FlightFax

REPORT of ARMY AIRCRAFT ACCIDENTS
December 1996 ◆ Vol 25 ◆ No 3

Good Tidings!

There are those who would look at our FY 96 aviation safety performance and say, "Boy, were we lucky." Many of them said the same thing last year when our Class A rate was less than 1.00—0.83, to be precise—for the first time in the history of Army aviation. I will tell you, there was no luck involved. Our success resulted from proactive leadership, great teamwork, and the fact that a process called "risk management" is taking hold in Army aviation. These things together have put us on the road to world-class safety performance.

But I'll also tell you that the environment is fragile, that we're not there yet. Even as we celebrate the joy of FY 96's success, let's not be satisfied; together, we can do better in FY 97. Risk management inside and outside the cockpit, on and off duty, is a way of life.

Everyone makes safety happen!

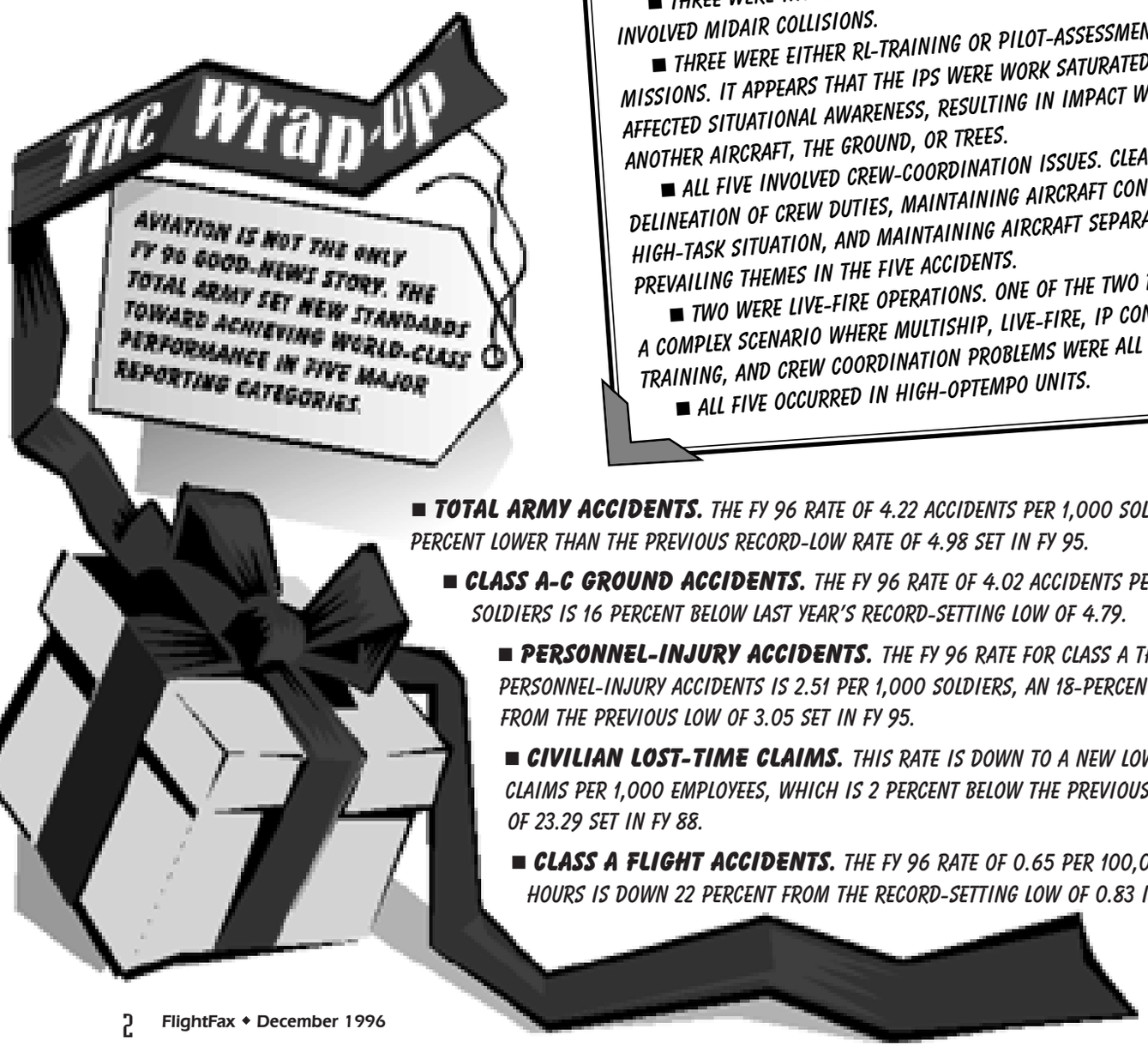
—BG Thomas J. Konitzer
Director of Army Safety

FY96 snapshots

The human factor

FIVE OF THE SEVEN FY 96 CLASS A FLIGHT ACCIDENTS WERE CLASSIFIED AS HUMAN-FACTOR ACCIDENTS. THESE 5 ACCIDENTS KILLED 14 PEOPLE AND DESTROYED 5 AIRCRAFT. FOUR OF THE FIVE HAPPENED AT NIGHT. THEY INVOLVED FOUR DIFFERENT TYPES OF AIRCRAFT CONDUCTING FIVE DIFFERENT MISSIONS. THEY REPRESENTED FIVE UNITS AND FOUR MACOMS IN ALL PARTS OF THE WORLD. BUT DESPITE ALL THE DIFFERENCES, THERE WERE SEVERAL COMMONALITIES:

- THREE WERE INVOLVED IN MULTISHIP OPERATIONS; TWO INVOLVED MIDAIR COLLISIONS.
- THREE WERE EITHER RL-TRAINING OR PILOT-ASSESSMENT MISSIONS. IT APPEARS THAT THE IPS WERE WORK SATURATED. THIS AFFECTED SITUATIONAL AWARENESS, RESULTING IN IMPACT WITH ANOTHER AIRCRAFT, THE GROUND, OR TREES.
- ALL FIVE INVOLVED CREW-COORDINATION ISSUES. CLEAR DELINEATION OF CREW DUTIES, MAINTAINING AIRCRAFT CONTROL IN A HIGH-TASK SITUATION, AND MAINTAINING AIRCRAFT SEPARATION WERE PREVAILING THEMES IN THE FIVE ACCIDENTS.
- TWO WERE LIVE-FIRE OPERATIONS. ONE OF THE TWO REPRESENTS A COMPLEX SCENARIO WHERE MULTISHIP, LIVE-FIRE, IP CONDUCTING TRAINING, AND CREW COORDINATION PROBLEMS WERE ALL PRESENT.
- ALL FIVE OCCURRED IN HIGH-OPTEMPO UNITS.



- **TOTAL ARMY ACCIDENTS.** THE FY 96 RATE OF 4.22 ACCIDENTS PER 1,000 SOLDIERS IS 15 PERCENT LOWER THAN THE PREVIOUS RECORD-LOW RATE OF 4.98 SET IN FY 95.
- **CLASS A-C GROUND ACCIDENTS.** THE FY 96 RATE OF 4.02 ACCIDENTS PER 1,000 SOLDIERS IS 16 PERCENT BELOW LAST YEAR'S RECORD-SETTING LOW OF 4.79.
- **PERSONNEL-INJURY ACCIDENTS.** THE FY 96 RATE FOR CLASS A THROUGH C PERSONNEL-INJURY ACCIDENTS IS 2.51 PER 1,000 SOLDIERS, AN 18-PERCENT REDUCTION FROM THE PREVIOUS LOW OF 3.05 SET IN FY 95.
- **CIVILIAN LOST-TIME CLAIMS.** THIS RATE IS DOWN TO A NEW LOW OF 22.83 CLAIMS PER 1,000 EMPLOYEES, WHICH IS 2 PERCENT BELOW THE PREVIOUS RECORD LOW OF 23.29 SET IN FY 88.
- **CLASS A FLIGHT ACCIDENTS.** THE FY 96 RATE OF 0.65 PER 100,000 FLYING HOURS IS DOWN 22 PERCENT FROM THE RECORD-SETTING LOW OF 0.83 IN FY 95.

The Bad News

193 fatalities

POV ACCIDENTS ACCOUNTED FOR 130, OR 67 PERCENT OF ALL FATALITIES DURING FY 96. THE AVIATION COMMUNITY LOST 7 OF ITS MEMBERS IN POV ACCIDENTS.

$201 million

AVIATION ACCOUNTED FOR $122 MILLION, OR 61 PERCENT, OF THE TOTAL COST OF ACCIDENTS IN FY 96.

It's not a pretty picture

FOOD for THOUGHT

ARE YOU AS AN AVIATION CREWMEMBER LESS LIKELY THAN OTHER SOLDIERS OF YOUR SAME AGE AND GRADE TO BE INVOLVED IN A POV ACCIDENT BECAUSE YOU'RE MORE RELIABLE, MORE DISCIPLINED, AND MORE MATURE?

OR ARE YOUR CHANCES OF A POV ACCIDENT ACTUALLY HIGHER THAN AVERAGE BECAUSE YOU'RE AN AVIATION CREWMEMBER?

MAYBE THE FACT THAT THE ARMY TRUSTS YOU WITH RESPONSIBILITY FOR HIGH-COST HELICOPTERS AND PRICELESS PEOPLE MAKES YOU TAKE SEEMINGLY LESSER RESPONSIBILITIES FOR GRANTED.

MAYBE THAT CAR OR TRUCK OR MOTORCYCLE DOESN'T SEEM LIKE TOO BIG A DEAL WHEN YOU'VE JUST CRAWLED OUT OF AN APACHE OR A CHINOOK OR A BLACK HAWK.

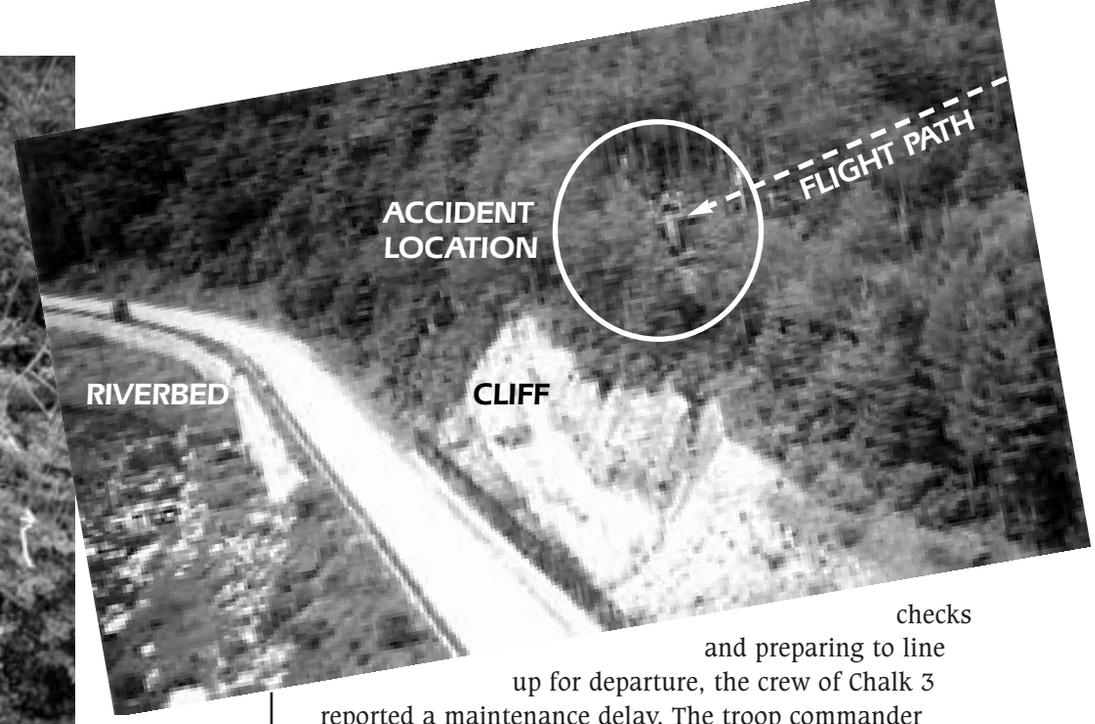
BUT, STATISTICALLY SPEAKING, THAT HELICOPTER'S NOT WHAT'S GOING TO GET YOU KILLED. YOU'RE MUCH MORE LIKELY TO DIE IN YOUR POV.

THAT BEING THE CASE, WHY ARE WE SO INTO APPLYING RISK MANAGEMENT IN THE COCKPIT BUT NOT IN THE CAR?

WE OUGHT TO THINK ABOUT IT.

POV ACCIDENTS REMAIN THE NUMBER-ONE KILLER OF SOLDIERS: 130 OF THE 193 SOLDIERS WHO DIED IN ACCIDENTS IN FY 96 WERE KILLED IN CAR AND TRUCK AND MOTORCYCLE ACCIDENTS. SPEED WAS A FACTOR IN MOST OF THE ACCIDENTS, AND FATIGUE FIGURED INTO MANY OF THEM. FAILURE TO USE SEATBELTS IS STILL A HUGE CONTRIBUTOR TO DEATHS AND INJURIES IN POV ACCIDENTS DESPITE THE FACT THAT SEATBELT USE HAS BEEN REQUIRED FOR YEARS, NOT JUST BY ARMY REGULATIONS BUT BY LAWS IN ALL 50 STATES.

THE ARMY SAFETY CENTER HAS DEVELOPED A NEW RISK-MANAGEMENT TOOL THAT CAN BE USED AT UNIT LEVEL TO ATTACK THE POV PROBLEM. THE AUTOMATED RISK ASSESSMENT AND CONTROLS (ARAC) PROGRAM FOR POVS WAS DESIGNED TO ENABLE INDIVIDUAL SOLDIERS TO ESTIMATE THEIR OWN RISK OF HAVING A POV ACCIDENT AND HELP THEM CHOOSE CONTROLS THAT WILL LOWER THAT RISK. THE ARAC PROGRAM WILL BE DISTRIBUTED TO UNITS ARMYWIDE THIS MONTH. FOR MORE INFORMATION, CHECK WITH YOUR LOCAL INSTALLATION SAFETY OFFICE; IF THEY CAN'T HELP YOU, CALL MS. MARY ANN THOMPSON AT THE ARMY SAFETY CENTER, DSN 558-3842 (334-255-3842).



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

AH-64A. The aircraft was Chalk 3 in a three-ship, night system (NS), nap-of-the-earth training flight that included bounding overwatch training. Chalk 3 was providing overwatch from the trail position while Chalks 1 and 2 bounded forward through a narrow river valley. While crossing a ridge line at a 45-degree angle, Chalk 3's main rotor blades struck a tree that was located upslope and to the right of the aircraft. The Apache came to rest upright but received major damage to the rotor systems, tail boom, and underside of the fuselage. Both the pilot and copilot-gunner sustained superficial injuries.

● ***What happened.*** The mission had been fully briefed, and a full-force rehearsal had been conducted during the afternoon. As the crews were completing communication checks and preparing to line up for departure, the crew of Chalk 3 reported a maintenance delay. The troop commander decided to depart with two aircraft to conduct a day recon of the NOE route. The delayed aircraft would join the flight at the release point of the NOE route. After completing the maintenance required, the crew joined the flight as Chalk 3 (trail). At a predesignated point on the NOE route, the troop commander directed the flight to begin bounding overwatch. Chalk 1 established an overwatch position, and Chalk 2 bounded around the right side of Chalk 1 and forward along the river valley. During this time, Chalk 3 was moving forward to establish a cover position behind Chalk 1. As Chalk 3 was crossing a ridge line in preparation for moving forward with Chalk 1, the crews' attention was focused on Chalk 1, which was in a stabilized hover to the left front and downslope from Chalk 3. While moving forward at about 2 KIAS, Chalk 3's main rotor blades contacted a tree located to the right front and upslope from the aircraft. As the main rotors began to disintegrate due to tree strikes, the aircraft settled into the trees. During the descent, the aircraft turned 45 degrees to the right and drifted rearward approximately 30 feet. It came to rest upright with major damage to the main and tail rotors, the tail boom, the underside of the fuselage, and the cockpit area. Both pilots received only superficial injuries and were able to complete emergency shutdown and exit without assistance.

● ***Lessons learned.*** Lack of situational awareness played a major part in this accident, as did the proficiency (not to be confused with *currency*) of the pilot on the controls. While extensive briefings and rehearsals were conducted regarding the actions of each crew in the formation, crew coordination within Chalk 3 was extremely limited. Even though not battle rostered, the crew had flown several missions together and were confident that each knew his responsibilities during the flight. At that critical moment when they were closest to the obstacles

along the ridge, the attention of both pilots was focused to their left front, when the greatest danger at that time was to their right side.

Was the crew aware of the hazards that were along the ridge line; i.e., the trees located upslope from the aircraft? The investigation board determined that the crew probably never did see the tree that was struck first even though it was about 12 feet taller than the surrounding trees. This was partly due to the decreased FLIR capability that each crew reported during the flight. While conditions had not degraded to the point where the FLIR was unusable, each crew reported that conditions provided for less-than-average performance of the system. Therefore, it's likely that the tree they hit "blended" into the trees located behind it and upslope.

Crews must be aware that, when using AH-64 night systems, the "eye" is approximately 10 feet forward and 3 feet below where the pilot is seated. Therefore, as an object departs the pilot's "field of regard," it appears to have already passed by the crew station; in reality, it is just coming abeam of the pilot's position.

Even though the PC was *current* in all tasks to be performed during this mission, the question of *proficiency* came up. We all know that what is needed to be "proficient" in a skill varies from one individual to the next. In this case, the PC had flown only two NS training flights for a total of 4.5 hours in the 3 months preceding the accident. One flight had been 33 days earlier, and the other about 90 days before the accident. They had been neither multiship nor NOE.

Flight using any night vision system is a perishable skill. While one flight every 60 days (as per the ATM) is enough to maintain *currency,* more than that is required to maintain a high level of *proficiency.*

The unit had established a training program that required weekly multiship collective training with a minimum of three aircraft per mission. However, due to outside constraints that limited troop-training opportunities for the 90-day period prior to the accident, the troop was able to conduct only four of the scheduled training flights. The PC had been unable to participate in any of the four.

Aviation Axiom:

CURRENCY IS NOT PROFICIENCY

As training is curtailed or restricted, the largest deficit almost always will be felt at the troop or company level. For that reason, it is imperative that every reasonable effort be made to ensure that team- and troop/company-level training be accomplished as often as possible to ensure that pilots do not maintain only *currency* but also the highest level of *proficiency* possible. ❑

Accident briefs

Information based on *preliminary* reports of aircraft accidents

Aviation flight accidents

Utility

UH-1 Class C

V series - Crew noted drop in oil pressure during flight. Transmission seized as crew was preparing to land on runway, resulting in hard landing. Crosstube/skid assembly was damaged due to spreading. Aircraft will also undergo sudden-stoppage inspection.

UH-60 Class B

A series - At 20 feet agl after completing IFR approach, aircraft lost tail-rotor thrust. As crew attempted autorotation, aircraft struck ground and rolled onto its right side. No injuries.

A series - Aircraft struck light pole while ground taxiing into position for refueling. All four blades were damaged. No injuries.

UH-60 Class C

A series - Master warning panel low rotor light and audio came on during cruise flight. Rotor rpm increased during emergency autorotation and left turn toward a soccer field. At no time did rotor rpm appear to regain engine-driven power. During descent, generators dropped off line, causing loss of all cockpit indications. Aircraft sustained Class C damage as bottom of fuselage and tail section were dragged through small trees and shrubs before aircraft settled into a swampy area short of the soccer field.

K series - On short final, main rotor blades contacted two small trees. Crew heard a bang and felt a slight vibration but were unable to detect the cause. Aircraft landed at intended landing point and passengers disembarked. After takeoff, crew again felt minor vibration and performed precautionary landing.

L series - While at stable 30-foot hover during NVG FRIES mission, aircraft drifted right and contacted trees at edge of LZ. Postflight inspection revealed damage to three main rotor tip caps.

Attack

AH-1 Class C

S series - During NVG assessment with zero illumination under NOE flight conditions, aircraft tail rotor system contacted tree.

AH-1 Class E

F series - When IRCM switch was turned on for inflight check, aft fuel boost caution segment light came on. Light went out when IRCM was switched off. Aircraft returned to airfield and landed.

F series - When PC turned on alternator switch during runup, it did not come on line. Aircraft was shut down without incident. Inspection revealed faulty alternator control unit. Alternator control unit was replaced, and aircraft was released for flight.

F series - During runup at 100 percent N2, engine oil pressure indicated 70 psi. Crew shut down aircraft without incident. Maintenance replaced faulty engine oil transducer and released aircraft for flight.

F series - During runup, dc generator would not come on line. Maintenance replaced engine cut-out relay.

AH-64 Class C

A series - NVD shroud separated during cruise flight at night. Location unknown.

AH-64 Class E

A series - Oil psi nose gearbox #2 light came on during runup.

A series - Smoke from shaft-driven compressor entered cockpit during taxi. Crew heard grinding noise during shutdown. Smoke dissipated.

A series - Press-to-test for pilot caution warning panel failed to illuminate any segments.

A series - During cruise flight at 1000 feet agl, the CPG's ICS failed. He could receive but not transmit. Maintenance replaced ICS cord, which had developed a short.

A series - During terrain flight at night, chips main transmission and master caution lights came on. Aircraft was landed immediately with no further incident. Oil samples were taken; sample came back with instructions for a 5-hour flight and then a special oil sample. A week later, chips main transmission warning light came on again, this time at 5-foot hover. PC performed a precautionary landing, and aircraft was cleared for one-time flight to home base. Maintenance took oil sample and flushed transmission oil system. Oil sample came back good, and aircraft was cleared for flight.

A series - During NVS training, aircraft completed two roll-on landings without incident. Upon landing at home base, crew noticed that right main tire was flat. Inspection revealed that brake pistons were so dirty that the piston was not completely releasing the brake even though the brake handle was in. Caliper housing was cleaned and pistons were replaced.

A series - During formation flight, crew heard unusual intermittent noise coming from transmission bay area. Noise was accompanied by loss of ECS air pressure. Crew returned to airfield, where maintenance replaced shaft-driven compressor.

A series - During high-speed flight, primary hydraulic bypass light came on. Postflight inspection revealed hydraulic fluid around switch.

A series - Utility hydraulic bypass light illuminated in flight.

A series - Oil PSI nose gearbox No. 2 warning light came on at 80-foot OGE hover. Aircraft was landed without incident. Maintenance replaced No. 2 nose gearbox oil switch.

A series - TADS failed during engine start, and odor was detected in cockpit. TADS was turned off and odor went away.

A series - After ground runup, test pilot found two small dents about 3/8-inch long and 1/8-inch deep in the leading edge of one of the tail-rotor blades. They looked to have been caused by a bolt because thread markings were visible. Complete inspection found no bolts out of place or missing. Blade was replaced.

AH-64 Class F

A series - During low-level flight over water, crew heard rapid-fire noise from right side of aircraft. PIC checked his instruments and called out compressor stall. Torque and tgt were fluctuating on No. 2 engine. PIC reduced collective, but that did not correct the problem, so he retarded No. 2 power lever to idle. Stall then went away. Aircraft was turned back, and once over land PIC attempted to bring engine back on line. Engine began stalling again, and PIC immediately retarded engine to flight idle and left it there. Aircraft was flown to nearest airport with crash rescue, where crew completed single-engine roll-on landing without incident. Inspection revealed engine had FOD damage.

Observation

OH-6 Class B

J series - When aircraft landed to plowed field, skids settled into soil and main rotor blades contacted ground forward of main fuselage. Aircraft rolled onto left side.

OH-58 Class C

A series - After shutdown in parking area, rotors were coasting down. Civilian ground guide became impatient and directed a Canadian aircraft to hover to a parking spot behind the OH-58 before the blades stopped turning. Rotor wash caused the blades to flap and hit the tail boom. The blades had almost stopped turning, so damage to the aircraft and blades was minimal.

D series - Postflight inspection after NVG training mission revealed Class C damage to both tail-rotor blades. Cause undetermined.

OH-58 Class D

C series - IP initiated unannounced simulated forced landing while hovering at 5 knots and 3 feet agl. PI responded with abrupt control inputs, causing aircraft to touch down left skid first. Aircraft rocked forward onto skid toes, then landed hard on right skid. Aircraft then bounced forward 3 feet and to the right 1½ feet, where it came to rest. Aircraft sustained damage associated with spike knock. K-flex drive shaft, landing gear, and pylon fairing were also damaged.

C series - After unmasking vertically to about 40 feet, aircraft entered descending right turn. When pilot increased collective to slow descent, torque reached 120 percent. Aircraft landed without further incident.

OH-58 Class E

A series - During engine start, N1 needle began spinning counterclockwise. Gas producer tachometer indicator was replaced and aircraft released for flight.

A series - Engine compressor stalled when collective was reduced after HIT check. TOT climbed to 750°C. Stall continued until emergency shutdown was completed. Maintenance replaced fuel nozzle, and aircraft was released for flight.

A series - Low rpm warning sounded momentarily during cruise at 500 feet agl. All engine and rotor systems appeared to be operating normally. Two additional momentary rpm audio and warning light illuminations occurred during the 2 minutes it took to make a precautionary landing.

A series - Pilot dual tach needles split during traffic pattern flight. Aircraft was landed immediately.

A series - After aircraft was picked up and hovered 10 feet, high-pitched noise came from engine area. TOT increased to 910° and remained there for 10 seconds. Pilot landed and reduced throttle. Once throttle was reduced to flight idle, TOT stabilized at 700° through normal shutdown.

C series - During descending right turn from 300 to 100 feet agl during NVG mission, power was applied to stop descent. Aircraft continued to descend at 100-percent torque. Torque went to 109 percent for 1½ seconds. Aircraft was landed without incident.

C series - During climbout from FARP, PI overtorqued aircraft. PC noticed overtorque, transferred flight controls, and immediately reduced collective to bring torquemeter within normal limits. Aircraft was landed without incident, and maintenance inspection revealed no damage.

D series - Inverter-failure message appeared during hover taxi for takeoff. Cannon plug was found loose. Plug was tightened and aircraft released for flight.

D series - Hydraulics failed during runup, and aircraft was shut down. Maintenance replaced hydraulics pump, which was discharging internally with pump gears, and released aircraft for flight.

Training

TH-67 Class C

A series - During clearing turn before takeoff, left turn could not be arrested with full right pedal. IP took controls, entered autorotation, and touched down with low NR, resulting in spike knock and collapse of tail boom.

TH-67 Class E

A series - Generator was inoperative during engine start. Voltage regulator was replaced.

A series - Fuel pump caution light stayed on during runup. Fuel boost pump was replaced.

A series - Rotor tach failed during engine start. Maintenance replaced dual tachometer indicator.

Cargo

CH-47 Class D

D series - During PMD, flight engineer found extensive damage about 15 feet inboard on aft rotor blades. Aircraft had been on a mission the day before to move a damaged footbridge in a state park. Probable tree strike.

CH-47 Class E

D series - Hydraulic caution light came on during cruise flight, and crew made precautionary landing. Postflight inspection found fluid loss. Fitting was tightened, and aircraft was released for flight.

D series - At 35-foot hover with zero forward airspeed during NVG external load operations, crew was attempting to lift 17,000-pound training load. When load was about 5 feet off the ground, center cargo hook released, dropping load. Inspection revealed minor damage to center cargo hook. Locking cams were corroded and not properly seated.

D series - During approach to landing, transmission hot light came on and temperature read 145°C. Engine was shut down and aircraft landed. Combining transmission was replaced.

D series - No. 2 advanced flight control system (AFCS) was making circular oscillation into flight control during cruise flight. System was turned off and aircraft returned to base. AFCS computer was replaced.

D series - During pinnacle approach with external load, crew noticed smoke in cockpit. Load was set down, and aircraft was landed and shut down without further incident. Maintenance inspection revealed that forward transmission had failed. Transmission was replaced.

D series - No. 2 flight control caution light came on in cruise flight, with zero hydraulic pressure reading on maintenance panel. Aft swiveling actuator was replaced, and aircraft returned to service.

D series - Crew chief saw hydraulic fluid leaking from aft transmission area during shutdown. Postflight inspection revealed sheared bolt on No. 2 hydraulic pump. Hydraulic pump was replaced.

D series - Forward green blade pitch variable housing lost all fluids while aircraft was on ground. Maintenance replaced seal parts.

D series - Extended-range fuel system tank was leaking fuel. Internal tank was replaced.

D series - Rated student pilot was performing emergency engine trim system check during runup when No. 2 engine failed. During subsequent shutdown, when No. 1 ECL was placed to ground, N1 stabilized at 40 percent and PTIT increased rapidly and reached 1000° for 2 seconds. No. 1 engine was replaced.

D series - Forward longitudinal cyclic trim actuator would not program automatically in flight. Actuator was replaced, and aircraft was released after test flight.

D series - Forward transmission chip detector caution light came on at 1000 feet and 120 knots. Caution panel would not reset, and aircraft landed in a river bed. Forward transmission was replaced.

D series - Forward longitudinal cyclic trim actuator failed to extend on landing. Cyclic trim switch was placed to manual, but manual circuit breaker popped any time forward switch was placed to extend position. LCT actuator was replaced.

Fixed wing

UV-20 Class D

A series - During takeoff for parachute operations, gusty winds caused aircraft to make sudden turn and leave runway. Aircraft traveled 750 feet over rough terrain, made a sharp 270-degree right turn, and came to rest about 75 feet from the runway. Operation of tail wheel over extremely rough terrain caused damage to aft section of fuselage.

C-12 Class E

C series - During climbout, No. 1 engine fire light came on. There were no visual indications of fire, and engine instrument readings were normal. Crew elected to return to airfield. En route, light went out. Aircraft landed without incident and was released for one-time flight back to home base. Maintenance could not duplicate.

C series - On landing, PIC noticed rough vibration. After rollout from landing, he feathered engines and PI exited aircraft and confirmed two flat tires on left main landing gear.

C series - During runup check, power levers were advanced to 1950 rpm for the overspeed governor check. Pilot noticed No. 2 engine oil pressure exceeding limits and immediately retarded power levels to idle. No. 2 engine oil pressure reached 160 psi for 5 seconds. Aircraft was taxied to ramp and shut down without incident. Engine oil pressure valve was replaced.

D series - During taxi, crew detected smoke and fumes in cockpit and noticed left main tank fuel quantity low. Mission was aborted. Caused by failure of fuel check valve and forward vent blower motor.

D series - During takeoff, landing gear would not retract. Right hand gear safety switch was replaced.

D series - Immediately after takeoff, No. 1 fire handle illuminated. Aircraft landed without incident. Postflight revealed no indication of fire. Maintenance inspection revealed fire warning system detector had failed; it was replaced and aircraft was released for flight.

D series - During fuel pump crossfeed operation check, No. 2 firewall shutoff valve switch did not operate. Switch was replaced.

D series - Right bleed-air-off warning light came on, and aircraft landed. Right bleed air pressure switch was replaced.

D series - Right bleed-air-off warning light came on, and aircraft landed. Leaking polyflow tubing was replaced.

D series - During gear retraction after takeoff, gear hung momentarily (2-3 seconds) halfway through cycle, then completed the cycle normally. Caused by failure of gear handle selector switch.

D series - No. 1 engine fire light came on in cruise flight. Caused by faulty fire detector.

N series - On downwind leg of traffic pattern, PC noted unsafe landing gear indication. After tower personnel confirmed that gear was not down, PC manually extended gear and landed without incident. Cause is under investigation.

C-23 Class E

B series - Copilot's attitude indicator gyro failed in cruise flight.

O-5 Class E

B series - During runup, mechanic noted fuel leak in No. 4 engine area. Fuel control unit was replaced.

B series - During taxi for takeoff, roll spoilers failed to extend in ground mode. Maintenance inspection revealed moisture in cannon plug connection to nose gear limit switch. Plug was dried out and sealed.

B series - Upon gear retraction after takeoff, right main gear light indicated gear down. Flight attendant in cabin confirmed gear had retracted. On final approach at destination, gear extended normally and landing was uneventful. Maintenance inspection revealed corrosion on connector pins in cannon plug on proximity switch.

B series - Hydraulic leak was discovered during postflight. Maintenance inspection revealed fatigue crack at union of hydraulic line to center section of ground spoiler. Line was repaired, MOC completed, and aircraft released for flight.

OV-1 Class E

D series - When pilot placed landing-gear handle in up position after takeoff, he didn't hear gear retracting and saw transient indication in gear handle. After several unsuccessful attempts to retract gear, he placed gear handle in down position. With landing gear indicating down and locked, he landed at home base without incident. Maintenance replaced check valve leading to selector valve and released aircraft for flight.

D series - After normal start of No. 2 engine, crew chief (fireguard) repositioned for No. 1 engine start when he saw hydraulic fluid leaking from left wing. He signaled to pilot to shut down aircraft, and leak was isolated and contained. Maintenance inspection revealed ruptured hydraulic (flexible) line. Line was replaced, hydraulic system was serviced, and aircraft was returned to service.

Safety messages

Aviation safety action messages

■ Aviation safety action maintenance mandatory message concerning one-time inspection of tail drive flexible coupling connections on all UH-60A/EH-60A/UH-60L/MH-60K aircraft (UH-60-97-ASAM-02, 231535Z Oct 96). Summary: A Black Hawk experienced loss of tail-rotor drive due to failure of the section-one tail drive shaft, which had been incorrectly attached directly to the main transmission tail takeoff flange. The purpose of this message is to require one-time inspection of all tail rotor drive shaft flexible coupling connections and to correct erroneous reference in the manual. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

■ Aviation safety action maintenance mandatory message concerning replacement of undamped gas generator (GG) rotor/stator assemblies on all UH-60A and EH-60A aircraft with T700-GE-700 engines (UH-60-97-ASAM-03, 251455Z Oct 96). Summary: ATCOM and the Utility Helicopters PMO have been directed to change out all undamped GG rotor/stator assemblies installed in T700-GE-700 engines. The changeout will be done on site by a GE field team. The purpose of this message is to identify remaining assemblies. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

■ Aviation safety action informational message concerning all Army aircraft utilizing AN/AVS-7 system (GEN-97-ASAM-01, 251502Z Oct 96). Summary: The navigation symbology displayed in the AN/AVS-7 system does not function properly when connected to the ASN-128B doppler/GPS system. The purpose of this message is to inform users of certain functions they should deselect. Contact: Mr. Jim Wilkins, DSN 693-2258 (314-263-2258).

Maintenance information messages

■ Aviation maintenance information message concerning standardization and control of industrial-quality tools (GEN-MIM-97-001, 151341Z Oct 96). Summary: The majority of tools in the new aviation tool set (NATS) have either a lifetime or extended commercial warranty. The purpose of this MIM is to ensure that soldiers in the field are aware of the warranty program. Contact: Mr. Dick Mooy, DSN 693-9315 (314-263-9315).

■ Aviation maintenance information message concerning replacement of nitrogen inerting unit (NIU) check valve with a poppet valve (AH-64A/D-MIM-97-001, 161901Z Oct 96). Summary: Due to approximate 5-degree tail-down attitude of subject aircraft when parked, fuel will leak through the "gate style" check valve and contaminate the NIU. The purpose of this MIM is to recommend installation of new "poppet" style check valve. Contact: Mr. Kenneth Muzzo, DSN 490-2257 (314-260-2257).

■ Aviation maintenance information message concerning APU fuel solenoid valve on AH-64 helicopters (AH-64-MIM-97-002, 311623Z Oct 96). Summary: A discrepant APU solenoid valve will allow fuel to escape and be ignited by either the hot power turbine plenum or a flashback (APU backfire). The purpose of this MIM is to modify inspection procedures to confirm proper assembly of APU solenoid valve. Contact: Mr. Ken Muzzo, DSN 490-2257 (314-260-2257).

For more information on selected accident briefs, call DSN 558-2785 (334-255-2785).

ShortFAX

Keeping you up to date

Height-velocity-avoid region

The dual-engine UH-60 brought a safety margin to utility-helicopter operations that wasn't possible with single-engine aircraft. However, as mission demands expand and new equipment is added, Black Hawks frequently operate at higher gross weights than in the past.

UH-60 crews should be aware that operating in height-velocity-avoid regions can be hazardous to them, too, if one engine becomes inoperative.

Avoid regions vary based on gross weight and atmospheric conditions. Pilots should review the information in the operator's manual on the height-velocity-avoid regions for single-engine failure and avoid flying in these danger zones as much as possible.

POC: Mr. Michael Lupo, Utility Helicopter PM Office, ATCOM, DSN 693-0475 (314-263-0475)

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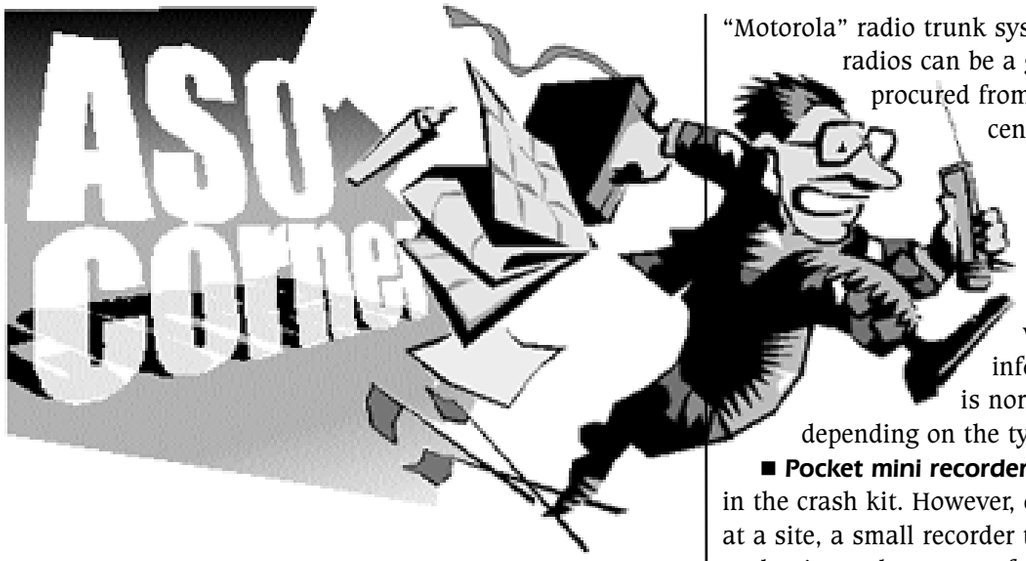

Where's the crash kit?

How many of you ASOs have had the opportunity to be the first respondent in an aircraft crash scenario? If your experiences have been like mine, you are notified of a situation and have time only to throw your crash kit and maybe a coat together before boarding an awaiting aircraft for transport to the site. Sound familiar?

The last time it happened to me, I was returning to my office when the standards officer got my attention and suggested I might want to check with base operations. Being in the same building, I immediately did an about-face and went to base ops. There, the dispatcher informed me of having just received a report of an aircraft accident about 12 miles north of our airfield.

Base ops immediately activated the crash-alarm and made arrangements for the medevac standby aircraft to transport the flight surgeon, the commanding general, and me to the site. After dropping us off, it returned to home station to pick up security personnel.

The accident site was spread over quite a large area. It was at this time that it was reinforced to me that our issued standard Army crash-investigation kit is severely lacking in many areas. Upon my return, I augmented my crash kit with the following items:

■ **Polaroid camera.** Although the crash kit contains a standard 35mm camera, instant pictures can greatly assist if portions of the accident site must be disturbed before the investigation team arrives. The Polaroid Spectra SE is a great quality camera that costs about $110.

■ **Engineer flags.** These are wire stakes with a 4x5-inch flag on one end. The flags come in a variety of colors and are sold in bundles of 100 for about $20. They're available through any engineering supply store.

■ **Hand-held radio.** Most installations have a "Motorola" radio trunk system, and having one of the radios can be a great help. They usually can be procured from the installation information center.

■ **Cell phone.** With today's technology, cell phones are relatively inexpensive and are of vital importance at a crash site. There is no better way of keeping your command informed or to make requests. Cost is normally $10 to $25 per month, depending on the type phone service ordered.

■ **Pocket mini recorder.** A large cassette recorder comes in the crash kit. However, quality is severely lacking. Also, at a site, a small recorder that can be carried in your pocket is much more useful than the larger, shoulder-carried standard recorder. Mini recorders can be purchased locally for about $30.

■ **Space blankets.** These can be used for a variety of needs. The most important is to cover sensitive areas of the crash site. These blankets normally can be obtained from local aviation life-support equipment (ALSE) shops.

■ **Surgical gloves.** These are important for the retrieval of items in and around a crash site. They can be obtained from the local dispensary or hospital. One box of 50 should be ample.

■ **Global positioning system.** The exact location of the site is extremely important, and a GPS is a great tool in "mapping" the crash area. Normally, they're available through supply channels (AN/PSN-11 Navigational Set, Satellite Signals, NSN 5825-01-374-6643).

I have all this equipment broken down into three units. First, I have the basic crash kit with the standard contents. Next, I have a wooden box that contains my engineer flags, space blankets, engineer tape, reflectorized tape, clipboard, paper, specimen bags, pens/markers/pencils, and extra batteries. Last, I have a large briefcase (pubs bag) that houses the cameras, tape measure, GPS, telephone, radio, compass, flashlights, and maps. In this way, the items that are most important initially are in my briefcase; the other items can comfortably follow me.

When you approach your commander with this laundry list of additional and costly items, he or she will probably tell you that everything is available within the installation. That's true. However, in an actual situation, you won't have time to assemble all the above items and make it to the crash site in a timely manner. In addition, most ASOs will find most of these items invaluable on a day to day basis.

Unfortunately when the crash alarm goes off, there's no time for planning. All of this must be done ahead of time.

—CW4 Andrew E. Sickler, Installation Aviation Safety Officer, Fort Benning, GA, DSN 835-2425 (706-545-2425)

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		96	97	96	97
1ST QTR	October	1	0	0	0
	November	0		0	
	December	0		0	
2D QTR	January	1		0	
	February	0		0	
	March	2		7	
3D QTR	April	1		3	
	May	0		0	
	June	1		6	
4TH QTR	July	0		0	
	August	0		0	
	September	1		0	
	TOTAL	7	0	16	0

U.S. ARMY SAFETY CENTER

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