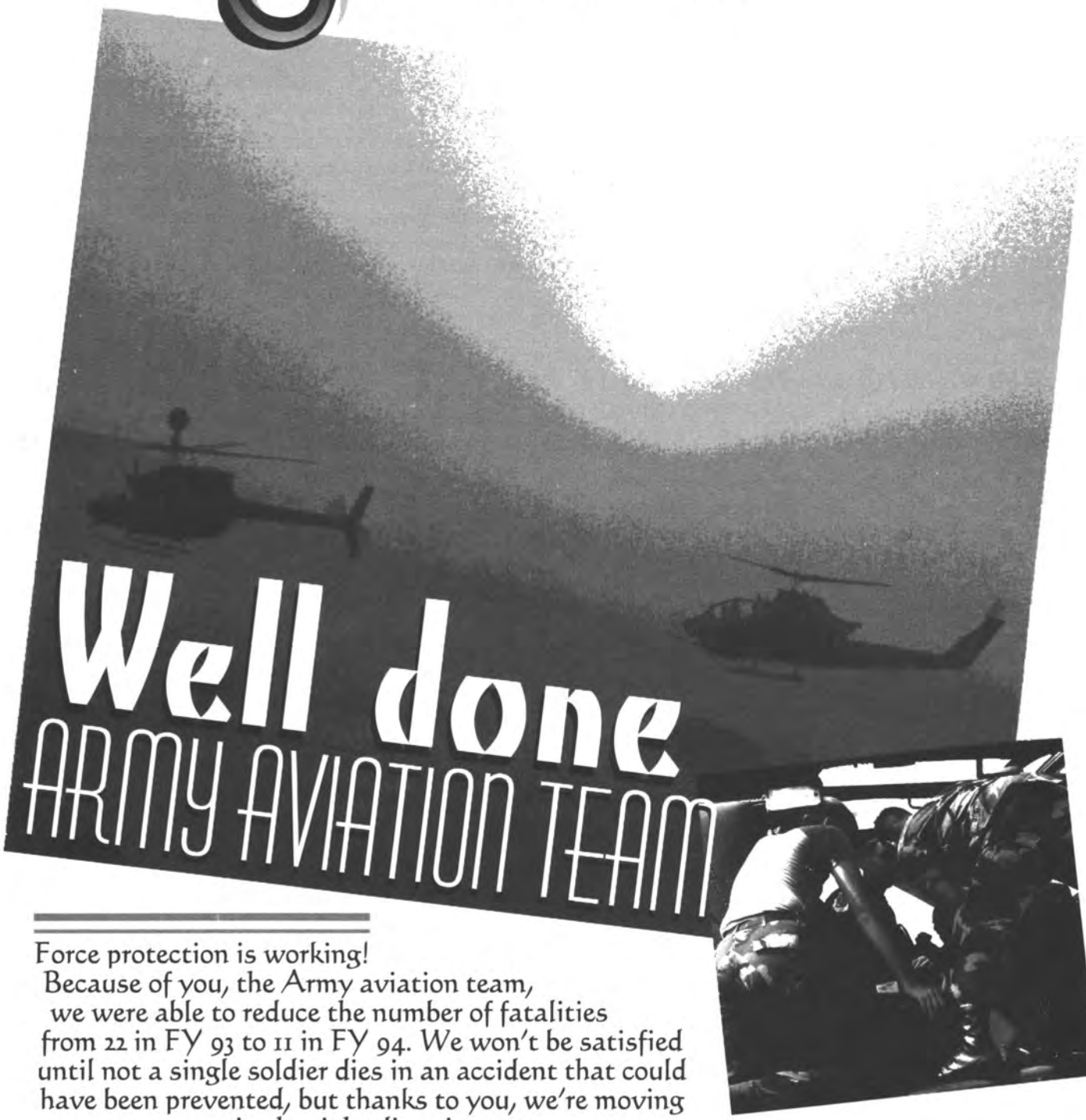
FlightFax

REPORT of ARMY AIRCRAFT ACCIDENTS
October 1994 ♦ Vol 23 ♦ No 1



Force protection is working!
Because of you, the Army aviation team,
we were able to reduce the number of fatalities
from 22 in FY 93 to 11 in FY 94. We won't be satisfied
until not a single soldier dies in an accident that could
have been prevented, but thanks to you, we're moving
in the right direction.

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FY 94 in review

As a result of their risk-management skills, self-discipline, leadership, professionalism, focus, and dedication to force-protection initiatives, aviation units were able to capitalize on the safety momentum that was regained during the last half of FY 93 and reduce accidental losses even further during FY 94.

We were 77 days into the first quarter of FY 94 before we lost a crewmember in an aviation flight accident. While the FY 94 Class A accident rate of 1.72 is an accomplishment that every member of the team can rightly be proud of, the truly remarkable achievement is that during FY 94 we were able to reduce the number of aviation fatalities to 11.

Recap of FY 94 Class As

Although the safety accomplishments of FY 94 are praiseworthy, accidents that should have been prevented still claimed the lives of our crewmembers and destroyed our equipment. The following is a recap of the 22 FY 94 Class A accidents:

■ ***UH-60L***. The aircraft was Chalk 4 in a flight of six during an NVG air assault training mission. During the multiaircraft approach to a field site with trees on each side, rotorwash began blowing dust from the freshly graded dirt strip. The pilot of Chalk 4 selected a slower, steeper approach than the first three aircraft had used during their landing. The crew chief of Chalk 4 notified the pilots that a dust cloud was forming and moving forward from the rear of the aircraft as Chalk 4 descended to about 15 feet AGL, short of the intended landing point. The pilot on the controls continued the approach. Prior to reaching the intended landing point and prior to the main landing gear touching the ground, Chalk 4 became engulfed in blowing dust and the pilot elected to initiate a go-around. The aircraft was observed moving to the right until the main rotor blades contacted trees on the right side of the landing strip. The main rotor blades severed the tops of several trees at about 20 feet AGL. The aircraft descended vertically onto a 3-foot-high bank that paralleled the right side of the landing strip, rolled left off the bank, and came to rest on its left side. The pilot received minor injuries.

■ ***OH-58C***. After refueling, the crew flew back to the mission area and continued their screening mission. Shortly after arriving on station, the crew began to experience geographic orientation problems. The PC elected to land the aircraft so he could assist the pilot in determining their exact location on the map. The PC selected a touchdown point and initiated an approach. The approach was from about 35 feet AGL and continued until the aircraft touched down in a right drift. The right skid contacted the ground first, and the aircraft encountered dynamic rollover and rolled onto its right side. The aircraft was destroyed and the pilot received minor injuries.

■ ***AH-64A***. At about 150 feet AGL and 35 to 40 knots after a night formation departure in marginal VFR weather, the PC on the controls of Chalk 2, the trail aircraft, lost sight of the lead aircraft. The Chalk 2 PC initiated a deceleration, placed the aircraft in a decelerative attitude, reduced some collective, and directed the pilot to ensure the landing light was off. When the pilot looked back out, he perceived trees moving forward on the left side of the aircraft and the aircraft descending rearward. He immediately informed the PC and then noticed a rearward vector of one-half to two-thirds saturation and a radar altimeter altitude of 23 feet in his helmet-mounted display. The pilot reached for the flight controls, but the aircraft struck the ground while moving rearward. The aircraft continued to the rear for about 90 feet during which time the tail pylon separated. The fuselage became airborne, spun right about 4 turns, and impacted a large oak tree. The aircraft came to rest in a nose-low, left- roll, left-yaw attitude. Both pilots sustained injuries.

■ ***OH-58C***. While in cruise flight at approximately 50 feet above a forested area, the aircraft experienced an

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engine failure/malfunction. The low-rotor RPM light illuminated, followed by an abrupt left yaw and activation of the low-RPM audio. Due to the lack of a suitable landing area, the pilot initiated an autorotation to the tops of the trees as the IP took the controls. The IP zeroed airspeed prior to the aircraft entering the trees. The aircraft descended through 50- to 60-foot-tall trees, impacting upright and sustaining major damage. Both pilots received major injuries.

■ *UH-1H.* During a night VFR approach to a known severely dusty area, the crew encountered brownout prior to touchdown. At below 10 feet AGL, the crew lost visual ground reference but elected to continue the approach. The aircraft made ground contact with the aft portion of the skids, impacting initially upright, bounding, and impacting a second time. The aircraft rolled right, coming to rest almost inverted with major aircraft damage and minor injuries to the three occupants.

■ *OH-58C.* During an NVG training mission involving formation flight at an altitude of 500 feet AGL and 90 knots, the crews encountered deteriorating weather conditions. Chalk 2 lost sight of the lead aircraft, executed a rapid deceleration, and ascended in altitude. The PC made an immediate right turn, then entered a left turn, which resulted in a near collision with Chalk 3 as a result of Chalk 2's initial deceleration. The Chalk 3 PC warned Chalk 2 by radio not to descend on them. Chalk 2 was observed to continue the left turn, and no radio response was received by the other flight crews. Chalk 2 subsequently crashed when it encountered IMC and the PC lost aircraft control. Both the PC and left-seat aerial observer were fatally injured.

■ *OH-58A.* While hovering in a tactical training area during an NVG training flight, the unit trainer was discussing with the pilot how to make pinnacle and ridgeline approaches and the different scanning techniques that could be used. The aircraft drifted forward into the wreckage of an abandoned vehicle. The toe of the aircraft's left landing gear caught on the wreckage. The aircraft began to yaw and roll left, and the low-rotor RPM light came on. The aircraft continued left about 100 feet before coming to rest on its side. One crewmember received major injuries.

■ *OH-58A.* During a night tactical terrain flight with NVGs (AN/AVS-6), the lead OH-58 in a flight of three entered IMC as they crossed over a ridgeline. The crew initiated inadvertent IMC recovery procedures with a climbing left turn to 4,000 feet. During the climb, the crew squawked emergency on the transponder and were monitored by radar. At 4,000 feet, the pilot allowed the airspeed to drop to near zero and allowed the aircraft to enter into an uncontrolled rate of descent. The aircraft impacted in a 20- to 30-degree nose-low, 30-degree roll and 15-degree yaw attitude with a forward airspeed exceeding 60 knots. The aircraft was destroyed, and both pilots received fatal injuries.

■ *UH-1H.* While at a stable 8-foot hover in preparation for an external load operation, the IP instructed the student pilot in the right seat to arm the cargo hook. The student moved his legs away from the controls, set his intercom switch, and reached for the overhead cargo hook arm switch. The student pilot in the jump seat was pointing at the switch to assist in identifying the proper switch. As the right seat student

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was reaching for the switch, the aircraft rolled left with some pitchup of the nose. Within 3 to 5 seconds, the aircraft made contact with the ground. During the roll sequence, the cyclic moved rapidly to the left rear quadrant. The IP was not able to correct the left roll and had insufficient time to take emergency action. The aircraft came to rest on its left side with extensive damage. Two occupants received minor injuries.

■ ***AH-64A.*** During cruise flight at 1,400 feet AGL, the No. 1 main rotor blade separated from the hub assembly. The aircraft crashed inverted in a nose-low attitude. Both contractor pilots were fatally injured, and the aircraft was destroyed.

■ ***UH-60A.*** While making a day VFR pinnacle departure at a low altitude over the ground and at an airspeed below single-engine capability, the aircraft experienced a dual-engine loss of power, making continued flight impossible. The crew leveled the aircraft as it impacted some large rocks and the ground before coming to rest on its right side on the downslope of the ridgeline. The crew of four experienced only two minor injuries, but the aircraft received major damage. The specific cause of the engine power loss could not be determined. However, elimination of other conceivable variables indicates a fuel flow interruption probably occurred, which resulted in an in-flight dual-engine flameout.

■ ***AH-64A.*** During a night VFR formation flight using FLIR, the crews realized the poor TADS/FLIR picture was resulting from freezing rain and snow. The air mission commander in Chalk 1 instructed the flight to follow him in a left 180-degree turn for return to base. While in the left turn, Chalk 3 descended and crashed into rising terrain at an airspeed of 20 to 30 knots. The aircraft came to rest among trees at an elevation of 6,650 feet MSL. The crew received only minor injuries.

■ ***AH-64A.*** During hot refueling, the fuel handler had some minor difficulty in the hookup and had to shift and reposition the fuel hose on his shoulder to properly connect the nozzle to the aircraft refuel port. As he turned to activate the aircraft refuel switches located in the aircraft refuel panel, pressurized JP-8 fuel started to spew from between the emergency breakaway connector and the D-1 nozzle. Initially, a stream of fuel—roughly the diameter of a garden hose—shot from the assembly into the rotor system, vaporizing the fuel. The fuel handler, now soaked by the spraying fuel, knocked the hose loose from the aircraft, threw it to the ground, and exited the area. The vaporized and liquified fuel was ingested into and ignited by the engines. As the fuel handler exited the area, he and the fire guard attempted to alert the crewmembers of the fire. The fire guard attempted to control the fire with the available fire extinguisher to assist the crew in egressing. Fed by the flood of fuel from the refuel hose and the vaporized fuel, the fire rapidly spread to the fuel-soaked areas, creating a fireball that engulfed the aircraft and the immediate area. The IP executed an emergency shutdown of the aircraft engines. Initial attempts by the crew to egress were unsuccessful due to the extreme heat. As the aircraft became further engulfed in flame, they exited the aircraft through the crew door and moved clear of the burning aircraft. The soldier operating the refueling pump at the tanker released the "dead stick" and shut off the fuel supply to the hoses. Both crewmembers sustained major burn injuries.

■ ***OH-58C.*** At 80 knots and 50 feet AGL during a day VFR two-aircraft mission in mountainous terrain, the Chalk 2 PC was heard to declare a mayday. The Chalk 1 aircraft reversed course and found Chalk 2 crashed on the side of a ridge. Both crewmembers sustained fatal injuries. The cause of the loss of engine power could not be determined. However, the loss of power is suspected to have been the result of air in the fuel system.

■ ***OH-58C.*** The aircraft was flying at 200 feet AGL and 90 to 95 knots during a day VMC cross-country training flight. The pilot, who was using the PC's map, was experiencing some problems with navigation and at least once required assistance from the PC in pinpointing their location. As the aircraft entered a valley, the crew noted a set of wires which were marked with orange balls across their route of flight. As they progressed along the valley at an altitude below the trees on the adjacent high ground, the pilot told the PC to turn left as they approached up the stem of a "Y" in the valley. The pilot also alerted the PC to some power lines that were located beyond the "Y." As the PC was acknowledging the wires, the pilot discovered a smaller set of lines much closer to the aircraft and was unsure which wires the PC was acknowledging. Almost simultaneously, the PC applied aft cyclic and increased collective pitch to avoid the wires.

The aircraft struck the wires while in a nose-high attitude. The wires made contact with the tail boom, left horizontal stabilator, and tail rotor. The left horizontal stabilizer and the tail rotor gearbox separated from the aircraft. As the PC attempted to regain airspeed and maneuver the aircraft toward an open field to their right, the aircraft entered a nose-low attitude and started an accelerated right spin. Realizing he could not control the spin, the PC attempted to zero out the forward airspeed and vertical rate of descent as the aircraft settled into the trees. One of the pilots received minor injuries, and the aircraft was destroyed.

■ *OH-58C*. The aircraft was lead in a multiaircraft formation flight, and the crew was conducting RL 1 NVG progression training. While in a turn to the downwind leg from 200 feet AGL and 30 knots, the pilot of the lead aircraft lost visual reference due to visible moisture accumulation on the windscreen and low illumination without the aid of his infrared light. The pilot allowed the aircraft to enter an unusual attitude from which recovery was unsuccessful. The aircraft lost airspeed, began drifting to the left rear, and impacted the ground on the left rear side and rolled over. Neither pilot was injured.

■ *UH-60*. At 200 feet or below during an NVG gunnery training mission, the crew heard a loud whining sound, followed by a loud pop. The crew assessed the sounds to be a malfunction of the No. 2 engine and pulled the No. 2 power control lever to idle. The aircraft impacted the ground hard with low rotor RPM and was destroyed. Both front-seat crewmembers sustained injuries.

■ *AH-1*. While conducting aerial gunnery training using NVGs, the aircraft was hovering in battle position during a target engagement when it descended and drifted rearward. The aircraft tail rotor and tail skid contacted rising terrain, resulting in a loss of tail rotor control. The aircraft spun right, coming to rest almost inverted. The aircraft was extensively damaged, and both pilots received minor injuries.

■ *OH-6J*. After completion of firing during aerial gunnery, the pilot initiated a right turn away from the target. The aircraft continued in a right descending turn and impacted the ground, followed by an immediate explosion/fire. The PC was fatally injured.

■ *CH-47D*. Shortly after departure, the crew deviated from their planned flight route and entered low-level flight over a river. While flying upstream below treetop level at about 60 to 80 knots, the aircraft struck a series of four high-tension wires. The aircraft crashed into the river, and all four crewmembers sustained fatal injuries.

■ *OH-58A*. At 15 feet AGL while proceeding into the wind, the pilot declared a precautionary landing. The aircraft was observed to make a 180-degree right turn and strike the ground nose first. The aircraft lost its landing gear, rebounded, and struck the ground a second time before coming to rest on its right side. Both crewmembers received minor injuries

■ *CH-47D*. During a day VFR mission, aircraft landed at a field site for passenger pickup. While on the ground, rear of aircraft ascended and it rolled onto its right side. One crewmember (ARNG technician) was killed, and the pilots sustained minor injuries.

A word of caution

In 43 B.C., Publilius Syrus, a Latin epigrammatist, said "He is safe from danger who is on guard even when safe." It is possible to squander investments in safety. A moment's disregard for by-the-book operations is all it takes to wipe out a safety record that has taken years to build.

As we begin FY 95, the potential to focus our attention away from our day-to-day operational business remains high. People are on the move, working new assignments, or trying to do the same good job with fewer resources. We must keep the emphasis on safety. There is no time to rest on the accomplishments of FY 94. If we do, the elation over the successes of FY 94 will soon turn to despair over the losses we will suffer in FY 95.

Without constant focus, the safety momentum will fade quickly and lives will be lost in accidents that should not have happened. The heart of the Army is its people, and we cannot afford the tragic loss of even one soldier. Maintaining a high level of self-discipline and professionalism and making an even greater commitment to integrating risk management and force protection initiatives into every task are key to reducing accidental losses even further in FY 95. □

The safety successes achieved in FY 94 were the direct result of soldiers who had the self-discipline, dedication, and courage to make safety their first priority.

While all the members of the aviation team deserve a "Well done" pat on the back, no one will be satisfied until we stop losing people in accidents that should have been prevented.

ASOL CORNER

SOPs and things

The Aviation Branch Safety Office (ABSO) receives many requests for copies of "the best SOP" seen during assistance visits. In the past, ABSO has provided several examples from units that have put a tremendous amount of effort into developing excellent SOPs and Commanders' Accident Prevention Plans (CAPPs). Theoretically, this is a good policy. After all, if someone has found a good idea, then it should be shared with others. Well, maybe.

A good idea at one unit or installation may not be appropriate at another. Copying an SOP from another unit does not really do the job of stating how you do business in your unit. The moral is to look at other SOPs for ideas and concepts that may assist your unit in doing its mission but don't plagiarize another unit's SOP just to save time and effort.

Basic concepts

When developing the written safety program in your unit, there are two concepts to keep in mind. First, safety should be integrated throughout the entire SOP. Sure, that's what AR 385-95: Army Aviation Accident Prevention says, but what does that really mean?

The intent is to have risk countermeasures in place where the person doing the task will be readily aware of them. For example, it is not very productive to write into the safety annex of the SOP that all personnel doing preventive maintenance inspections will use a checklist. It is unlikely that the person doing the task even knows the safety annex exists. The requirement should be written into the task description of the appropriate functional area. In this case, the countermeasure should be written in the maintenance SOP that is used by the person performing the task.

This concept should make it obvious that the safety officer is responsible for reviewing *all* of the unit SOP to ensure that risk countermeasures are included where they will be seen by the right person and followed.

The second concept is a natural product of the first. If all risk countermeasures are integrated throughout the unit SOP, do you still need a "safety" SOP? Yes, you need a safety SOP.

The safety SOP should concentrate on how the safety program is managed in the unit. For example:

- How do you conduct your accident prevention surveys, safety council meetings, and safety awareness meetings?
- How does a soldier earn a safety award?
- What is an OHR (operational hazard report) and how can one be submitted?
- How are accidents reported to higher headquarters?
- What are the duties of the safety NCO?

Obviously, the list goes on to include everything that the safety staff does. In other words, if the safety officer leaves today, the SOP should tell the replacement exactly how all parts of the program work.

Your goal in developing the written safety program should be to get the right information to the right person in the unit. If you are primarily concerned about what the next inspector wants to see, you need to readjust your focus.

Integrating safety into operations plans and orders

You should apply this same concept to written operations plans and orders. For years now, we have been trying to exterminate the idea of a safety annex or a paragraph 6, but it still persists in some units. The only way to kill this dinosaur is for you, the safety officer, to make your commander understand that you should be involved in the total planning process of every operation. Safety in the form of risk management needs to be involved in every step of the operational planning process and should therefore be incorporated in every section or paragraph of the written plan.

This is not as easy to accomplish as it is to tell you to do it. You, as the safety officer, must develop and nurture a relationship with the commander and the entire staff to the point that they *expect* you to assist them in identifying hazards, assessing risks, and developing countermeasures during the planning process. If you are currently in the habit of reviewing the operation order *after* it is published, then you are attempting to close the proverbial barn door after the cows are long gone.

If you are successful in developing and nurturing a relationship with your commander and fellow staffers, you will find the rewards tremendous. No soldier wants to be involved in an accident or to be unsafe, especially aviators. Therefore, eventually you will get past the "Oh no, here comes the safety geek!" syndrome and get to the point where the staff thinks, talks, and does risk management even without your prodding. This will give you the satisfaction of knowing that you're working as a team and preventing accidents.

Aviation force protection! □

Commander's Accident Prevention Plan

As an ASO, you are probably acutely aware of the confusion and controversy over the Commander's Accident Prevention Plan (CAPP). At the risk of adding to the confusion, I believe some explanation of where we are going with the CAPP is needed.

(NOTE: CURRENT REGULATORY GUIDANCE HAS NOT CHANGED. COMPLIANCE WITH AR 385-95: ARMY AVIATION ACCIDENT PREVENTION IS STILL REQUIRED. AND THE FOLLOWING PROPOSAL MUST STILL BE APPROVED THROUGH CHANNELS.)

Original CAPP concept

The original concept of the CAPP was to create a stand-alone document that emphasized the commander's dedication to safety. This was a laudable objective and, in its time, had some validity. In spite of a certain amount of conflicting guidance, many commanders and safety officers understood the intent and created some excellent plans. Unfortunately, many did not.

In an attempt to comply with AR 385-95, some units made the CAPP little more than an index of where to find things in the SOP. Some made the CAPP a description of safety responsibilities for the staff.

Attempting to standardize the CAPP during Aviation Resource Management Surveys (ARMS) did little more than increase the frustration level of the field ASO. We ended up concentrating on what the CAPP should look like. How thick should it be? What color? What format? Is it an SOP? What part of my program is in the CAPP? What part is in the SOP? What goes in both?

Obviously, none of this is the least bit productive in the prevention of accidents. So why not just do away with the CAPP? After all, we integrate safety into all areas of the SOP. So why have a separate document just for safety? Good question.

If we indeed integrate safety into all functional areas of the SOP and the SOP is reviewed and updated regularly, we don't need to duplicate it in another document. But there are some good reasons to hold on to the concept of a "commander's plan."

New CAPP concept

Every unit faces a changing future. Missions change, personnel change, equipment changes, budgets change, and so forth. Each of these changes brings new hazards that the commander should anticipate and counter with accident-prevention plans. The CAPP should be exactly what the title says, a *plan* developed by the commander that gives the commander's perception of where the unit has probability of mission failure, equipment loss, or personnel injury (the risk) and what he or she intends to do about it (the countermeasure).

Used in this manner, the CAPP becomes the commander's written guidance to staff and subordinate leaders on where risk countermeasures should be focused. The staff uses this guidance in mission planning and the development of policy. When countermeasures are proven effective for long-term application, they are integrated into the SOP. Subordinate commanders use the guidance in the development of their own CAPP.

The advantage of this concept of the CAPP is in its short-term focus and true reflection of the commander's intent. The CAPP should be reviewed during every meeting of the unit safety council, updated *at least* annually, dated, signed by the commander, and widely disseminated throughout the unit. Obviously, the safety officer and other staff should assist the commander in developing the CAPP. But its value comes from the commander.

The CAPP must be the commander's plan. The content and appearance of the CAPP is up to the commander. Format, size, shape, or color does not matter. What matters is that the CAPP functions as a valuable part of the risk-management process.

Expect to see this change in the concept of the CAPP in the next revision to AR 385-95. □

Editor's note

Articles for this "ASO corner" were written by CW5 Bob Williams, ABSO, Fort Rucker, DSN 558-3000/3210. These articles are in agreement with Army Safety Center philosophy.

Among his duties at the ABSO, CW5 Williams is responsible for conducting evaluations of unit safety programs during ARMS inspections. He is the primary point of contact for Aviation Branch safety issues and is currently the primary agent for rewriting AR 385-95.

Summary of ALSE messages

The Aviation and Troop Command issued an aviation life support equipment (ALSE) advisory message (ALSE-94-01, 142357Z Jul 94) listing all messages transmitted by PM ALSE from 1 January 1988 through 31 December 1993. To assist units in checking to see if they have received all applicable messages, PM ALSE plans to publish an annual update of messages. Contact your next higher headquarters to obtain a copy of any message you have not received.

Msg No.	Date/Time Group	Status	Subject
88-1	081630Z Jan 88	Current	Relocation of components for the SRU-21/P survival vest and standard individual kits
88-2	251330Z Feb 88	Expired	Cartridge, carbon dioxide, NSN 4220-00-543-6693 for LPU-2/P,-3/P, and -10/P
88-3	011030Z Apr 88	Expired	Extension of potency expiration date
88-4	131500Z Jul 88	Expired	Signal kit distress, foliage penetrate, SRU-21/P survival vest
88-5	261130Z Jul 88	Current	Thermoplastic liner (TPL) conversion kit for SPH-4 flyer's helmet
88-6	271230Z Oct 88	Superseded 021638Z Jan 89	Delayed implementation of para 7-6b, AR 95-3: General Provisions, Training, Standardization, and Resource Management
89-1	021638Z Jan 89	Superseded 141100Z Nov 89	Delayed implementation of para 7-68, AR 95-3: General Provisions, Training, Standardization, and Training Resource Management
89-2	121030Z Jun 89	Expired	Signal kit, foliage penetrate, (L-119), NSN 1370-00-490-7362 used in SRU-21/P survival vest and Mohawk survival vest
89-3	301330Z Jun 89	Current	AN/PRC-90-2 preventive maintenance check and services
89-4	1330Z Aug 89	Expired	Water purification tablets NSN 6850-00-985-16615 extension of potency expiration date/suspension: 19 Sep 89
89-5	141100Z Nov 89	Superseded 021130Z Jan 90	Delayed implementation of para 7-6b, AR 95-3: General Provisions, Training, Standardization, and Resource Management
90-1	231300Z Jan 90	Expired	Signal kit, foliage penetrator,(L-119), NSN 1370-00-490-7362 used in SRU-21/P survival vest and Mohawk survival vest
90-2	021130Z Feb 90	Superseded 171630Z Oct 90	Delayed implementation of para 7-68, AR 95-3: General Provisions, Training, Standardization, and Resource Management
90-3	071530Z Feb 90	Current	Used flight helmet visors
90-4	141430Z Feb 90	Current	Problem fit program for Army flight helmets
90-5	28110Z Mar 90	Current	Authorized substitution for Lomotil NSN 6505-00-118-1914
90-6	051800Z Apr 90	Current	Thermoplastic liner (TPL) conversion
90-7	071345Z May 90	Expired	Critical shortage of 20-man life raft cylinder NSN 4220-00-595-3698
90-8	071330Z May 90	Current	Water purification tablet, iodine, 8 mg, NSN 6850-00-985-7166
90-9	171630Z May 90	Current	Hydrostatic testing for high pressure CO^2 cylinder for 20-man life raft
90-10	041700Z Jun 90	Current	SPH-4 flyer's protective helmet retention assembly NSN 8415-01-056-0700
90-11	061330Z Jun 90	Current	AH-1 helmet sight subsystem (HSS)
90-12	281230Z Jun 90	Expired	Signal kit, flare foliage penetrator with launcher and 7 flares NSN 1370-00-490-7362

Msg No.	Date/Time Group	Status	Subject
90-13	031100Z Oct 90	Expired	New retest date for water purification tablets, Iodine NSN 6850-00-985-7166
90-14	161430Z Oct 90	Current	Salvaging parts and turn-in of SPH-4 helmet shells
90-15	171630Z Oct 90	Expired	Delayed implementation of para 7-6b, AR 95-3: General Provisions, Training, Standardization, and Resource Management
90-16	311530Z Oct 90	Expired	"Desert Shield" fitting Army aircrews with contact lenses for use with M-43 mask and M-24 mask
91-1	131400Z Jun 91	Current	Incompatibility of FV2 type laser eye protection (LEP) spectacles/clip-ons with the OH-58D aircraft cockpit displays
91-2	081530Z Aug 91	Current	Survival kit, individual, tropical, tactical aircrewmember NSN 6545-01-120-2638
91-3	071530Z Aug 91	Current	Care, use, and inspection of flight helmet SPH-4 and SPH-4B
91-4	301030Z Sep 91	Current	Substitution of Imodium for Lomotil
92-1	11530Z Jun 92	Expired	Water purification tablets NSN 6850-00-985-7166 extension
92-2	101100Z Jul 92	Expired	Signal kit distress, foliage penetrate, (L-119) NSN 1370-00-490-3762 used in the SRU-21/P survival vest and Mohawk survival vest
92-3	311130Z Jul 92	Current	Vest, survival small NSN 8415-01-173-8098 and vest, survival large NSN 8415-00-177-4188 components of SRU-21/P vest, survival

To receive a computer disk containing these messages (Windows Notepad format), send one formatted (3.5 or 5.25) high-density disk to Department of the Army, Project Manager, Aviation Life Support Equipment, ATTN: SFAE-AV-LSE (SSG Marmuziewicz), 4300 Goodfellow Blvd, St. Louis, MO 63120-1798.

POC: SSG STAN MARMUZIEWICZ, OFFICE OF THE PM ALSE, DSN 693-3573 (314-263-3573), FAX DSN 693-9078 OR E-MAIL MARMUZIE@ST-LOUIS-PEO3.ARMY.MIL.

More ALSE information

Since the release of ALSE-94-01, which provided a list and the status of all PM ALSE messages from 1988 through 1993, one additional PM ALSE message (ALSE-94-02) has been issued:

Msg No.	Date/Time Group	Status	Subject
94-02	142357Z Jul 94	Current	Availability of PRC-90 series survival radios

In addition to the PM ALSE messages, the following are ALSE-related messages:

Originator	Date/Time Group	Status	Subject
CDR USAAVNC	201103Z Mar 94	Current	Information on ALSE being developed
CDR USAMMA	082101Z Apr 92	Current	Extends povodine iodine solution, NSN 6505-00-914-3593, Sherwood Medical, lot No. 84820 to 31 Jan 95
CDR CECOM	201405Z Apr 94	Current	Ground precautionary message (CECOM GPM-93-004) AN/PRC-112 radio, NSN 5820-01-279-5450, LIN: R82903
CDR USAMMA	222105Z Apr 94	Current	Povodine iodine solution, NSN 6505-00-914-3593, Sherwood Medical, Lot No. 9P81, not extended; destroy upon expiration
CDR USAMMA	172102Z May 94	Current	Disposition of medical material/dressing first aid field camouflaged

POC: CW5 DANIEL W. MEDINA, OPERATIONS AND INVESTIGATIONS DIVISION, DSN 558-9857 (205-255-9857)

Map datums: a note of caution

In a recent briefing by the Defense Mapping Agency (DMA) for the Chief of Staff, Army, the importance of map datums was a major item of concern and discussion. Datums are mathematical models of the Earth used to calculate the coordinates on maps, charts, or systems.

Currently, many different datums are used throughout the world to produce maps. The standard datum for U.S. forces is World Geodetic System 1984 (WGS 84). It is also the standard that has been adopted by the International Civil Aviation Organization and the International Hydrographic Organization. The default output coordinates from the Navstar Global Positioning System (GPS) are on WGS 84. However, many U.S. and foreign maps based on other datums are still in use.

The use of different datums creates a problem. The coordinates for a point on the Earth's surface in one datum will not match the coordinates from another datum for that same point. For example, on the Korean Peninsula, current maps used by U.S. and Republic of Korea forces were developed using the Tokyo Datum. Converting these maps to WGS 84 causes an average horizontal displacement of 755 meters. Not all disparities resulting from using two different datums are as large as this one. Disparities were also discovered for the Desert Shield/Desert Storm area of operation. This problem could exist within our own forces but occurs more frequently when U.S. forces are conducting combined operations.

In the past, we didn't worry too much about datums because our weapon systems usually didn't require highly accurate point positioning. Because of the inherent high accuracy of WGS 84 and the fact that it is the standard, many current and developing weapon and navigation systems have been "hardwired" to use only WGS 84 coordinates. With today's technology, precise coordinates are vital for mission success and WGS 84 provides the precision necessary to meet our most stringent requirements.

The bottom line is don't ignore the fine print at the bottom of maps. Be certain the maps being used in a given operation were produced using the same datum. If this is not possible, make sure the datum information is passed along with coordinates. Also be sure the datum is addressed in the operations order.

For additional information, contact either of the following POCs:

- HQ DMA, Command Support Division, DSN 356-9329 (703-285-9329).
- Defense Mapping School, Geophysics Department, DSN 655-3206 (703-805-3206).

Hand-held laser pointers

Advances in technology are having a definite effect on the aviation community. One area where this advancement is finding its way into Army flight cockpits is with hand-held lasers. These gadgets are small, lightweight, and relatively inexpensive. For as little as $70, anyone can purchase a hand-held laser in the form of a laser pointer. Aviators are by nature problem solvers, and some aviation warrant officers have come up with fairly innovative ways to use these lasers in everyday aviation operations. For example, the lasers may be used to—

- Enhance crew communication by pointing out specific areas of interest or concern.
- Identify hazards along a route of flight during a night vision goggle mission.
- Point out the next slingload hookup point.

On the surface, applying laser technology in this way appears harmless enough, and in the long run, using lasers for such purposes makes sense. But for the present, there may be some problems that should be considered. The effects of these "eye-safe" lasers on NVGs, direct-view optics, and on the operators of such vision-enhancing equipment need to be further explored and some questions answered. For example: "What would happen if a laser beam were inadvertently directed at a soldier on the ground while the soldier was looking at the aircraft through a set of binoculars," or "What sort of degradation is there in the ANVIS when these lasers are being used?" Most of the lasers are within the ANVIS spectral response, and overall resolution of the goggles could be significantly reduced without the aircrews being aware of what is happening. The laser doesn't even have to be pointed at the NVGs to degrade their resolution.

A working group has been formed to resolve some of the questions and concerns that are being raised about the use of hand-held lasers. Among the organizations represented by this working group are the Army Safety Center, PM for Night Vision, Electro-optics, Night Vision Electronic Sensor Directorate, CECOM Safety, and the Army Environmental Hygiene Agency.

Until these concerns are resolved and techniques and procedures developed, it is recommended that hand-held laser devices **not** be used in Army aircraft.

While use of hand-held lasers in cockpits is not recommended at this time, if you have ideas on how these devices might be used in the future, contact CW5 Rodney Rowe, Army Aviation Center Night Vision Device Branch, DSN 558-9545 (205-255-9545).

Questions regarding this article should be addressed to the USASC Aviation Branch, CW5 Robert A. Brooks, DSN 558-3703 (205-255-3703) or LTC Robert Johnson, DSN 558-3756 (205-255-3756).

Editor's note

The proliferation of hand-held lasers calls for warnings about the hazards involved in the use of such devices. See article "Hazard alert: pen-like and other laser pointers," in the December 1993 issue of ***FlightFax.***

Accident briefs

Information based on preliminary reports of aircraft accidents

Utility

UH-60 Class C

A series - While conducting medevac mission, crew encountered heavy dust during landing to field site. Aircraft landed hard on tail wheel.

Attack

AH-1 Class C

S series - During cruise flight, chip detector caution lights flickered. During approach for landing, power loss occurred at about 40 to 50 feet AGL. Aircraft landed hard, damaging landing gear and underside of fuselage.

S series - Crew initiated tactical dash during training mission and pulled in 68 PSI torque. Aircraft landed and crew performed normal shutdown. Drive train was overtorqued.

AH-64 Class C

A series - During takeoff to exit tactical training area, crew felt a bump. As crew increased airspeed, they felt an increased vibration and elected to do a precautionary landing. Postflight inspection revealed damage to three of four main rotor blades.

A series - During night tactical mission, aircraft departed holding area en route to battle position. During flight, transmission chip caution light came on. Crew was unable to find suitable landing area. Aircraft continued circling at 50 feet and 30 knots. Pilot then initiated a climb and observed landing site at his 9 o'clock position, made a 90-degree left-pedal turn, and began approach to landing site. Prior to touchdown, pilot made left-pedal turn to align aircraft with touchdown site. Crew completed landing and normal shutdown procedures. Postflight inspection revealed tail rotor blade damage due to striking small tree.

Cargo

CH-47 Class A

D series - During day VFR mission, aircraft landed at field site for passenger pickup. While on the ground, rear of aircraft ascended and it rolled onto its right side. One fatality.

CH-47 Class C

D series - Aircraft was trail in a flight of six on a VFR service mission. During postflight, crew noticed clamshell doors had separated during flight.

D series - During cruise flight, aircraft lost hardware for shock assembly and bungie cords. Ski rotated to a nose-low attitude and aft portion of ski caused damage to outboard portion of ramp exterior surface.

CH-47 Class D

D series - Crew was performing water drop operations for forest fire suppression. While crossing a ridge on approach for water drop, crew failed to maintain adequate clearance. Water bucket was damaged when it hit the ridge.

CH-47 Class E

D series - During preparation to conduct fire bucket standby, crew lifted full 1,000-gallon bucket for third of three prechecks. As aircraft climbed to a hover, center hook inadvertently released. Fire bucket fell to ground and sustained damage.

D series - During external load operations, crew placed Sheridan tank on ground. As slings slackened, load rolled down slope. Crew chief was told to release load and did so with normal release. When hook opened, load broke tip off central cargo hook.

D series - While increasing RPM from minimum beep to 100 percent during runup, No. 2 engine began uncommanded increase that could not be reduced with normal beep trim. Crew moved ECL to ground and RPM decreased. RPM reached 102 percent.

Observation

OH-58 Class A

A series - At 15 feet AGL while proceeding into wind, pilot declared precautionary landing. Aircraft was observed to make a 180-degree right turn and strike ground nose first. Aircraft lost its landing gear, rebounded, and struck ground a second time before coming to rest on its right side.

OH-58 Class C

A series - Aircraft was operating at 90 percent N2 RPM while being washed down with water hoses before redeployment by ship. PC observed reduction in engine RPM and shut aircraft down. Unit MTP told PC to restart aircraft after engine TOT dropped below 200 degrees. During restart, engine TOT rose to 900 degrees at normal rate and then began rising rapidly. PC executed emergency shutdown. TOT exceeded 1,000 degrees. Investigation continues.

Fixed wing

C-12 Class C

C series - While taxiing for takeoff, pilot veered aircraft off taxiway to give additional clearance between C-12 and two F-4s. Left main landing gear struck concrete housing of taxiway light that protruded out of ground. Aircraft forward momentum and obstruction caused left main landing gear to collapse to rear. Aircraft pivoted left and left wing and lower nacelle contacted ground, while left propeller struck ground several times. Aircraft came to rest on its left wing and nacelle and its front and right main landing gear.

F series - Isolated thunderstorms were briefed as possible for route of flight. Several deviations were made to avoid buildups en route. Crew completed uneventful flight. During PMD inspection, maintenance found small nick on left propeller and hole in aft end of right elevator.

C-12 Class E

C series - Pilot was closing air stair door when door latching handle apparently sheared in fully locked position, rendering handle inoperative. PC noted cabin door caution light was still illuminated and asked pilot to check door. Pilot noted door handle had broken and checked position of four lock bolts and locking mechanism to determine if they were properly positioned to indicate door was secured. Crew rechecked and determined door latch was secure for flight and received clearance to proceed with normal takeoff. At about 300 feet, crew heard loud muffled noise from rear fuselage door area. Pilot saw that door had come open. Crew aborted takeoff and returned for uneventful landing.

C series - When main landing gear was lowered during landing sequence, crew noticed right main landing gear position indicator light failed to illuminate. Light remained out after bulb from transponder was used to replace gear position indicator light, and crew performed manual gear extension. Aircraft landed safely.

OV-1 Class E

D series - After takeoff, PC placed gear handle up in order to retract landing gear. PC noted that gear indications fluctuated but did not show "up" indications even after PC recycled gear several times. PC

placed gear handle down and got a good "down" indication. PC flew by tower to confirm gear was down and completed normal landing without further incident. Malfunction was caused by air in hydraulics system and dump valve failiing to reset.

Messages

■ Safety-of-flight emergency message concerning immediate grounding of H-47 aircraft assigned only to the 160th SOAR (CH-47-94-01, 092243Z Sep 94). Summary: Inspection has revealed that the electrical connector for the fuel pump inside the HM-020-800 tank could have a faulty connector and could cause the pumps to fail. The fuel control panel for the HM-020-800 fuel system for the H-47 aircraft assigned to the 160th SOAR (Abn) may have a faulty relay, causing an excess amount of voltage to the intake fuel transfer pumps, and causing them to fail. Contact: Mr. Brad Meyer, DSN 693-2085 (314-263-2085).

■ Safety-of-flight technical message concerning rescission of safety-of-flight message CH-47-94-01, grounding H-47 aircraft assigned only to the 160th SOAR (CH-47-94-02, 161800Z Sep 94). Summary: A review of inspection procedures regarding the electrical connector for the fuel pump inside the HM-020-800 has revealed an error in the inspection process used. The electrical connector is not, repeat is not, faulty and the pumps will not fail. Further investigation of the fuel control panel for the HM-020-800 has revealed no problem, repeat no problem, with a relay capable of causing an excess amount of voltage to the fuel transfer pumps. Therefore, safety-of-flight message CH-47-94-01 is rescinded. The red "X" required by CH-47-94-01 may be cleared on all H-47 aircraft assigned to the 160th SOAR (Abn).Contact: Mr. Brad Meyer, DSN 693-2085 (314-263-2085).

■ Safety-of-flight technical message concerning restriction of hydraulics-off maneuvers and one-time inspection for loose main rotor hub worm gears on all UH-1H/V aircraft (UH-1-94-04, 151829Z Aug 94). Summary: The worm gears that are used to adjust the twist on the UH-1 main rotor hub tension torsion straps have been found loose on hubs in service and in stock. To prevent loss of adjustment of the tension torsion straps, these worm gears are secured in place by means of proper shimming of the hub spring plate assembly to the main rotor yoke. Loose worm gears may not be noticeable by the crew during operation of aircraft with hydraulics on; however, with hydraulics off, a significant lack of collective control will be noticed should the tension torsion strap lose the preset adjustment. In addition to loose worm gears, the bolts that mount the hub spring plate assembly to the main rotor yoke were found to have lost torque in some of these cases. Loose worm gears and lost torque on the mounting bolts can be attributed to either improper shimming of the hub spring plate (too many shim), use of excess adhesive (EA934) during assembly of the plate to the yoke, or the improper application of the adhesive (wrong location). The corrective procedure is the same regardless of the cause. Removal and reinstallation of the hub spring plate assembly must be accomplished per the instructions in this message and in TM 55-1520-210-23-1. Aircraft are restricted from hydraulics-off maneuvers, except for emergency operations, until the maintenance requirements of this message are completed. Contact: Mr. Brad Meyer, DSN 693-2085 (314-263-2085).

■ Aviation safety action informational message concerning approved engine cleaners for Army turbine engines (GEN-94-ASAM-11, 311532Z Aug 94). Summary: Because of Environmental Protection Agency restrictions, several units have requested that an engine cleaner be identified that has no hydrocarbon solvents. The appropriate military specification for turbine engine gas path cleaning components, MIL-C-85704, has been revised to include Type II and Type IIA cleaners which are aqueous cleaners that do not contain hydrocarbon solvents. Type II cleaners require dilution with water, while Type IIA cleaners are ready for use with no dilution required. The purpose of this message is to inform users of an approved cleaner (Type II and IIA) for all turbine engines. Contact: Mr. Lyell Myers, DSN 693-2438 (314-263-2438).

FOR MORE INFORMATION ON SELECTED ACCIDENT BRIEFS, CALL DSN 558-2119 (205-255-2119).

In this issue:

- *FY 94 in review*
- *SOPs and things*
- *Commander's Accident Prevention Plan*
- *Summary of ALSE messages*
- *More ALSE information*
- *Map datums: a note of caution*
- *Hand-held laser pointers*

Class A Accidents *through September*

		Class A Flight Accidents		Army Military Fatalities	
		93	94	93	94
1ST QTR	October	6	2	2	0
	November	2	3	6	0
	December	0	2	0	2
2D QTR	January	1	1	0	2
	February	5	2	8	0
	March	1	0	5	0
3D QTR	April	4	5	0	2
	May	1	1	1	0
	June	0	0	0	0
4TH QTR	July	0	4	0	5
	August	1	1	0	0
	September	2	1	0	0
	TOTAL	23	22	22	11

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