Flightfax

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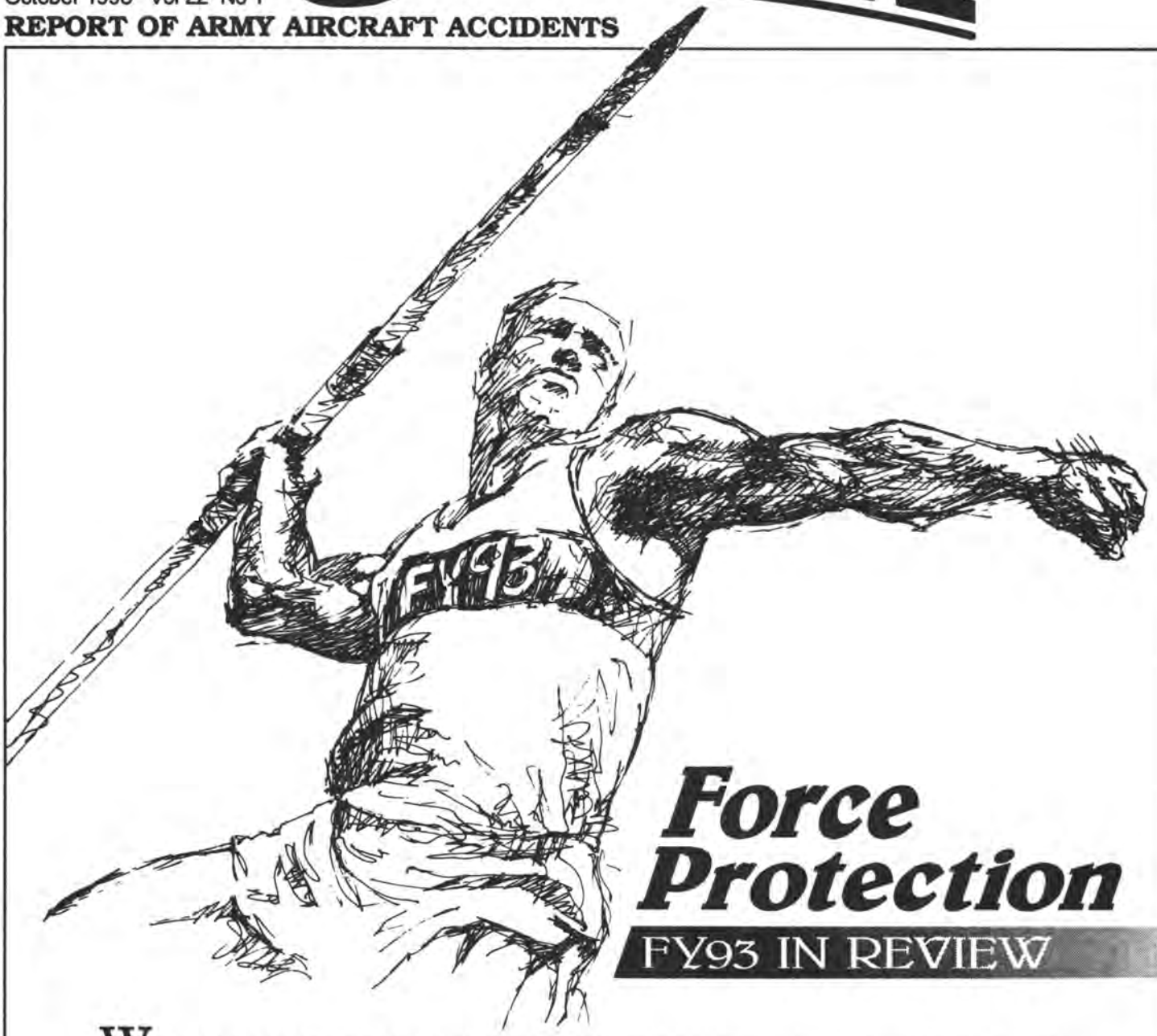
REPORT OF ARMY AIRCRAFT ACCIDENTS



Force Protection

FY93 IN REVIEW

WE BEGAN FY 93 BELIEVING WE COULD SET A NEW SAFETY STANDARD IN ARMY AVIATION FOR THE SECOND YEAR IN A ROW.

ALTHOUGH WE KNEW THAT IMPROVING ON THE FY 92 CLASS A FLIGHT ACCIDENT RATE OF 1.57 PER 100,000 FLIGHT HOURS—THE LOWEST EVER—WOULD REQUIRE A LOT OF HARD WORK BY EVERY MEMBER OF THE AVIATION TEAM, WE THOUGHT WE WERE READY FOR THE CHALLENGE.

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Fully expecting Armywide force-protection efforts to remain at high levels, we entered FY 93 anticipating another banner year for safety. Unfortunately, the bad news in Army aviation came early in FY 93—accidents that should have been prevented began claiming the lives of our crewmembers and destroying our aircraft at an alarming rate.

Recap of FY 93

■ *First quarter.* During the first 45 days of FY 93, we experienced 8 Class A flight accidents in which 10 lives were lost, 8 of which were in one accident. By the end of the first quarter, the Army had experienced nine Class A aviation flight accidents. That was four more Class As and six more deaths than for the same period in FY 92.

Analysis revealed that of these nine major accidents, only two resulted from materiel failure—the remainder were the direct result of human error. The red flags went up. General Gordon R. Sullivan, Chief of Staff of the Army, urged commanders to "apply our current programs with aggressive leadership and tough management." And BG R. Dennis Kerr, Director of Army Safety, urged individuals of all ranks to accept responsibility for accident prevention by analyzing reports, data, and procedures to find out what went wrong and then to refocus on force-protection efforts.

■ *Second quarter.* Although commanders and individuals at all levels were trying hard to get safety back on the right track, we experienced another 7 Class A flight accidents in which 14 more people lost their lives during the second quarter of FY 93. Our safety program that protected us through FY 92 had weakened. We were losing soldiers and destroying aircraft in accidents that should have been prevented.

In March, General Sullivan issued another message urging commanders to "be in charge of your risk management; ask the tough questions; and make the decisions to change the conditions when risk exceeds your parameters." The battle to reverse the accident trend continued.

■ *Third quarter.* Four Class As early in April suggested that core aviation problem areas—poor crew coordination and failure to employ solid risk management skills—were continuing to plague our crews. In early May, General Sullivan issued yet another message directing units to—

➡ Apply risk management principles against aviation OPTEMPO and mission demands to assess the impact of personnel turbulence and drawdown.

➡ Use the crawl-walk-run training assessment to protect the force.

➡ Teach risk management at all levels, including senior leader courses, pre-command training, and assistant division commander training.

➡ Set aside a safety standdown day to—

• View the Army Aviation Center's video titled **Eliminating the Avoidable Accident** (TVT 46-145, PIN 710219).

• View the Army Safety Center's video titled **Army Safety Leadership on Risk Management** (TVT 20-1012, PIN 710271).

• Review recent accidents, use the Safety Center's "Next Accident Assessment" to identify high-risk individuals, and look for ways to enhance unit safety and enforce accountability.

Although we did experience five Class A flight accidents during the third quarter (four of which occurred early in April), there was only one fatality, and it was the result of the effects of an unforecast extreme weather phenomenon—a microburst—on an AH-64. By the end of the third quarter, we were beginning to see some results of the diligent efforts to bring force protection back into focus.

■ *Fourth quarter.* During the fourth quarter, we had three Class A flight accidents and no fatalities. Until the first of these three accidents occurred, aircrews had flown for 86 days without a Class A accident. Since converting to our current accident classification criteria in FY 88, this is the longest we had gone without a Class A flight accident. Although we let our guard down during the first half of FY 93, we were able to recover by refocusing on force protection and close out FY 93 on a more positive note.

Class A Accidents through September

	Month	Class A Flight Accidents		Army Military Fatalities	
		FY92	FY93	FY92	FY93
1st Qtr	October	1	6	0	2
	November	3	2	4	6
	December	1	1	0	0
2d Qtr	January	3	1	0	0
	February	1	5	0	8
	March	4	1	2	5
3d Qtr	April	1	4	0	0
	May	1	1	1	1
	June	2	0	2	0
4th Qtr	July	2	0	1	0
	August	1	1	0	0
	September	2	2	0	0
	Total	**22**	**24**	**10**	**22**

What went wrong?

There's little doubt in anyone's mind that the Army changed rapidly in FY 93 and that it will most likely continue to do so for some time. It would be hard to find anyone who hasn't felt the effects of rightsizing, unit movements, and personnel turbulence within the unit. The loss of personnel and reduction of training and operational funds probably had a greater impact in some areas than we had originally thought they would.

We were riding high coming off the best year ever in Army aviation safety, but the momentum soon faded. There is no means to substantiate that preoccupation with uncertain futures, career decisions, and individual movements distracted aircrews as they went about their daily operations in an environment that demands 100 percent of a pilot's attention. However, the flight records do show that in some of the cases crews had not logged many flight hours before the accidents, which could have resulted in decreased proficiency levels, especially in our more complex aircraft systems.

Refocusing on safety

Human error was a cause factor in 14 of the 16 Class A flight accidents that occurred during the first half of FY 93. It is suspected that disruptive factors such as the effects of rightsizing, unit movements, and personnel turbulence—combined with less time on the flight controls—played some role in this high number of human-error accidents early in FY 93. Fortunately, through commander involvement at all levels, a solid risk management program, and crew coordination training, we were able to bring safety back into focus. In fact, at one point during the last half of FY 93, our aircrews flew for 116 days without a single Class A human-error flight accident.

Refocusing on safety and force-protection initiatives helped us close out FY 93 with a Class A flight accident rate of 1.85 per 100,000 flight hours, which is just slightly behind last year's best-ever rate of 1.57.

As we begin FY 94 . . .

Maintaining the safety momentum we worked so hard to regain in the last half of FY 93 and keeping safety on the right track in FY 94 isn't optional; it's something we have to do. Wishing won't make it happen. Effective risk management, self-discipline, professionalism, focus, supervision, leadership, and dedication to force-protection initiatives can make it happen.

Constraints will dictate that we drop back into the walk or even crawl mode in some cases. Commanders must be willing to make the tough decisions based on the resources they have and the proficiency levels of their crews, even if it means saying, "No, we can't safely do that mission."

Responsibility for safety cannot be delegated

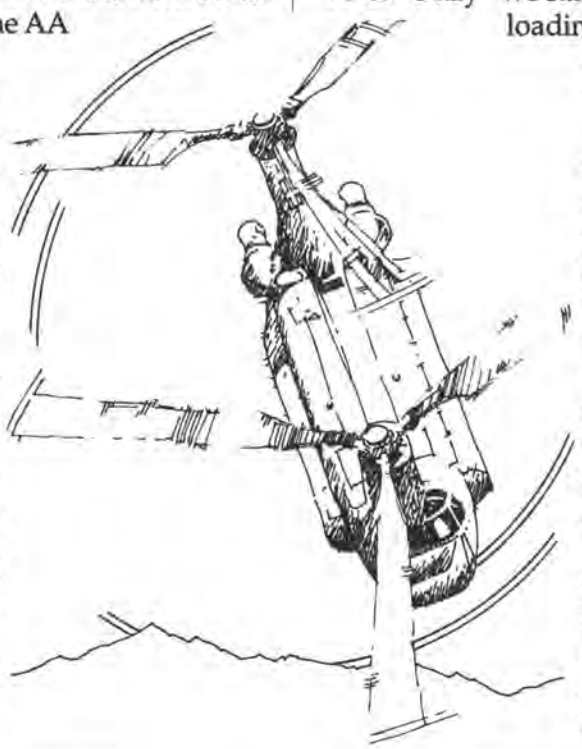
to someone else. As individuals and leaders, it's our job to more effectively manage mission risks to ensure force protection. Whether it's an extremely high-, a high-, medium-, or low-risk mission, it's our responsibility to reduce and/or eliminate identified hazards and implement control measures to bring risks to the lowest level possible. Even if we have approval to do a medium-risk mission, we still have a responsibility to try to reduce the risks further and make it a low-risk mission if possible.

With everyone committed to force protection, we will be able to reduce accidental losses and make FY 94 the year in which we set another new standard in aviation safety. ◆

Nobody lost—a great message to send

During a field training exercise, our mission was to laager our CH-47Ds outside the assembly area (AA). My crew and I planned our laager site and moved out at sunrise. When we arrived at the laager site, I landed on a small stump and punched a 1-inch hole in my aft left ski. Not a good way to start a day, but compared to coming events, it probably was the best part of my day. The good-natured ribbing about my piloting skills continued until a UH-1 appeared with hot chow for all. With their attention on a good meal, my crew soon forgot about the ski.

At 1000, we received a call over the PRC 77 to return to base. We arrived at the AA and received a mission to resupply a forward arming and refueling point with fuel. While we were rigging the blivets and planning the mission, we received a mission change. The new mission was to transport the Task Force S4 to the brigade support area (BSA) and backhaul supplies for our AA, which sounded like an easy mission. We planned the route along the coastline. Our flight in was easy—no OPFOR (opposing forces). During the next 2 hours while the S4 secured our load, we caught heck from the units supporting the BSA for blown down tents, tactical operations centers (TOCs), vehicle camo, fighting positions, and so forth. It sure is tough to convince some people you really can't see a good camo job until it's too late to avoid it!



While we were waiting, our unit's mass casualty aircraft departed the BSA with a full load. There were still 10 "casualties" left, and we were told "if you have room, haul 'em." (Although we certainly didn't know it at the time, these simulated casualties were about to come entirely too close to being the real thing.)

Our chow for the next 3 days arrived, and we were busy loading it when an NCO approached and asked if we could resupply a mortar platoon in danger of being overrun. This mission was also quickly approved and added by our Task Force TOC. "Okay" we said. "Give us a hand to finish loading the chow" (free labor is always welcome), "and then we'll load the ammo."

With the added mission, we replanned the route of flight. The new route would take us through the main battle area rather than along the coastline, which as it turned out was lucky for us. We departed south for the mortar position, dropped off the ammo, and then departed for our own AA about 6 clicks away.

Now we're getting to the part of the story that makes holes punched in your ski and blown down tents seem a lot less significant. Following a normal NOE takeoff, we were on the treetops and came to a river running from west to east in a canyon about 150 feet deep. At about 80 knots, I made a right

descending turn into the river bed. Upon what I thought was the end of the turn, the aircraft nose yawed left about 10 degrees and we started to roll right.

This is where everything starts to happen in fast-forward motion. Although there's a lot of stuff to tell about what was going on, it only took about a minute and a half from the time our in-flight emergency occurred until we were on the ground.

I asked my pilot if anything had fallen into his pedal box. He checked (I looked too); nothing was obstructing the pedals. I applied more right pedal in an attempt to straighten our ground track. "Ohhh nooo!" As I depressed the right pedal about 2 inches, it froze. I told my pilot to get on his right pedal and help me move it. He did; still nothing. The roll was getting worse, and the nose was yawing farther left. And we were still at 80 knots. About this time, my flight engineer asked "whatsamatter?" I broke the news to the crew that we were in for a rough ride.

I applied left aft cyclic to begin a cyclic climb to bleed off my airspeed and give us some altitude. Other combinations of inputs momentarily brought the aircraft back to level attitude. As we reached about 500 feet AGL, the aircraft began an uncommanded left yaw that progressed into a rapid, level, flat spin to the left. The strain on the aircraft was increasing at an alarming rate.

I don't know how I was planning to get into a landing zone (LZ), but I told the crew to start looking for one. "None in sight, sir" was not an answer I wanted to hear! "The paxs are getting into crash position, sir" were the next and last words I heard as we began spinning harder left.

The spin was intense enough to sling cargo that was restrained with standard tiedown straps out the back right past my crew chief, who was suspended by his safety strap in midair at the edge of the open ramp. Thank goodness he had remembered to hook up. I know it was a strange thought considering our dire circumstances at the time, but I remember thinking the cargo looked like little satellites as it flew by the nose of the aircraft.

The left spin was getting really fast by now. I tried increasing and decreasing both power and RPM; neither helped. As the what-am-I-going-to-do-now thoughts raced through my mind, the aircraft pitched nose down 30 degrees and began descending at about 3,000 feet per minute (FPM). Good thing we had managed to gain some altitude before this happened. Still spinning hard left and descending rapidly, I leveled the aircraft and prepared for a darned hard "landing."

As we entered the trees, I applied 70 percent thrust, which slowed the descent. We made one more spin during which we clipped the tops out of 100-foot-tall birch trees. As we started down through the trees, I applied all remaining thrust. If you've ever wondered just how much thrust a Chinook really has, 157 percent is all it's got—that's it. The engines really screamed, but they produced it. I was pinned hard to the bottom of what was left of my seat cushion.

We continued down "nice and easy" as 13 trees pierced the aircraft. The spin had finally stopped. I watched the three blades on the forward head impact a birch tree at my 11 o'clock position; those blades really exploded.

"Whew . . . we made it. Gotta shut down the aircraft, gotta punch the fire on No. 2 engine out and get to the paxs." My thoughts were racing as I performed emergency shutdown procedures and pulled the fire control handles on the No. 2 engine to ensure the exit side of the aircraft would be clear of any fire. My pilot was already moving through the companionway to the paxs. I quickly joined him in the aft cabin, and we got the paxs out and assembled at the top of the ridge. Quickly counting noses, 1-2-3 . . . 17, I knew we were all there. Damn, that was a great feeling.

I used my PRC 90 to contact help while my crew checked each other and the paxs for injuries. I contacted a UH-1 overhead who had watched all this happen and passed the best message of the trainup: **Nobody lost—all safe and**

accounted for!!!! That deserves highlighting and more than one exclamation mark even if it isn't grammatically correct.

We hiked a mile to an LZ, and another Chinook picked us up for the short ride to the hospital. A medic took my blood pressure and asked, "Sir, is your blood pressure always this high? It's 210 over 90." I told her that hers would be a little high too if she had been on the ride with us 15 minutes ago!

Many thanks to my crew—CW2 Michael S. Kelley, SSG Perry V. Polsey, and SPC Christopher M. Popps—and all those involved in our rescue. Air Assault! ◆

—CW3 Ronald D. Kinman, Company C, 228th Aviation Regiment, Fort Wainwright

Editor's Note: Following this accident, the aircraft flight control system was subjected to a detailed examination. During the teardown analysis of the flight control hydraulic actuators, examiners found that the self-locking bolts in the pilot valve of the aft upper dual boost pivoting actuator had failed as a result of hydrogen embrittlement. One of the bolt heads had become lodged between the pilot valve and the housing, restricting travel of the pilot valve. This resulted in the actuator operating much slower than normal. As a result of this malfunction, when CW3 Kinman applied right pedal in a descending right turn in combination with left aft cyclic to level the aircraft, the right pedal locked in that position.

With the right pedal locked, the aircraft was in a flight mode in which CW3 Kinman had only minimal partial control and for which there were no known emergency procedures. Faced with this in-flight emergency, CW3 Kinman's sound judgment and immediate actions directly resulted in the passengers and crew surviving this accident virtually unscathed. For his superb airmanship under these most difficult conditions, CW3 Kinman was awarded the Army Aviation Broken Wing.

New CH-47D video

A new CH-47D video has been distributed to visual information libraries throughout the Army. You may obtain a copy by asking your local audiovisual library for—

■ **Making It Go: Electrical Power for the CH-47D** (TVT 46-67, PIN 709035). The CH-47D Chinook medium-lift helicopter depends on electricity to operate. Its electrical installation comprises two similar but independent AC and DC generating systems. This 12-minute video identifies and locates the components that relate to each power source. Diagrams depict the flow of electricity through the helicopter from the different power sources. The video also shows what happens when a power failure occurs. ◆

New rigging procedures now available

Certified rigging procedures are now available for—

■ XM1073 Powerpack Transport Trailer

■ 2.75-inch rocket fastpack pallet (PA150 pallet—2,200 pounds, PA151 pallet—2,000 pounds)

If units need copies of these certified rigging procedures, they may contact the U.S. Army Transportation School, Helicopter Transport Section, ATTN: ATSP-TDO (Mr. Ted Rodriguez), Fort Eustis, VA 23604-5408. ◆

POC: Mr. Ted Rodriguez, DSN 927-6570, commercial 804-878-6570, FAX 927-0403 or commercial FAX 804-878-0403

Aircraft forms and records need close attention

DA Pam 738-751: Functional Users Manual for the Army Maintenance Management System—Aviation (TAMMS-A), dated 15 June 1992, describes the forms and records needed to control and manage aircraft and aviation-associated equipment, including mission-related equipment, and maintenance. Types of records include—

- Aircraft logbook forms and records.
- Operational records.
- Maintenance records.
- Historical records.
- Deficiency reports.

Aircraft logbook forms and records provide a ready reference of data and codes for filling out operational, maintenance, and historical forms, records, and files. Operational records supply a record of aircrew flight information, important engine data, aircraft servicing data, weapon-firing data, and when the next scheduled maintenance inspection is due. Data entered on maintenance records is used in computing aviation equipment readiness, reliability, durability, performance, maintenance costs, recourse needs, safety considerations, and logistics needs for aviation equipment maintenance.

The bottom line is that all of these forms and records are needed to ensure complete information is available to the aircrews, maintenance, and quality control personnel. But it's not only aircrews and maintenance people who occasionally must use these forms. Unfortunately, it sometimes becomes necessary for accident investigators to search through these records too.

If an aircraft is involved in an accident, accident investigators conduct a thorough review of the aircraft forms and records, looking for any documented problem area that possibly could have contributed to the in-flight emergency. During the records review following several recent accidents, investigators have identified numerous documentation shortcomings. For example, completion of safety-of-flight directives not recorded, inspections required by the maintenance manual not recorded, maintenance performed on the aircraft and not recorded, and so forth.

I'm sure you get the picture: if there is an inspection required, it should be documented; if maintenance was performed on the aircraft, document the work done. But sometimes in haste to get the aircraft ready for the mission, the paperwork gets postponed and is never completed.

Forms and records are more than just a collection of paper and data. The ultimate purpose of this information is to have aviation equipment that is safe, reliable, and ready for the mission. Aircrewmembers, mechanics, technical inspectors, maintenance managers, records clerks, supervisors, and commanders at all levels share a responsibility in maintaining forms and records or in ensuring that the forms and records are properly maintained.

Do your part—record all required entries, and make those entries by the book, following instructions in DA Pam 738-751. Remember, whether it's done intentionally or through negligence, failure to make required entries on aircraft forms and records could result in disciplinary action. ◆

POC: SFC Alcides Santana, System Manager, Aviation Branch, DSN 558-3262, commercial 205-255-3262

Flight physical—a shared responsibility

Following a recent accident, a review of a crewmember's records revealed that he had not had a current flight physical for 4 years. Did this oversight cause the accident? In this particular case, it was not a contributing factor. However, the lack of a current flight physical discovered during this accident investigation is not an isolated case. Further research revealed a surprising number of cases where accident crewmembers did not have current flight physicals, especially crewmembers in OCONUS units.

Regulatory requirements

AR 95-1: Flight Regulations requires that all Army aviators who are in aviation service per AR 600-105: Aviation Service of Rated Army Officers must meet the annual flight physical requirements

outlined in AR 40-501: Standards of Medical Fitness regardless of their assignment. AR 40-501 covers in detail the fitness requirements that must be met and those areas where waivers are authorized.

Report processing

After individuals complete their flight physical to the satisfaction of the administering flight surgeon, the report is sent to the Army Aeromedical Center at Fort Rucker, AL, for review. The current flight physical is compared to the individual's previous flight physical in the data base.

Like all other organizations in the Army, the staff at the Aeromedical Center has recently been reduced, and they are trying to do more with less. At current staffing levels, only about 50 flight physicals per day can be processed. Presently, there is a backlog of more than 2,000 reports. Processing is further delayed if there is an administrative problem with the report. A reviewer attempts to correct the deficiency if possible; sometimes the report has to be returned to the administering flight surgeon for correction. All of this is very time consuming.

When a flight physical is returned as "disqualified," it usually indicates that something has not been properly documented as required by the regulations. However, even with a disqualification, Aeromedical Policy Letter 21-87 allows the flight surgeon some latitude to give a crewmember an upslip pending correction of certain disqualifying problems.

Flight surgeon's responsibility

Occasionally, a report gets lost in the mail. Copies of flight physicals should be made and placed on file before they are forwarded to the Aeromedical Center for review. Flight surgeons should also set up some kind of tracking system that will allow them to keep tabs on how long the review process is taking. If a report has not been approved and returned within 90 days, they should contact the Aeromedical Center, DSN 558-7420/7430, commercial 205-255-7420/7430, or TOSTR@RUCKER-EMH3.ARMY.MIL to find out why the report has been delayed.

Crewmember's responsibility

As a former Army aviator, I realize that I never concerned myself with the paperwork involved in a flight physical. I was always happy just to get an upslip that cleared me for flight. You may be guilty of the same kind of thinking. But now I know I was wrong; it was my responsibility to ensure that I had a current flight physical in my health record.

A recent policy change requires that in addition to notifying the administering flight surgeon when a report is being returned for correction, the Aeromedical Center must also notify the individual aircrewmember, if an address is available. But don't depend on them; take responsibility for your own report. If you haven't heard anything within 90 days of taking your physical, check with your flight surgeon. If the flight surgeon can't tell you your physical's status, call the Aeromedical Center.

With so many demands on flight surgeons, oversights and failure to follow up on reports will sometimes happen. Nobody is more interested in your flight physical than you are, and you have a personal responsibility to ensure that you have a current flight physical on record. ◆

POC: Mr. Bob Wilkins, Quality Control Section, DSN 558-5319/3493, commercial 205-255-5319/3493

Broken Wing awards

The Broken Wing award is given in recognition of aircrewmembers who demonstrate a high degree of professional skill while actually recovering an aircraft from an in-flight failure or malfunction necessitating an emergency landing. Requirements for the award are spelled out in AR 672-74.

■ **CPT Henry H. Waller, Company A, 15th Military Intelligence Battalion (Aerial Exploitation), Fort Hood.** As the OV-1D reached a cruise climb airspeed of 138 knots, CPT Waller applied gradual aft elevator pressure. Suddenly at about 900 feet AGL, the aircraft incurred a low- to medium-frequency vibration. The pilot's control stick began moving violently fore and aft through 4 or 5 inches of travel. The intensity of the vibration made communication with air traffic control (ATC) difficult. An emergency was declared as CPT Waller attempted to determine the severity of the situation. (This type of flight control malfunction is not addressed in the aircraft operators manual.) Avoiding conflicts with other traffic, CPT Waller adjusted power and pitch attitude until he found the correct combination to minimize the effects on the aircraft. Though communications were severely hampered, CPT

Waller coordinated with ATC for a return to the airfield and an emergency landing. Flying the aircraft at the limits of controllability, CPT Waller continued to maintain the appropriate aircraft attitude despite the violent control feedback. Upon entering the downwind for landing, he noticed an Air Force C-141 at his 12 o'clock position with a paradrop in progress. In his concern for avoiding personnel, he continued to maneuver the aircraft over unpopulated, wooded terrain. Realizing that controllability could be lost as the aircraft entered the final landing configuration, CPT Waller reviewed ejection procedures with the other crewmember. On final approach, CPT Waller was able to maintain an optimum airspeed that facilitated a safe approach while minimizing the control feedback and successfully landed the aircraft without further incident. Postflight inspection revealed that the left elevator trim tab was not connected to its corresponding control tube. Further analysis revealed that the two horn assemblies had broken, allowing the trim tab to move independently through full travel. This unrestricted movement had caused the elevator to flutter violently.

■ **CW3 Walter E. Segeren, Company E, 1st Battalion, 14th Aviation Regiment, Aviation Training Brigade, Fort Rucker.** During an enlisted aerial observer NVG qualification training flight, the OH-58A was flying southwest on an NOE route when the low-rotor audio sounded and the low-rotor light came on, followed by a simultaneous reduction of N2 RPM. The aircraft began to lose altitude and yaw left, descending toward trees below. CW3 Segeren remembered seeing a field to his right while checking his position earlier and he quickly pulled all remaining power in an effort to clear the trees surrounding it. To reach the field required a turn of nearly 120 degrees, further reducing engine and rotor RPM. As the aircraft descended toward the field, CW3 Segeren guided it through a narrow gap between the trees. Passing through 40 feet AGL, he detected a 40-foot tree directly in the aircraft's path and a steeply sloped hilltop to his right. At this point, the aircraft was vibrating so violently that further powered flight was impossible. CW3 Segeren rolled the throttle to flight idle and performed an autorotative landing to an area between two terraced slopes, clearing the last tree by inches.

■ **CPT Eric D. Waage and CW2 Robert M. Vetscher, Company A, 2d Battalion, 147th Aviation Regiment, St Paul, MN.** At 2,000 feet AGL and 90 knots during a UH-1H VFR cross-country training flight, the crew heard a loud bang from the rear of the aircraft. CW2 Vetscher noticed the aircraft pitch nose down between 15 and 20 degrees and yaw to the right. CPT Waage entered autorotation, which stopped the right yaw. CW2 Vetscher took the controls and turned toward a field to the right rear, turning into the northwest wind to land. During the descent, CPT Waage was making mayday calls on the radio. The aircraft continued a controlled descent at about 70 knots until CW2 Vetscher started to decelerate at about 75 to 100 feet AGL. As the aircraft slowed, it started a right turn again. He reduced the throttle to realign the aircraft. At this point, CPT Waage manipulated the landing light and announced there were wires, which the crew had not initially seen due to darkness, straight ahead on the intended landing heading. CW2 Vetscher increased the amount of deceleration to fall short of his initial intended landing area and reduced the throttle. The aircraft touched down with no forward airspeed and some left lateral movement. After the crew shut down the aircraft, they saw that the tail rotor had completely separated from the aircraft. While in flight, the tail rotor had struck an unknown object and one blade had broken. The resulting imbalance had caused the entire 90-degree gearbox and tail rotor assembly to separate from the aircraft.

■ **Mr. Samuel R. Boyer, Bell Helicopter Textron Incorporated experimental test pilot. (At the time of this incident, Mr. Boyer was piloting an Army aircraft as part of the OH-58D Kiowa Warrior Qualification Test Program.)** The mission was to conduct rocket firing with Mark 66 rockets equipped with 10-, 14-, and 17-pound warheads, continue investigation of engine compressor surges, and determine effects, if any, resulting from firing heavier warheads. Engine surges were experienced in each of the right sideward flight conditions and were deemed to be above acceptable limits. In each case, the aircraft was shut down, inspected, and released for continued firing. No shifting of the upper transmission case or deformation of the tail rotor drive shaft coupling was noted. Firing during the first left sideward flight was completed without engine surges. The aircraft was rearmed with 14-pound warheads and flown to a 130-foot hover point to resume left sideward flight. The rocket control panel was armed. Before switching on prime data,

the crew felt the aircraft yaw left and then right, rotor RPM decayed rapidly, and the crew heard a loud, howling noise. Mr. Boyer lowered the collective and selected a landing area directly in front of the aircraft. At about 20 feet AGL, some partial power returned as Mr. Boyer applied collective to cushion the landing. During the descent, the rocket control panel was safetied by the flight test engineer. After landing, Mr. Boyer shut down the aircraft and secured the fuel handle. Inspection revealed that an instrumentation probe installed in the plenum chamber had been ingested by the engine compressor section, causing substantial foreign object damage.

■ **CW2 Curtis H. Hoagland, Company A, 3-25th Assault Helicopter Battalion, 10th Aviation Brigade, Fort Drum.** At 500 feet AGL and 90 knots, the UH-1H crew heard a grinding noise coming from the engine compartment. A cross reference of the instrument panel revealed the engine chip detector and master caution lights had come on. As CW2 Hoagland began to maneuver the aircraft toward an undeveloped housing site, the engine oil pressure dropped to zero and the engine immediately failed at 400 feet AGL. At the time of the emergency, there was a set of high-power lines between the aircraft and the intended landing site. CW2 Hoagland was able to clear the wires and execute an autorotation to the intended landing area. The aircraft touched down with little or no airspeed and came to stop after a ground run of 8 feet.

■ **CW2 Frank R. Northrop, Army Aviation Support Facility, Virginia Army National Guard.** At 1,200 feet AGL during an unaided night training flight, the UH-1H began yawing left and right, followed by severe vibrations and loud

Accident briefs

Information based on preliminary reports of aircraft accidents

Utility

UH-1 Class A

V series - Aircraft was taking off with existing tailwind. Gust of wind apparently caused aircraft to start 180-degree spin. As crew attempted to set aircraft down in sloped area, it began to roll right, right skid separated, and aircraft rolled over onto its right side. Main rotor blades contacted ground and separated from aircraft. Aircraft came to rest on right top fuselage. No fatalities. 9342

UH-60 Class C

L series - At 9,500 feet MSL, aircraft began loud whine. About 10 seconds later, an explosion occurred, resulting in failure of No. 2 engine. Crew declared an emergency and completed roll-on landing without further incident.

Attack

AH-1 Class C

E series - During post-flight inspection, crew found puncture or open crack on concave portion of dent on leading edge spar of red tail rotor blade, along with some smaller dents on leading edge spar that did not break surface material. White tail rotor blade also had several small dents on leading edge spar.

S series - At about 50 to 75 feet AGL and torque of 47 pounds during climbout from slope area, N2 drooped to 6500 RPM. After about 2 to 3 seconds at this power setting, crew heard loud bang. Engine and rotor RPM decayed. Aircraft settled and landed hard.

AH-64 Class B

A series - During APU start for shutdown, APU fire light came on. Crew saw fire in APU area and performed emergency shutdown. Crew used both bottles in attempt to extinguish fire. Crash rescue arrived, foamed aircraft, and extinguished fire. 9343

Cargo

CH-47 Class C

D series - Crew found bottom of copilot's door unsecured and relatched and inspected it. During takeoff, door departed aircraft and hit green main rotor blade, cutting 5-inch gash aft of spar to trailing edge.

D series - While in cruise flight during postphase test flight, pilot's jettisonable door came off. Incident occurred during speed sweep check at 150 knots. Crew slowed aircraft to about 100 knots, made unsuccessful search to locate door, and then flew aircraft back to station.

CH-47 Class D

D series - While in cruise flight entering traffic pattern for landing, slingload separated from aircraft. Master caution and center-hook-open lights came on. Crew notified tower and returned to home station without further incident.

CH-47 Class E

D series - During shutdown after attempted maintenance test flight, droop stop on aft rotor would not seat. High-pressure water from fire truck was unsuccessfully used to try to seat droop stop. Aircraft was hot refueled and remained running while maintenance personnel constructed ramp to deflect rotor blade on shutdown. Ramp was

reports coming from the engine area. Unable to read N1 or EGT, the crew was unsure whether they were experiencing a compressor stall, a main rotor malfunction, or the loss of tail rotor authority. To further complicate matters, the aircraft had just begun crossing a river that separated the aircraft from the airport. Feeling a sense of urgency to get the aircraft on the ground as quickly as possible, CW2 Northrop turned away from the airport, avoiding the 2-mile-wide river, and set up an approach with power to a dirt road that appeared to run between two fields.

During the approach, CW2 Northrop asked the pilot to make a mayday call and turn on the landing light and he asked the crew chief to look for wires and ground obstructions. Even with reduced power, the aircraft continued to shake and yaw violently, making engine instruments impossible to read. On short final, the pilot turned on the landing light and, almost immediately, the crew chief detected wires in the approach path. While fighting to maintain aircraft control, CW2 Northrop maneuvered the aircraft to the right into what appeared to be a corn field. The aircraft missed the wires, and the crew completed the landing without further damage. Inspection revealed that the engine had seized and both tail rotor gearboxes had sustained major damage. ◆

fitted on static aircraft and maintenance actions rehearsed. Ramp was placed in position, and engines were shut down. During shutdown, droop stop seated and no damage was incurred to aircraft. Maintenance was unable to identify or duplicate fault.

D series - During attempted slingload hookup, forward-hook-open light on caution panel came on. Crew released load, and checked cargo hook. Crew again attempted to hook up load, and forward-hook-open light came on again. Crew released load and aircraft returned to home base. Inspection revealed internal failure of microswitch.

Observation

OH-6 Class E

A series - In cruise flight at 100 knots with doors off, hand-held fire extinguisher departed aircraft. Pilot felt loose mounting bracket flapping against his leg and saw that extinguisher was missing. Crew completed precautionary landing and normal shutdown.

OH-58 Class C

C series - During NVG training mission as aircraft was engaged, PC maneuvered aircraft to mask it from enemy. While repositioning aircraft, PC was reengaged and inadvertently allowed aircraft to settle into dead tree. Both main and tail rotors sustained damage.

D series - During low-level autorotation, student pilot failed to reduce collective and IP failed to note condition before extremely low rotor RPM resulted in upstop pounding. During post-flight inspection, crew discovered damage to rotor head and three main rotor blades.

OH-58 Class E

C series - During OGE hover with left quartering tailwind, aircraft started right yaw that could not be corrected with full left pedal. Aircraft weathervaned downslope, and IP flew aircraft in direction indicated. Crew increased torque to prevent ground contact and overtorqued aircraft to 104 percent. IP made precautionary landing without further incident.

A series - During low-level cruise flight, PC heard engine-out audio and saw engine-out light. Crew cross-checked instruments and found torque steady but decreasing N1. PC made precautionary landing without further incident. Inspection revealed N1 tachometer generator had failed.

D series - Shortly after takeoff, crew smelled JP-4 fumes in cockpit. Crew landed aircraft, and pilot saw fuel pouring into aft avionics. Crew completed emergency shutdown. Inspection revealed fuel supply line to shutoff valve was loose and lever arm was bent.

Fixed wing

C-12 Class D

F series - During VMC cruise flight at flight level 185, crew saw bright flash to left front of aircraft accompanied by sharp report. Aircraft controls and instrument indications remained normal. Crew completed landing without further incident. Post-flight inspection revealed damage to radome and horizontal stabilizer.

OV-1 Class C

D series - At 10 to 15 feet AGL during single-engine approach, rated student pilot reversed props while attempting to go to ground idle. IP immediately placed power levers in fly position. Aircraft landed hard, veered off runway, and came to rest upright.

U-21 Class C

A series - Following two successful normal approach/landing sequences, IP called for power approach,

precision landing. Following touchdown, props began to strike runway surface. IP executed engine shutdown upon noting gear level red light illumination. Aircraft slid to stop. Inspection revealed both props, flaps, belly, and landing gear had been damaged.

A series - While initiating taxi for takeoff, aircraft struck large portable fire extinguisher located just to front of No. 2 engine. Neither crewmember had previously noticed extinguisher. Inspection revealed three propeller blades and spinner destroyed, small hole in right engine nacelle, and small dent in right-side fuselage.

Messages

■ Aviation safety action informational message concerning proper control of depot-level repairs (GEN-93-ASAM-11, 101300Z Aug 93). Summary: Recent reports have indicated that some aviation intermediate maintenance (AVIM) units are using outside contractor support to perform depot-level maintenance on certain aircraft equipment. This practice is not permitted unless the AVIM unit has requested and received Department of the Army approval to function as a special repair activity (SRA). Proper control of depot-level tasks performed at the AVIM level, whether performed organically or commercially, is mandatory to assure flight safety characteristics of the equipment are not compromised. The SRA process provides this control as well as the visibility needed to assess the impact on the supply system. Provisions for obtaining SRA approval are contained in AR 750-1. The purpose of this message is to inform AVIM units that SRA approval is required for depot-level maintenance, performed either organically or commercially. Contact: Mr. Brad Meyer, DSN 693-2085, commercial 314-263-2085.

■ Aviation safety action maintenance mandatory message concerning pitot static systems tester, case grounding (GEN-93-ASAM-12, 191400Z Aug 93). Summary: There have been reports of operators getting electrical shocks by touching the case of the most recently fielded pitot static tester while in use. The potential on these cases had been measured at about 60 volts when connected to a 115-volt, 60-hertz power source. This results from the power cords not having a ground wire. The purpose of this message is to alert users to this potential safety hazard, to provide instructions on how to get the power cables used with these testers modified to ground the case, and to require a separate case ground wire if the tester must be used before this modification. Contact: Mr. Howard Chilton, DSN 693-2258, commercial 314-263-2258.

■ Aviation safety informational message concerning update to DA Pam 738-751: Functional Users Manual for the Army Maintenance Management System—(TAMMS-A), dated 15 June 1992 (GEN 93-ASAM-13, 311717Z Aug 93). Summary: DA Pam 738-751, dated 15 Jun 92, is currently under revision. It requires TAMMS-A users to forward DA Form 2408-15-2/2408-15-2-E, 2408-20/2408-20-E, all completed scheduled maintenance checklists, and supporting forms and records to Corpus Christi Army Depot after the files become inactive. These requirements have been rescinded. GEN-93-ASAM-09 provided guidance for completion of maintenance inspection checklists. These instructions are modified by this message. TM 1-1500-328-23 provides instructions for the documentation of the maintenance test flight and maintenance operational check accomplishment. Those instructions are deleted by this message. TB 43-0002-3 and DA Pam 738-751 provide conflicting requirements for documentation of deteriorated, damaged, or destroyed aircraft when requesting disposition or waiver from ATCOM. This message defines the required procedure. To eliminate confusion, instructions in this message (GEN-93-ASAM-13) will be used until the next revision of DA Pam 738-751 is fielded. A copy of this message should be inserted in the TAMMS-A manual for reference and use. Contact: Mr. Brad Meyer, DSN 693-2085, commercial 314-263-2085.

■ Aviation safety maintenance mandatory message concerning inspection of main landing gear on all AH-64 aircraft (AH-64-93-ASAM-03, 192100Z Aug 93). Summary: Main landing strut mounts have cracked, and collapse of the landing gear strut can occur. Fluorescent penetrant inspection previously used was not sensitive enough to detect cracks. The purpose of this message is to direct a recurring magnetic particle inspection on main landing gear strut mounts during each phase maintenance inspection. Contact: Mr. Howard Chilton, DSN 693-2085, commercial 314-263-2085.

■ Aviation safety action informational message concerning maintenance on fuel cells in all CH-47 and MH-47 series aircraft (CH-47-93-ASAM-05, 161400Z Aug 93). Summary: During field fuel cell inspections, blisters have been found on the manufacturer's reworked areas in the interior of the fuel cell. These blisters may be repaired by units or supporting field activities. The purpose of this message is to provide revised repair procedures to address blistering problems in the interior of some fuel cells, to provide maintenance information on fuel cells, and to emphasize the need for submitting product quality deficiency reports. Contact: Mr. Brad Meyer, DSN 693-2085, commercial 314-263-2085.

For more information on selected accident briefs, call DSN 558-3262, commercial 205-255-3262.

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