and pulled initial pitch too early/excessively. IP got on controls and attempted to complete maneuver. Aircraft touched down with low rotor, resulting in mast bumping and pylon whirl that damaged mast, swashplate, striker plate, isolation mount cover, and cowling.

Messages

■ Aviation safety action operational message concerning Hydra-70 rocket motor suspension and information for all AH-64A/D, OH-58D, AH-1S/P/E/F, A/MH-6, and MH-60 series aircraft (GEN-95-ASAM-04, 021818Z Jun 95). Summary: A system safety risk assessment (SSRA) has been staffed. As a result of the SSRA, the U.S. Army Materiel Command (AMC) has released some lots of 2.75-inch Hydra-70 rockets with the MK-66 rocket motors with Indian Head-produced propellant grain. This message is released by ATCOM to assure affected aviation units are aware of the release of specific lots of rockets and operate IAW the restriction listed in this message when training. AMC has conducted an extensive investigation into the MK-66 early motor blow hazard. The restrictions listed in the message represent a conservative approach to mitigate the risks associated with firing the 2.75-inch FFAR with motors containing propellant grains extruded at the Indian Head facility. The primary suspected cause of the early motor blow on the Indian Head rocket motors is mishandling of the rocket motor. Changes to the handling procedures have been implemented and should reduce the risk of this hazard. The purpose of this message is to provide a listing of the usable lots of MK-66 rockets to the aviation community and to provide to the user the following operational restrictions that have been agreed to by AMC, Program Executive Office (PEO) Aviation, U.S. Army Special Operations Command (USASOC), U.S. Army Training and Doctrine Command (TRADOC), and the U.S. Army Aviation Center (USAAVNC) in the SSRA:

- No unpackaged (bare) rockets are to be transported in ground vehicles.
- Do not use rockets if dropped.
- Pending completion of evaluation of vulnerability assessment test results, aircrewmembers firing the rockets from A/MH-6, MH-60, and AH-1 series aircraft will wear aviation body armor. Aircrewmembers firing the rockets from AH-64A/D and OH-58D aircraft will wear aviation body armor; have their helmet visors down, unless wearing night vision goggles; and have doors and seat armor side panels installed.
- In addition to normal reporting procedures, report any future rocket motor blowups to Dr. Mohsen Mahmound at ATCOM, E-mail MMAHMOUD%ADAS@ST-LOUIS-EMH7.ARMY.MIL, DSN 693-1631 (314-263-1631).
- In the event of an incident, it is essential that all information related to the incident be reported to assist in the followup investigation to determine the cause. The desired information is as follows:
  - □ Distance from the aircraft/launcher.
  - □ Approximate range and time after launch.
  - □ Details of incidents such as size and type of fragments and unusual flight characteristics or noise.
  - □ Rocket lot number.
  - □ Atmospheric conditions.

Contact: Mr. Brad Meyer, DSN 693-2258/2085 (314-263-2258/2085).

■ Aviation safety action informational message concerning maintenance procedures for all AH-1 and UH-1 aircraft equipped with oil debris detection system (ODDS) and aircraft using Army oil analysis program (AOAP) sampling (UH-1-95-ASAM-03/AH-1-95-ASAM-03, 051235Z Jun 95). Summary: Many UH-1 and AH-1 aircraft have the ODDS installed. This system operates and is maintained the same on both aircraft. Since ODDS has been fielded, there has been uncertainty and confusion regarding its operation and maintenance. This ASAM summarizes operating characteristics and maintenance requirements for ODDS installed on AH-1 and UH-1 aircraft. In addition, it provides maintenance requirements for aircraft that are not equipped with ODDS that are using the standard AOAP procedures. **Note**: CDR

ATCOM message 122100 Oct 93 (AH-1-94-ASAM-01/UH-1-94-ASAM-01) is rescinded by this message. The purpose of this message is to provide user operating and maintenance requirements for ODDS-equipped aircraft and AOAP aircraft. Contact: Mr. Brad Meyer, DSN 693-2085 (314-263-2085).

■ Aviation safety action maintenance mandatory message concerning procedure to inspect/replace three stop check valves in the fire extinguishing system on all AH-64 aircraft (AH-64-95-ASAM-03, 071443Z Jun 95). Summary: A recent AH-64 incident disclosed a defective fire extinguisher stop check valve, P/N 7-11721003, for the No. 2 engine. This may cause the fire extinguisher system to be inoperative. The purpose of this message is to require inspection and replacement, if necessary, of three stop check valves (No. 1 engine, No. 2 engine, and APU) in the fire extinguishing system. This is to assure proper location of the positioning pins. Contact: Mr. Lyell Myers, DSN 693-2438 (314-263-2438).

■ Aviation safety action maintenance mandatory message concerning inspection and lubrication of flight control rod end bearings on all CH-47D, MH-47D, and MH-47E aircraft (CH-47-95-ASAM-05, 251420Z May 95). Summary: A CH-47 operator experienced the following incident during ground checkout of the aircraft. Prior to engine start, unusual movements of cockpit controls were noted. During single boost controls motion checks, controls exhibited abnormal cross couplings between the various axes and in some positions required abnormally high forces to move. When the collective mag brake was released, the thrust control lever rose to above its normal detent position. Subsequent inspection revealed that a flight control rod end bearing housing had separated. The purpose of this message is to require inspection and lubrication of bearing listed in this message at the next phase inspection and every third phase inspection thereafter and inspection of pedal box bearings at the next phase inspection and lubrication each time they are removed from the aircraft. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

■ Aviation safety action maintenance mandatory message concerning inspection of bolt, shear, NSN 5306-00-944-7540, used in the pylon installation on all OH-58A/C aircraft (OH-58-95-ASAM-07, 311218Z May 95). Summary: A Cat I deficiency report stated that a piece of a bolt with the nut attached was found under an OH-58, leading to discovery that a bolt in the upper controls was broken. The broken bolt was examined by Corpus Christi Lab and by U.S. Army Research Lab. The bolt was improperly processed at manufacture, causing hydrogen embrittlement. The purpose of this message is to require inspection for and removal of all defective bolts by type and manufacturer. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

■ Aviation safety action operational message concerning windshield anti-ice operating instructions for all C-12F3 (Air Force) and C-12R aircraft (C-12-95-ASAM-02, 311246Z May 95). Summary: In the past, there have been incidents of cracked windshields in the RC-12H aircraft when the windshield anti-ice has been activated. It has been determined that this is not a systemic design problem; it is an operational problem. The Army aircraft manuals are presently being drafted. The purpose of this message is to provide the field with advance instructions on operation of the windshield anti-ice. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

■ Aviation safety action operational message concerning flight limitations when operating C-12F3 (Air Force) and C-12R model aircraft in icing conditions (C-12-95-ASAM-03, 311321Z May 95). Summary: The U.S. Army icing test of an RC-12/C-12 airframe (RC-12N) was completed by the Airworthiness Qualification Test Directorate of the Aviation Technical Test Center. The results are different from those obtained during FAA icing certification. The most significant observations were—

- Accumulation of ice on the pitot tube assemblies and unprotected airplane surfaces caused vibrations from the indicated airspeed (worst case—loss of pilot and copilot indicated airspeed) and significant increases in parasitic drag.
- Ice formations on wing surfaces immobilized the stall warning vane and obstructed the heated/unheated fuel vents.

The purpose of this message is to place flight restrictions on C-12F3 and C-12R aircraft in icing conditions, alert aircrews of possible hazards due to ice accumulations, have this message placed in the pilots reading file and included as part of the crew briefing, add the changes to C-12F3 and C-12R operators manuals, add a warning to the operators manual, and align these aircraft with the rest of the C-12/RC-12 fleet. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

For more information on selected accident briefs, call DSN 558-2119 (334-255-2119).

In this issue:

- Another refueling fire
- Safety-of-use message SOUM-ATCOM-95-006
- What would you do?
- Aviation units needed to support Ranger training at Camp Merrill
- Abbreviated aviation accident report lessons learned
- Aviation Safety Officer Refresher Course gets thumbs up
- The unit "Safety Bulletin"
- STACOM
- Bulletin board link to ATCOM
- Avn safety additional skill identifier

Class A Accidents through June

		Class A Flight Accidents		Army Military Fatalities	
		94	95	94	95
1ST QTR	October	2	0	0	0
	November	3	0	0	0
	December	2	1	2	0
2D QTR	January	1	1	2	1
	February	2	0	0	0
	March	0	1	0	0
3D QTR	April	5	1	2	5
	May	0	2	0	2
	June	0	2	0	0
4TH QTR	July	4		5	
	August	1		0	
	September	1		0	
	TOTAL	21	8	11	8

U.S. ARMY SAFETY CENTER

Report of Army aircraft accidents published by the U.S. Army Safety Center, Fort Rucker, AL 36362-5363. Information is for accident prevention purposes only. Specifically prohibited for use for punitive purposes or matters of liability, litigation, or competition. Address questions about content to DSN 558-3770. Address questions about distribution to DSN 558-2063. To submit informatio
558-9478/

Thomas W.
Brigadier G
Commandi
U.S. Army S

60984 81800