Flightfax
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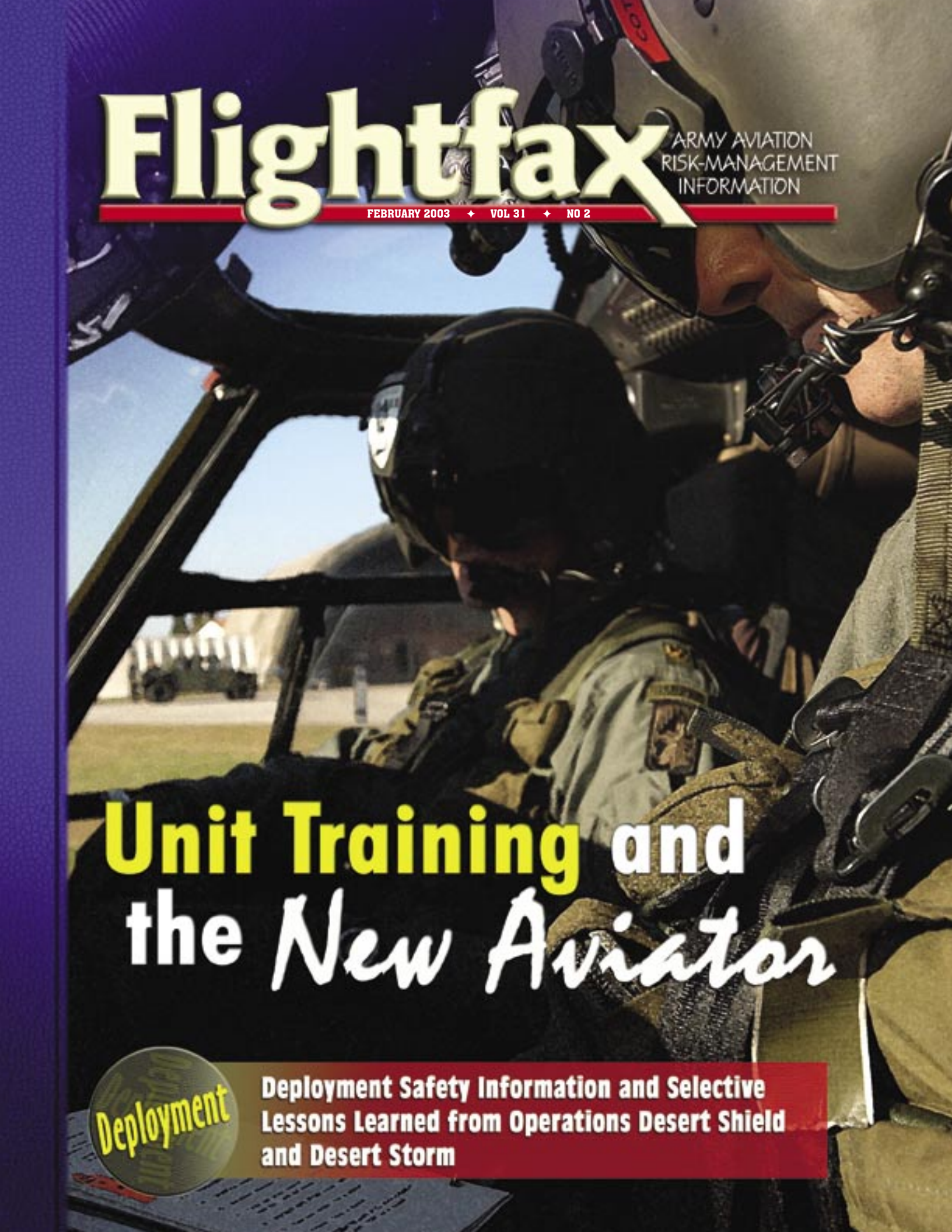

Unit Training and the New Aviator

Deployment

Deployment Safety Information and Selective Lessons Learned from Operations Desert Shield and Desert Storm

Flightfax

ARMY AVIATION RISK-MANAGEMENT INFORMATION

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James E. Simmons
Brigadier General, US Army
Commanding

Leading Is Not Always Easy, but Profoundly Rewarding

Conditions and situations that can tax even the most seasoned leader's skills abound in our Army today: uncertain world situations, multiple training and real-world missions and tasks, transformation of unit formations, testing and fielding of new weapons systems, back-to-back deployments to training centers and theaters of operation. In the midst of all these changes and uncertainties, leadership still encompasses the awesome responsibility of ensuring the combat readiness of our units and the safety of our soldiers.

Safe operations are dependent upon effective command and control. Leaders are multi-tasked with numerous administrative and command responsibilities associated with running a unit and finding time to be present with their units during training to help them understand where we are at risk. Whether it is a training mission or a real-world combat mission, leaders can make a huge difference in their unit's safety performance by actively being involved in the planning, preparation, and execution of the mission.

Despite the inherent challenges of tough, realistic training and the adverse conditions encountered on the battlefield, we can keep accidental losses to a minimum. We can train hard and we can execute combat missions safely if we successfully integrate risk management into planning and preparations. As officers, NCOs and soldiers, we can excel in safety performance and mission accomplishment by aggressively managing risks and executing missions to established standards.

Good training produces tough, disciplined, and highly motivated soldiers. When given a mission, soldiers will accomplish it. But we must ensure that our soldiers are disciplined to execute that mission to an established standard. Any shortcut, lapse in discipline (individually or collectively within the unit), or a failure to execute to standard is stepping on the fast track to an accident and a price much higher than we are willing to pay. If we mold disciplined soldiers, they will accept responsibility for their own safety, the safety of others, and the protection of valuable Army equipment. Being a leader who is a stickler for maintaining discipline on even seemingly minor issues may not make you popular within the unit today, but what soldiers really want is consistent leadership.

Sometimes, despite our best efforts to safeguard our soldiers, breakdowns in managing risks do happen and we lose soldiers in combat and in costly accidents. At the end of the first quarter of FY03 we had 16 Class A on-duty accidents with 15 fatalities, compared to 8 in FY02 and 9 fatalities. On a more positive note, our off-duty Class A accidents and fatalities were down: 24 Class A accidents versus 29 for first quarter FY02 and 24 fatalities versus 33. Of those 24 fatalities, 21 resulted from POV accidents.

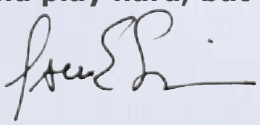
With every fatality—accidental or combat loss—comes the hardest part of being a leader: helping the victim's family and the unit deal with the loss. Leading is not all about supervising the loading of trains and airplanes; it includes dealing with the sad realities of combat losses and losing soldiers to accidents that should have been prevented.

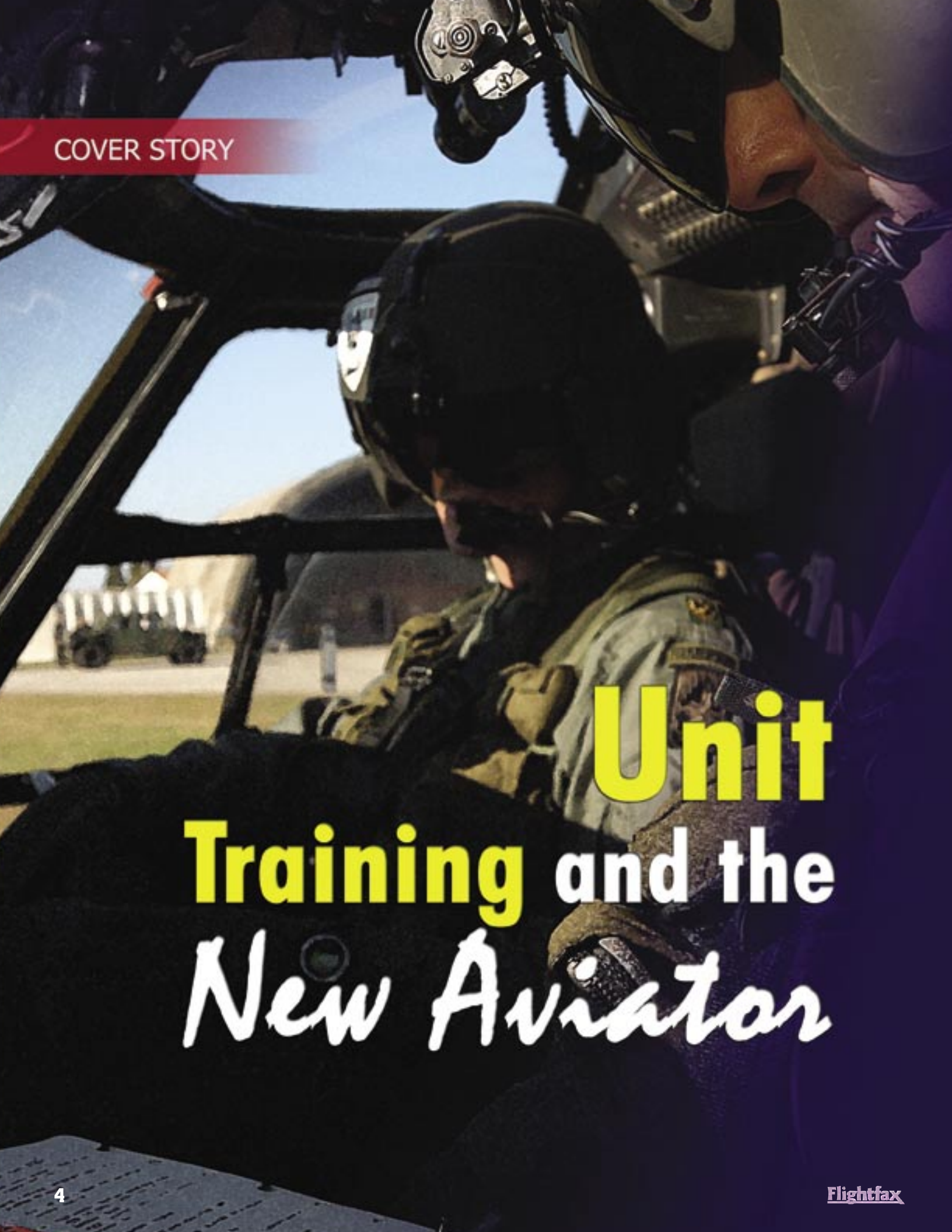
Effectively leading soldiers and managing risks appropriately make it possible for us to conduct tough, realistic training and operational missions while minimizing losses. Leading will never be an exact science with textbook solutions that can be applied to every situation. However, using the risk management process provides us with an invaluable tool to help execute exemplary training safely and conduct successful battlefield operations with minimal losses.

Knowing that soldiers' lives often depend on our risk assessments and decisions makes leading the sometimes overwhelming, intimidating, and difficult task that it is. But even though leading is not always easy, leading great soldiers—and leading them safely—is one of the most profoundly fulfilling jobs an individual can be blessed to do within our Army.

Train hard and play hard, but be safe!

BG James E. Simmons





Unit Training and the New Aviator

New pilots fresh out of flight school and arriving at their new units have been in the schoolhouse environment for a year and have acquired a lot of the knowledge and skills they need to become a "real Army aviator," but they lack experience. It is one thing to be flying in "clear blue and 22" conditions under the hood with an IP and quite another to suddenly be forced to make a quick transition to instruments from VMC while "scud running" back to home base. Inadvertent IMC is often all that is needed for an inexperienced pilot to become involved in an accident. It has happened more than once.

■ An OH-58 pilot became disoriented while hovering in snow. One main rotor blade struck the ground, causing the mast to separate and severing the tail boom aft of the horizontal stabilizer. The aircraft then ended up on its left side. This pilot was fortunate. A bit shaken up, he managed to exit the aircraft through the right cockpit door uninjured.

To begin with, this pilot was flying in weather conditions beyond his capabilities. Further, he persisted in his attempt to continue flight even though he had previously experienced spatial disorientation in a whiteout. He was not adequately trained nor did he have knowledge of the techniques for hovering in falling and blowing snow. An effective unit training program would have lessened the possibility of this inexperienced aviator being placed in such a situation.

On his own

It must be remembered that the new pilot has become accustomed to having assistance—someone to rely on. Namely, the IP. When he embarks on his own, no one is available to make his decisions for him.

In gaining experience, the new pilot must not only develop proficiency in handling his aircraft, but also (and what may be even more important) in handling situations—making right decisions and coping with any problems that may arise. Without benefit of unit training, he must acquire this experience on his own. Consequently, he may pick up wrong habits and develop self-taught practices or procedures not found in the operator's manual or contrary to those published. Sooner or later, this means trouble.

Helping hand

In a sense, then, unit training takes the place of the instructor after a pilot leaves flight school. This training (or helping hand) is necessary not only for the new aviator, but for the seasoned one as well. Neither outgrows the need for it. The veteran aviator left to his own designs can develop a case of severe overconfidence to the point that his technique becomes sloppy. Further, he may become so familiar with routine missions that he may disregard established procedures.

Another important purpose of an effective unit training program is that it identifies an individual's strong points as well as his weak ones, and points them out not only to the pilot involved, but also to his commander. Armed with this information, the commander can intelligently assign missions within the capabilities of his pilots and provide any necessary training. *His failure to know the limitations of his pilots can result in mishaps.*

■ During a field exercise, the crew of an OH-58 was detained after completing a mission to a field location because it was thought the aircraft might be needed for another mission. The crew made several requests to be released from further duty because of approaching darkness and the need for crew rest. These requests, however, were denied.

Finally, around 2100 hours, the aircraft was released for flight back to the training area which was located on flat terrain devoid

of trees or other vegetation. While on final approach to an unlighted landing pad, the aircraft impacted the ground in level attitude, causing one minor injury and major damage to the aircraft. The crew was fatigued and both pilots had limited experience in executing night approaches to minimum or non-lighted areas. In addition, no night training program had been established. Couple these facts with the extremely low ambient light conditions that existed, the absence of vegetation or other land features to aid in depth perception, and the dust present in the area to further restrict visibility, and it can readily be seen that the demands placed on these pilots far exceeded their capabilities.

To be effective, a training program must be tailored to a unit's needs. Consequently, no two programs will necessarily be exactly alike—even if the units involved are operating in the same geographic area and using the same type of aircraft.

Tailored program

To be effective, a training program must be tailored to a unit's needs. Consequently, no two programs will necessarily be exactly alike—even if the units involved are operating in the same geographic area and using the same type of aircraft. Specific mission requirements of each unit are the prime considerations, along with the equipment being used and the environment in which the unit must operate. This includes climate and topography.

Special problems

Although many training tasks can be readily worked into the unit's normal operations; some cannot, and these pose special problems. For example, functions such as inserting and extracting troops in confined areas, or tactical missions that require night formation flying fall into this category. Special training is necessary for tasks such as these, and often the training hours available to conduct it are insufficient.

This is where a good record system can be invaluable. While it won't magically produce extra hours for training, it will show the number of pilots qualified to perform a particular type of mission. If this number is insufficient and the supported unit must have that type of support, then some kind of arrangements will have to be worked out to give the pilots the necessary training and experience.

This may mean an increase in flying hours to be allocated for the following year; or it may mean fewer hours to be applied to support missions, with more to training. *In any case, the commander will not be guessing when he assigns his pilots to specific missions. He will be aware of their capabilities and be able to provide documentation as to what they can and cannot do.* When he makes an assignment, he will know the personnel selected are knowledgeable, experienced, and able to accomplish the mission, and do so with maximum safety.

A good unit program does more than point out strengths and prepare and maintain unit personnel in full readiness. It also identifies any weaknesses associated with the unit's operations for corrective or preventive action.

For everyone

Although the emphasis for unit training is placed on pilots, the supporting elements must not be forgotten. Training is equally important for maintenance and other personnel, including technical inspectors (TIs). Sooner or later, experienced mechanics are reassigned. Their replacements may be seasoned or green; there will be equipment changes as well as modifications in maintenance procedures. Even TIs can become lax, especially when they know they are working with mechanics who are thorough and conscientious.

All in all, effective unit training sharpens the skills of new aviators, as well as all personnel and maintains the entire unit in a state of readiness to accomplish its mission. It enhances safety, produces pride in the individual, increases self-confidence and morale, and ensures peak performance. ■

—Paula Allman, Flightfax Managing Editor, DSN 558-9855 (334-255-9855), paula.allman@safetycenter.army.mil

Operations in Afghanistan

From January to July 2002, our company was deployed to Afghanistan in support of Task Force Rakkasan for Operation Enduring Freedom. We are an AH-64A attack helicopter company assigned to the 101st Airborne Division (Air Assault). During the deployment, we were exposed to a wide range of temperatures, a variety of flight environments, and altitude extremes that we had never operated in before.

We arrived in Afghanistan near the end of January and were based out of Kandahar International Airport. Kandahar is approximately 3,500 feet mean sea level (MSL) and can be characterized as high desert. The terrain is relatively flat with rolling sand dunes 10 miles west and a mountain range approximately 15 miles to the north. Temperatures during January were mild with an average daytime temperature of 12 to 15 degrees Celsius (53°-59°F).

"We had operated at altitudes from 3,500 MSL to 12,500 MSL. We had operated in temperatures from -15 degrees Celsius to temperatures in excess of 50 degrees Celsius. We quickly learned that power management was a skill necessary to survive our deployment."

During the winter months at Kandahar, our aircraft performed well. We had six aircraft equipped with T700-GE-701C engines and two equipped with T700-GE-701 engines. On a daily basis, we had power available to hover out of ground effect (OGE). Even though we had OGE power, we still had to pay close attention to our TGT because we were operating close to dual engine automatic TGT limiting. We knew that it would not be long before power was a luxury that we would not have.

Within three weeks of our arrival, our missions started taking us to higher and higher altitudes. Prior to my arrival in Afghanistan, I had never been above 10,000 MSL in an Apache. Our first mission took us from Kandahar to Bagram Airbase to refuel and then on to the eastern city of Khowst. While en route to Khowst, we crossed a snow-covered mountain at 11,500 MSL. The free air temperature was -15 degrees Celsius (5°F)

when we crossed the peak. While climbing to cross the peak, I applied my maximum torque available from my PPC and noticed that I was not close to TGT limiting. I slowly increased the power until I drooped the rotor and then decreased the collective. I still had not reached TGT limiting, but the droop in rotor RPM was the result of fuel flow limiting. I knew fuel flow limiting existed and how to attain the information from chapter seven of my operator's manual, but had never been exposed to it before.

By the end of April, the temperature at Kandahar was nearing 100 degrees Fahrenheit. We had power to hover in ground effect (IGE), but we no longer had power to hover OGE. We had already conducted numerous missions to include Operation Anaconda. We had fought at altitudes from 8,200 MSL to 10,500 MSL using running fire tactics. The racetrack patterns and running fire tactics we utilized were necessary due to insufficient power to hover and to increase our own survivability.

Performance planning was a critical part of each mission. Each mission required performance planning for altitudes, temperatures, and gross weights that were much higher than we normally operate. During our missions in Afghanistan, we had two aviators assigned to our performance-planning cell. This cell always contained at least one of the unit instructor pilots.

By the time we left Afghanistan, we had operated at altitudes from 3,500 MSL to 12,500 MSL. We had operated in temperatures from -15 degrees Celsius to temperatures in excess of 50 degrees Celsius (122°F). We quickly learned that power management was a skill necessary to survive our deployment. We adapted to this environment well, but were fortunate to have a wealth of experienced aviators in our company. A valuable lesson learned from this deployment is that units should focus early on power management issues and train accordingly so that they are prepared when deployed. ■

—CW3(P) Rich Chenault, A/3rd Battalion, 101st Avn Regt, Fort Campbell, KY, DSN 635-9291

Going Somewhere?

Many of you are either in or on your way to a desert environment and the many different problems associated with living and fighting in it. Throughout history Greek, French, British, and American forces have learned and relearned the problems associated with desert operations. Most recently, our experience in Operations Desert Shield and Desert Storm provided numerous lessons learned that were captured in after action reports. Fortunately, we have the ability to use those lessons and not relearn them the hard way.

It should be remembered that the principles and fundamentals of combat do not change in the desert. Priorities may alter, techniques will vary from those in temperate climates; but soldiers, leaders, and units who are fit and well-trained to fight in other environments will have little difficulty adjusting to desert war. This article highlights certain unsafe situations or hazards, many of which led to accidents, and offers suggestions on ways to eliminate or control these unsafe situations before they cause accidents again. Safety, survival, knowledge, and

common-sense thinking will lead to mission accomplishment.

Deployment

***Situation:* Individuals abandoned safety in an effort to establish "combat posture."**

■ Ensure that all personnel know and use the five-step risk-management process in all operations.

■ Establish a command climate from the outset that promotes safety. Begin by establishing a safety network, designating safety personnel.

■ Enforce standards; require all personnel to perform to standard in all operations.

***Situation:* Unsafe loading and shipment. Examples of violations include failure to identify and mark containers, mixing Class A explosives with incompatible Class C ammunition, corrosives improperly certified and mixed with unidentified hazardous lubricants, MRE rations and undocumented insecticides on same pallet, lack of MILSTAMP advanced cargo clearance, improper storage, and improper security.**

■ Train load teams to standard.

■ Use Quality Assurance Specialist Ammunition Surveillance (QASAS) support.

■ Nesting all equipment and supplies inside vehicles to deal with rough port handling and high seas.

■ Comply with Air Force regulations in airlift of hazardous material (AFR 71-4) and with guidelines in TM 38-250 (11 December 2001).

■ Ensure that vehicles have required tiedown shackles.

■ Keep personnel out from under equipment being lifted aboard ship.

■ Coordinate/understand requirements for "topping off" vehicles prior to shipment.

■ Coordinate port of embarkation shipping requirements for bulk fuel/POL tank transporters through the servicing ITO.

■ Ensure that vehicle master switches are turned off immediately after loading.

***Situation:* Chemical agent resistant coating (CARC) used to repaint vehicles for deployment.**

■ Ensure that CARC painting is done in accordance with established requirements.

■ Caution users that CARC is flammable.

■ Caution users that CARC is toxic and exposure can lead to respiratory problems.

■ Ensure that users wear proper personal protective equipment.

Human factors

***Situation:* Air travel caused dehydration and fatigue.**

■ Encourage hydration before and during air travel.

■ Ensure that arriving troops are given the opportunity to rehydrate and rest before being assigned duties.

***Situation:* Lack of depth perception in desert environment.**

■ Stress that lack of contrast in terrain features reduces depth perception.

■ Ensure vehicle drivers follow proper ground-guide procedures.

***Situation:* Soldiers performing strenuous manual labor.**

■ In general, 2 weeks are required to adjust to the humidity and extreme heat.

■ Remind soldiers to avoid strains and lifting injuries by using proper lifting techniques (lift with the legs, not the back) and getting help with heavy loads.

Aviation operations

***Situation:* Aviation units have problems maintaining standardization.**

■ Deploy standardization and safety personnel with the advance party.

■ Develop unit training program to address new operational hazards.

■ Establish a deployment library and take essential maintenance, operational, and training regulations and safety publications.

***Situation:* NVG operations in desert environment.**

■ Operate according to the crawl-walk-run philosophy, especially in an unfamiliar environment.

■ Conduct detailed planning and mission briefings regardless of pilot experience.

■ Establish all crewmember duties.

■ Identify crew coordination requirements, especially during critical phases of missions.

■ Remind crews that continuous scanning is a must and that the pilot on the controls must "stay outside."

■ Require that all crewmembers assist in obstacle clearance.

■ Remind aircrews that airspeeds must be adjusted downward during low illumination and visibility conditions and in areas of little or no contrast (go low, go slow).

***Situation:* Failure to establish Emergency Helicopter Instrument Recovery Procedures (EHIRP).**

■ Establish EHIRP for area of operation.

■ Include EHIRP in mission briefings (unit SOP).

■ Spell out crew duties and crew coordination requirements.

■ Execute unannounced EHIRP whenever possible.

***Situation:* Failure to conduct local-area operation surveys.**

■ Survey area of operation, and establish hazard maps and restricted flight areas as first order of business.

■ Brief manmade and natural hazards and obstacles for every mission.

■ Brief all crewmembers on their responsibility for scanning to detect hazards and obstacles and to inform pilot on controls.

***Situation:* Uncommanded launch of ordnance from aircraft.**

■ Ensure that aircraft are downloaded or in a safe area when performing inspections or maintenance on weapons systems.

■ Ensure that weapons are oriented away from other aircraft, troops, and facilities.

Ground operations

***Situation:* Vehicle operations result in accidents.**

■ Ensure driver and vehicle commander understand the responsibilities for safe vehicle operation; e.g., establishing and enforcing safe vehicle operations based on personnel, training, terrain, environment, and equipment.

■ Ensure drivers are trained and licensed on the vehicle they are operating (check OF 346).

■ Ensure soldiers drive defensively.

■ Remind drivers to clear all sides before turning.

■ Remind drivers not to allow passengers to ride on the outside of any vehicle unless it is command-directed.

■ Caution drivers to use extra care when operating off improved roads; sand dunes drop off abruptly on the leeward side.

■ Check loads to ensure cargo is correctly secured. Stress even load distribution, especially when traveling over sandy terrain.

■ Train soldiers on rollover procedures in the vehicles in which they operate; practice

rollover drills.

■ Instruct tracked-vehicle commanders to ride no higher than "name-tag defilade."

■ Enforce seatbelt and Kevlar requirements.

■ Establish and enforce safe convoy and catch-up speeds for expected road and environmental conditions. Include in pre-march briefing. Remind drivers that driving too fast for conditions is a primary cause of accidents.

■ Train drivers in the correct use of ground guides and all personnel in how to perform as ground guides. Remind drivers to always use two ground guides while backing.

■ Recon routes for mountain passes or any sharp turn that might require special control measures, as well as bridges or underpasses that may be too low for large vehicles.

■ Train drivers of M915 series vehicles in braking procedures.

■ Train crews on vehicular fire drills; practice drills.

■ Caution drivers that roads, bridges, and overpasses may not be posted with weight or height restrictions.

■ Require safety briefings for senior occupants as well as vehicle drivers.

■ Require the use of 10-foot extension hose for inflating and deflating split-rim tires.

***Situation:* Not enough attention to weapons safety.**

■ Review fratricide-prevention procedures.

■ Remind soldiers to handle all weapons as if loaded.

■ Caution soldiers not to play with knives.

■ Do not allow target practice and blank ammunition to be mixed.

■ Caution soldiers not to burn ammo boxes and to handle them with gloves; some are treated with PCP, which is toxic.

■ Execute drills on rules of engagement.

***Situation:* Unsafe fuel handling and burning.**

■ Use FM 21-10 for guidance on proper fuel mixtures.

■ Ensure that fuel is not used as a substitute for cleaning solvents.

■ Prohibit burning of aerosol cans and unopened MRE packages; they will explode.

■ Train soldiers in the process of burning human waste.

***Situation:* Eye exposure to sunlight degrades night vision.**

■ Enforce the wear of Ballistic Laser Protection System (BLPS). The sunglasses will reduce the adverse effects of sunlight on night vision. The sunglasses and clear lens will also protect against eye injury.

■ If BLPS are not available, allow soldiers to wear sunglasses during the day to protect against night vision degradation. ■

—Paula Allman, Flightfax Managing Editor, DSN 558-9855 (334-255-9855), paula.allman@safetycenter.army.mil

For more information on general deployment safety, check these excellent references:

■ Aviation/Ground Operations. **http://safety.army.mil**; click on the TOOLS tab; scroll down to Leaders' Guides and Handbooks. The Safety Center has many publications developed in support of Operations Desert Shield and Storm: "Desert Shield Leader's Safety Guide," "Southwest Asia Leader's Safety Guide," and "Redeployment and Port Operations Leader's Safety Guide."

■ The Center for Army Lessons Learned (CALL) web site **http://call.army.mil** also has several publications on lessons learned during desert operations. The first is Newsletter No. 90-7, Aug 90, *"Winning in the Desert,"* Newsletter No. 90-8, *"Winning in the Desert II,"* and Newsletter 90-11, Dec 90 *"Getting to the Desert."*

■ Other web sites pertinent to deployments:

http://chppm-www.apgea.army.mil
http://tri.army.mil
http://deploymentlink.osd.mil/
Human factors:
www.hqmc.usmc.mil/safety.nsf/

Who Ya' Gonna Call?

Does your unit need risk management training and information to better prepare your officers and NCOs to do tough missions safely? Current world events have intensified the need to ensure we are tactically and technically proficient in all areas. Don't forget that you have some excellent sources for help. You don't have to go anywhere...the training comes to you. More comprehensive information is available on our website at **http://safety.army.mil**.

NCO Risk Management and Safety Training

The intent of this training is to teach safety to NCOs, not to produce a safety NCO. NCOs are the leaders on the ground "where the rubber meets the road" and are most likely to have a direct impact on accident prevention. Therefore, USASC has designed a 5-day, 45-hour course focused on hazard identification and risk management. The target audience is sergeants and staff sergeants who will be able to integrate risk management into both the planning and execution phases of training and operational missions.

The Junior Officer Professional Development

This course is tailored to the junior officer level of responsibility. The 3-day, 24-hour course is focused on hazards identification, risk management, the Army Safety Program, and leader responsibilities. The target audience is the young company grade officer or warrant officer technician charged to integrate risk management into both the planning and execution phases of training and operational missions.

Assistance Visit Program

The Safety Center offers a 9-event, unit-tailored visit to provide training in risk management and risk management integration, POV toolbox application, ground and aviation systems safety, and driver's training program applications. Units identify their requests and USASC will tailor a team of subject matter experts to address the areas of concern.

Risk Management Information System (RMIS)

From this site, you can get detailed information on the types and kinds of accident hazards, risks, and controls for your area of operations. You can even get accident prevention lessons learned from Desert Storm or major training exercises. You can apply for a password at our web site **http://safety.army.mil** or telephone DSN 558-2920.

If you would like to schedule a visit or if you have questions on course content, contact SFC Pat Stoker, DSN 558-9854/9579 (334-255-9854/9579). ■

Preparing for the NTC

Although this experience had all the trappings of combat and required all the pilot and crew skills we could muster, this was not combat. It was an NTC rotation, the closest we could get to combat conditions in a training environment. This rotation ended in success, thanks to a lot of preparation and training prior to leaving home station.

If you haven't been to the NTC before, you can rest assured that the experience will be demanding and combat realistic. To ensure your NTC rotation is accident-free, focus your training before deployment on the following:

■ **Brownout NVG landings**. You cannot do enough of these.

■ **Rough terrain NVG landings**. Practice landing on rough terrain so pilots and crewmembers can learn to recognize obstacles, such as rocks, under NVGs (and believe me there are *many* of them at the NTC).

■ **Crew coordination**. Crew coordination is essential for every mission, but especially so for missions flown in low illumination. The NTC is a very dark environment. Have crewmembers learn to recognize what various altitudes look like and to advise pilots constantly on any significant deviations.

Identifying hazards is every crewmember's responsibility. Emphasize to soldiers that this includes stepping out of their lane to identify and take action on hazards if necessary. Encourage crewmembers to speak up if they recognize a hazardous situation; lives may depend on what just one crewmember sees.

Other suggestions and lessons learned

■ Develop a sleep-management plan and make it a priority. Segregation of day and night crews is recommended. An aggressive fighter-management program is necessary and should facilitate mission support.

■ Procure and train with a global positioning system (GPS). Using the GPS will reduce the stress level when navigating in low illumination and ensure accuracy.

■ Develop a severe weather plan before deployment. Winds at the NTC often exceed 50 knots; therefore, a plan for protecting personnel and aircraft is required.

■ Ensure aircraft field-mooring kits are available to moor the aircraft in multiple tactical assembly areas. Procuring reinforced bars for tent-staking also will help to ensure security.

■ Allocate planning time for crews to plan the missions thoroughly and to study the map properly. With today's complex missions, time must work for you, not against you.

■ Don't try flying UH-60s in low illumination without the HUD. The less time you spend looking inside the aircraft, the better off you will be.

■ Use the *Risk Assessment and Control Options Program for Army Night Rotary-Wing Missions* software. It works and will provide the commander with another risk management tool.

■ Maintain tactical situational awareness. Getting distracted or focusing on one factor exclusively is easy to do. Know the enemy situation. Don't be predictable. Maintaining tactical situational awareness may keep you from sleeping in your aircraft overnight or running for your life to the nearest downed-pilot pickup point.

Thorough home station training and aggressive risk management can improve your unit's performance during an NTC rotation. Creating an environment where all personnel are empowered to identify unsafe conditions and provide leaders with control options and countermeasures will ensure a realistic measure of success for all personnel and equipment returning home safely. ■

—POC: CW5 Larry Newsom, Aviation Safety Officer, 18th Aviation Brigade, Fort Bragg, DSN 236-7767/8260 (910-396-7767/8260)

Wartime Safety

Safety professionals report that in spite of today's emphasis on safety by the Army's top leadership, there is still a perception among some young Army leaders that safety is something you have to consider in peacetime missions; but in wartime, safety becomes a luxury. If that is true, and if it is also true that when things get tough, the first things to go are the luxuries—then when war comes, we can no longer afford safety. The question really is, "Can we afford not to consider safety during wartime?"

One military officer who recognized the importance of safety in aviation operations was General William H. Tunner. General Tunner was responsible for the India-China airlift in the last year of World War II. Below, General Tunner gives us an excellent example of how a vigorous safety program actually did work in a combat theatre, and how safety made a difference in the success of the mission.

In his lively memoir, "*Over the Hump*," General William H. Tunner recalls his stint as commander of the crucial India-China airlift and tells of his experiences during one of the first attempts to supply an Army by air.

In the 1940s, the very concept of military airlift was in its infancy. In fact, the India-China airlift had only been reluctantly called into existence by a ground-oriented command because a deadly combination of Japanese and geography made the better-known Burma Road somewhat less than efficient.

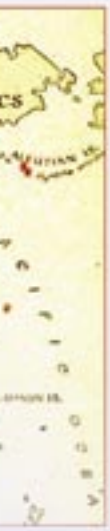
The purpose of the airlift was to carry enough supplies into Western China to keep the Chinese in the war. A Chinese military presence tied down approximately two million Japanese troops—troops that otherwise could be used against U.S. forces in the Pacific.

When General Tunner arrived in India in the summer of 1944, the airlift had been in operation about 2 years. Its performance was barely adequate in terms of tonnage transported, but the major problem was safety. General Tunner described the situation: "*Here, in a strange land far from home, on the fringes of a mysterious backward civilization, were all the conditions that bring hazardous flight: fog, heavy rain, thunderstorms, dust storms, high mountains, a necessity for oxygen, heavy loads, sluggish planes, faulty or no radio aids, hostile natives, jungles, and one-way airfields set in mountainous terrain at high altitude*."

As tonnage had gradually increased during the airlift's operation, so did the mishap rate. In January 1944, the accident rate was 1.97 per 1,000 flying hours! Every 200 trips over the Hump cost one airplane; for every 100 tons flown into China, three Americans died.

As General Tunner put it: "*Not only was the accident rate alarming, but most of the accidents were washouts—total losses with planes either flying into mountain peaks or going down in the jungle. In many of the cases in which there was reason to believe that some or all crew members had been able to parachute from their planes, the men were never seen again. The jungle had simply swallowed them up. The combination of a high accident rate with the hopelessness of bailing out was not conducive to high morale in the flying crews.*" (This was certainly an understatement.)

General Tunner soon identified a major problem: "*All efforts up to that point had concentrated on increasing tonnage, the prime indication of mission success. But all consideration*



for safety had been ignored."

Night flying had been introduced on the Hump, although radio communication and navigational facilities were nonexistent except at the terminals. Weather conditions were virtually ignored; the common saying was, "*There is no weather on the Hump*." Many planes flew in violation of standard Air Corps specifications. As one report indicated: "*If Air Corps technical orders were now in force, I doubt that there would be an airplane in the air.*"

General Tunner's challenge became immediately clear: increase tonnage and lower the accident rate, seemingly contradictory actions in a wartime environment. Yet the record shows the two were not at odds at all. By instituting a safety program that seems obvious to us today, it became possible to change the whole tenor of the airlift.

What was the program?

Nothing more than the basics distilled into four main points:

■ Analysis of existing flight and maintenance procedures and practices.

■ Statistical investigation and analysis of accidents.

■ Recommendations for the correction of faults revealed in the foregoing analysis.

■ Prompt action and follow-up on that action.

In particular, General Tunner and his staff carefully investigated the training of the pilots and made up for any gaps before sending them over the Hump. They began to take weather and communications seriously (there was weather on the Hump), attacking such conditions as icing and turbulence and becoming more familiar with navigational equipment and how best to deal with its absence.

Another major area was one we hear much more about today, particularly in the area of human factors—pilot discipline. General Tunner was very specific about the use and importance of the checklist, an aid which told the pilot "the exact procedure he must follow from the time prior to starting the engine to that following his cutting it off at his destination. We found planes without checklists and pilots who didn't bother." Both situations had to be corrected.

Briefing and debriefing, according to General Tunner, lay at the heart of the program: "*Briefing and debriefing proved to be of the greatest importance. Briefing involved not only a thorough preparation of the pilot for the route he was to take, but a check to make certain that the crew was competent to make the proposed flight safely. Debriefing would show up incompetent flight procedures, indicating the need for corrective action and additional training. Debriefing also provided our best weather reports.*"

Did all of this work?

In August 1944 (just before General Tunner's arrival), they airlifted 23,000 tons over the Hump to China with an accident rate hovering around 2.0 per 1,000 flying hours. In January 1945 with close to 40,000 tons airlifted, the accident rate dropped to 0.301. By July 1945, total tonnage jumped to 71,042 with an accident rate of 0.239. During August, the final big month of the airlift, 20 planes were lost during 136,000 flying hours, bringing the accident rate down to 0.154 per 1,000 flying hours.

Can we afford the luxury of a safety program during wartime? History tells us we can't afford not to have one. We simply can't get the job done without it.

General Tunner makes the statistics come to life by looking at them another way: "*If the high accident rate in 1943 and early 1944 had continued, along with the great increase in tonnage delivered and hours flown, America would have lost not 20 planes that month, but 292, with a loss of life that would have shocked the world.*"

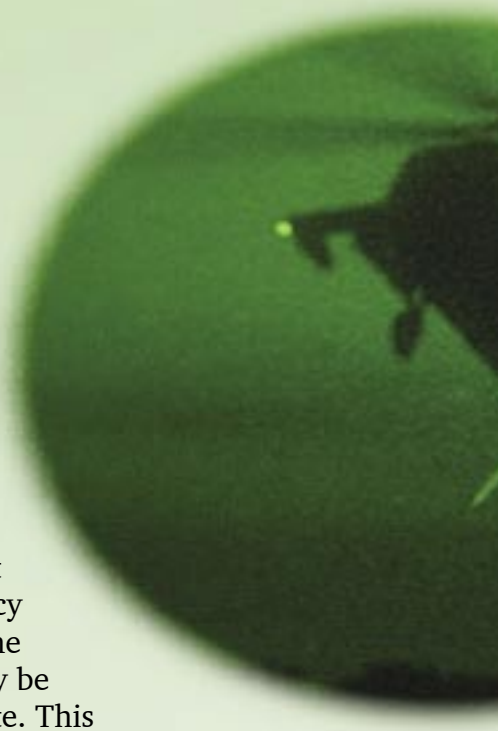
Serious military airlift was born in this distant theater on the almost forgotten edge of the twentieth century's greatest war. Along with it, however, came safety. Can we afford the luxury of a safety program during wartime? History tells us we can't afford not to have one. We simply can't get the job done without it. ■

—Paula Allman, Managing Editor, DSN 558-9855 (334-255-9855), paula.allman@safetycenter.army.mil. Portions of this article on the India-China airlift were taken from General Tunner's lively memoir, "Over the Hump," republished later by Richard W. Huling, Ph.D., AFISC Historian.

Investigators' Forum

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

Perishable Skill—Currency is Not Proficiency



Perishable Skills. We have all heard the phrase, "*That's a perishable skill*," but what does it really mean? I have heard it for almost 20 years and always thought of my golf swing as my most "*perishable skill*." But a recent accident investigated by the Safety Center brought the phrase back to mind in a much more appropriate way.

This UH-60L accident serves as a prime example of how perishable some skills really are. It involved a crew that no one ever expected to have an accident.

The instructor pilot had over 8000 hours of rotary-wing experience; the PI was young but highly thought of; and all the crew members had flown together many times in the past. Both aviators were qualified and current for the night vision goggle environmental training mission.

The problem? Neither crewmember had significant recent experience in NVG flight. The hostile conditions overcame their skills. They became disoriented during a takeoff and crashed, destroying the aircraft. Fortunately, everyone on board will fully recover from their injuries.

We are all aware of "NVG currency" requirements as stated in the Aircrew Training Manual (ATM) for each aircraft. Instructor pilots and unit commanders constantly monitor aviators to ensure that everyone remains current by flying at least one hour every 45 days under goggles. As long as we maintain that standard, we can report combat-ready goggle crews to the chain of command every month.

But, in the back of our minds, we all know that one flight every 45 days does not maintain the proficiency necessary to execute the tough missions we may be called upon to complete. This mission is a perfect example.

The aviators involved in this accident were NVG current. They met the ATM standards required to conduct the mission. However, neither crewmember had flown more than 3 hours of NVG flight in a single month for over 7 months. We have all seen this in our units at one time or another. Other mission requirements, administrative obstacles, or flight time restrictions have put nearly everyone in this position at some time. Most often, we manage to get the mission accomplished when called on. The problems arise when an aviator who is just maintaining currency is placed in conditions with which he is unfamiliar and that requires real proficiency rather than currency.

In this case, we put these aviators in a dusty, windy environment, with low illumination, with little recent experience under NVGs, and all these things added up to a situation primed for an accident. The cumulative effect of the

risks associated with this mission exceeded the capability of the crew, and a major accident was the result.

If any one of the conditions—low recent experience, dust, winds, or low illumination—had not been present, perhaps the accident would not have occurred.

If the aircrew had more recent experience, they would have been better able to deal with the harsh environment. If the illumination had been better, their low recent experience might not have been a factor. If the conditions had not been as dusty, perhaps the crew would not have become disoriented. If, if, if...

The key lesson to be learned is that there are perishable skills. Night vision goggle flight is one of the most perishable skills in our business. When circumstances force us to maintain NVG currency rather than proficiency, we must be aware that those aviators are not ready to proceed directly into harsh environments. Commanders must transition through the crawl, walk, run scenario. NVG currency is the crawl. NVGs in adverse conditions, such as the desert or other severe environments, are Olympic events. We can't expect aircrews to go straight from one to the other. ■

The key lesson to be learned is that there are perishable skills. Night vision goggle flight is one of the most perishable skills in our business. When circumstances force us to maintain NVG currency rather than proficiency, we must be aware that those aviators are not ready to proceed directly into harsh environments.

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NEWS & notes

Infantry Combat Boot Approved for Army Aviation Use

Effective 4 Dec 02, the U.S. Army Aviation Center waives the requirement in AR 95-1, *Flight Regulations*, paragraph 8-9c(1) Leather Boots, requiring the wear of leather boots when performing crew duties. This waiver specifically allows the wear of the U.S. Army designated Infantry Combat Boot, also known as the Belleville 700 series boot. No other non-leather boot is authorized for wear.

The Infantry Combat Boot is black in color but not an all-leather boot. This boot has undergone all required testing and has been type classified for aviation use. Starting in third quarter of FY03, this boot will be issued to all soldiers during basic training and will replace the all-leather boot currently issued. ■

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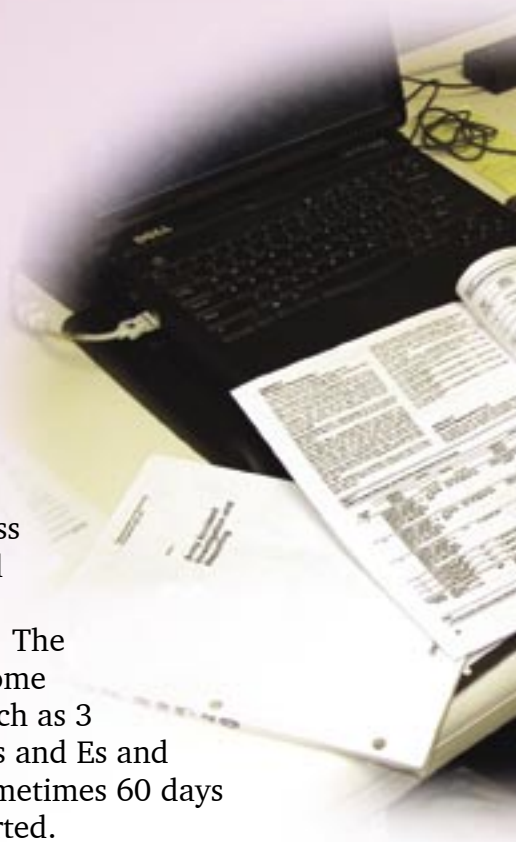
AAAR Problems

When submitting AAARs, remember the term "GIGO."



The Army Safety Management Information System (ASMIS) data base, which contains almost 30 years of Army Aviation accident and incident data, is a valuable safety resource for the aviation community. Among other things, the U.S. Army Safety Center (USASC) uses the ASMIS for hazard identification and trend analysis and provides that information to major commands, as well as installation and unit safety personnel.

One way aviation unit personnel contribute to this data base is by reporting aviation accidents and incidents IAW AR 385-40: *Accident Reporting and Records* and DA Pam 385-40: *Army Accident Investigation and Reporting*.

You've probably heard the term GIGO—garbage in, garbage out. Unless we get complete, clear, and concise data on AAARs, the result will be GIGO.

Problem areas

The following are some frequently encountered problems with AAAR data:

■ **Late or incorrect submissions**. Late or incorrect submission is one of the most frequently occurring problems with AAARs.

AR 385-40, chapter 3, clearly states the reporting criteria. Paragraph 3-2 states that the commander who first becomes aware of any Class A or B Army accident or Class C Army Aviation (flight, flight-related, or aircraft-ground) accident will, through their existing chain-of-command, *immediately notify*—

■ The immediate commander of all personnel involved.

■ The Commander, USASC, by telephone (DSN 558-2660/2539, commercial 334-255-2660/2539). No hard copy notification is required.

Paragraph 3-4b states that an AAAR for all aviation Class D accidents and Class E and FOD incidents will be submitted within 10 calendar days; 30 calendar days for Class C accidents (Changed by message 051236Z MAY 98, to 90 days). The USASC is receiving some Class C AAARs as much as 3 months late. Class Ds and Es and FOD incidents are sometimes 60 days late or not even reported.

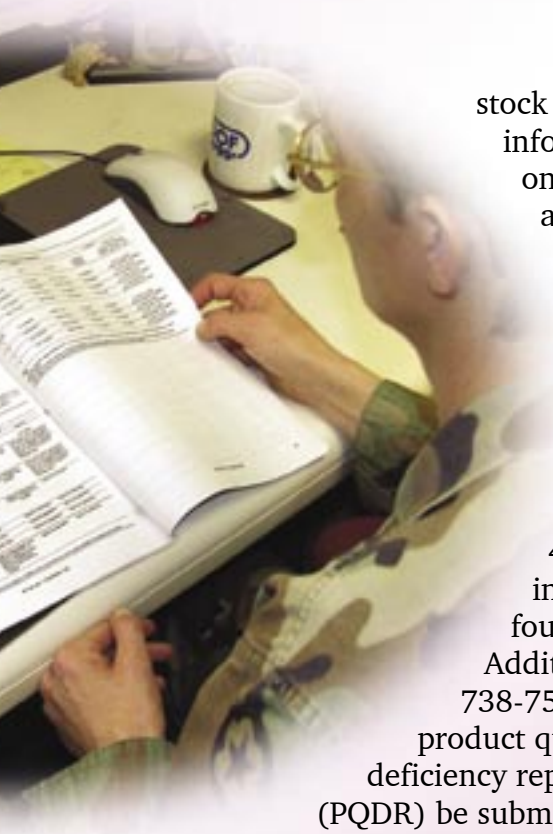
■ Incomplete information. Other frequent problems are insufficient narrative and incomplete or missing component information or part information. (Part information is required for materiel failures, and component information is required for engines, transmissions, and gearboxes.) Remember the narrative should include: what happened, what caused it to happen, and what was done to correct it. Following is an example of a narrative that provides the information needed:

• **What happened?** "While taxiing out for a training mission, the Shaft Driven Compressor (SDC) caution light illuminated and all Pressurized Air System (PAS) air stopped."

• **What caused it to happen?** "Inspection revealed that the PAS air hose was disconnected."

• **What was done to correct it?** "The clamp and hose were replaced. Maintenance operational check (MOC) OK and aircraft returned to service."

When AAAR component or part information is only partially entered or not entered at all, it causes a problem when the data base is queried for materiel trends. When the data base is queried on a specific part number or national



stock number, the information received on component anomalies is inaccurate. This data is needed. If you are uncertain about what to report, check pages 63-66 of DA Pam 385-40. Additional instructions can be found in AR 385-40. Additionally, DA Pam 738-751 requires that a product quality deficiency report (PQDR) be submitted on any incident where material or equipment is confirmed or suspected of contributing to the cause. Identification as an accident exhibit is often neglected. As a result, the Army Material Command, or its delegated sub-command provides inadequate disposition instruction to ensure an analysis is accomplished to identify the cause of the equipment failure. Therefore, Army personnel submitting a PQDR for equipment which contributed or suspected to have contributed to an Army accident should identify all accident exhibits as such in Block 22 of the PQDR (Details).

When AAARs are submitted in a timely manner and the data is complete and correct, the Safety Center can identify potential hazards and trends and take the appropriate action. But when an incomplete AAAR is received, someone has to contact the AAAR POC for the missing information. This adds to the time required to get the data into the ASMIS, which means it takes longer to identify potential hazards and trends and take action to fix the problem.

■ Illegible AAARs. Faxing a hard copy of AAARs to the Safety Center saves time for the sender and gets the information to us faster. But if the information on the AAAR is illegible, not clear, or is missing, the whole purpose is defeated. Not only does it take more time for someone at the Safety Center to contact the AAAR POC, that person has to take time to run down the information that is needed. Remember, you can also send the AAAR by e-mail to accidentinformation@safetycenter.army.mil.

AAARs are reviewed daily by aviation systems managers at the Safety Center to identify trends and potential hazards that might affect fleet aircraft or operations throughout the Army. Once hazards are identified and assessed, the information is used to modify or change doctrine, operating procedures, or equipment to control risks and reduce accidental losses.

Although the benefits of submitting AAARs are often not immediately seen at the unit level, AAARs provide an invaluable service to all of Army Aviation. The more complete information you can give us, the quicker we will be able to identify a potential hazard or trend and take action to correct it.

Although the benefits of submitting AAARs are often not immediately seen at the unit level, AAARs provide an invaluable service to all of Army Aviation. The purpose of this article is certainly not to cause units to submit fewer AAARs. Even an incomplete AAAR is better than not reporting an accident or incident at all. Such an AAAR will at least let us know that a problem exists; for example, a parts failure that may be fleet wide. But the more complete information you can give us, the quicker we will be able to identify a potential hazard or trend and take action to correct it. And we all have a responsibility to our fellow soldiers to make Army Aviation as safe as we possibly can.

Remember GIGO. Take the time to make that AAAR data legible, concise, and as complete and accurate as you possibly can. ■

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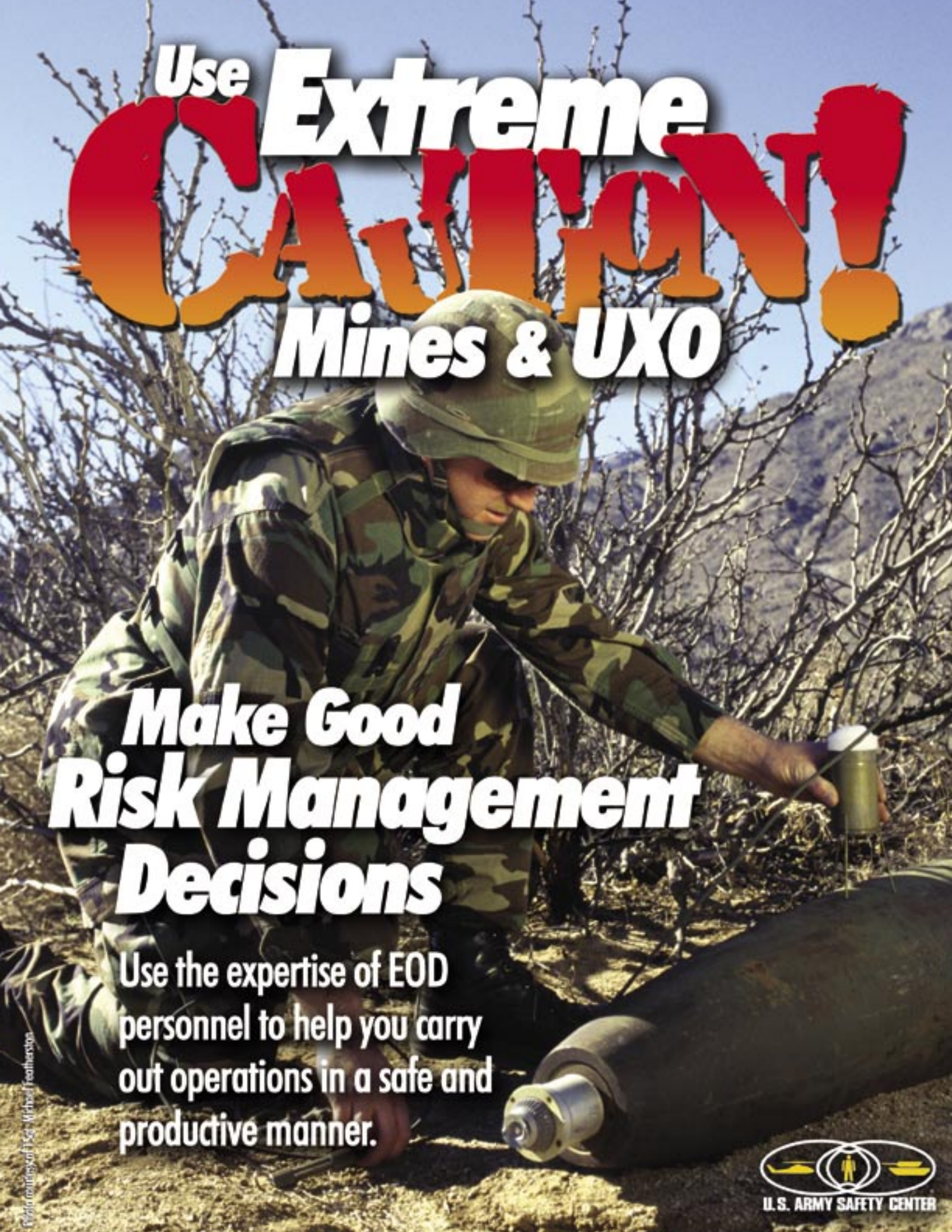
Use Extreme
CAUTION!
Mines & UXO
Make Good
Risk Management
Decisions
Use the expertise of EOD personnel to help you carry out operations in a safe and productive manner.
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