Flightfax
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Tree strikes, you're out!

The poem entitled "*The Tree*," by Joyce Kilmer, describes the beauty of a tree. However, if you're an Army helicopter pilot who spends time flying amongst these gentle giants, you may have a different opinion about trees. According to Army accident data, trees are the number-one hazard to Army helicopters. In the past 5 years, tree strikes by OH-58D, AH-64, and UH-60 aircraft have killed 9 crewmembers, seriously injured 20 others, and destroyed or damaged a lot of helicopters (table 1).

The data might suggest that a tree can knock a helicopter out of the sky just about as quickly as any air defense system any country can develop. But why? Why are Army helicopters hitting trees? Are we pilots being properly trained to operate around trees? Is there a common thread among the different types of aircraft involved in tree strikes? There are plenty of questions, but are there any answers?

Tree strikes, you're out!

A BIT OF PERSONAL BACKGROUND

Back in 1972 (and some of you go back that far, too!), my unit went to Camp Attaberry, IN, for a field training exercise. During one part of our training, we were told to fly our OH-58A real low and close to the trees—they called it "nap-of-the-earth" (NOE) flying. Now, back in 1972 this was all new to us young aviators. There were no Aircrew Training Manuals (ATMs) with tasks, conditions, and standards to look at. We had no aircrew coordination training program to go through prior to NOE flight. Mission-briefing sheets, risk assessments, and risk management had not yet been thought of. Night-vision devices (NVDs) were still in the development stages. There were no visual simulators in which to practice NOE techniques. The only resource we had available at the time was the guys returning from Vietnam—guys who had a lot of experience flying the only way they knew to survive to fly another day.

But I digress.

We were told to "fly NOE, as close to the vegetation as possible. And, oh by the way, if you have a blade strike, you're more or less on your own."

I didn't have a problem with the first part; as a matter of fact, I really enjoyed seeing how low I could get, how close to the trees. That was the fun part. What I had a problem with was the "if you have a blade strike, you're on your own" part.

The fun lasted all of a half a day before my main-rotor blades hit a tree, damaging a rotor blade. It wasn't bad, but it was bad enough that a maintenance pilot had to evacuate the aircraft back to Fort Knox. We (WO1 and 1LT) had been using all of our ability and experience to keep our aircraft out of the trees, but with only 500 hours between us, it wasn't enough. We had failed. More to the point, ***I*** had failed; I had allowed the main-rotor blades to strike a tree during our NOE flight.

Looking back, I've come to realize that neither of us had been properly trained on NOE flight techniques nor the hazards associated with NOE flight.

MISSION

In today's helicopter world, survival is the number-one priority—especially for Army pilots. The world has developed many different ways of knocking a helicopter out of the sky, and, with the chance of combat ever looming on the horizon, it behooves pilots to train to keep their aircraft as close to vegetation as possible. That's how today's Army helicopter pilots are trained; NOE flight is a way of life for most of us. We train at it day and night.

Missions we once considered to be high risk, such as NOE flight, we now consider routine. However, if we really think about it, ***are*** they "routine"? Are we pilots so used to flying NOE that we've gotten too comfortable with our surroundings?

TRAINING

Today's new Army pilots undergo thorough terrain-flight training in flight school, including nap-of-the-earth, low level, and contour flight. They learn the hazards to terrain flight, including trees. There are ATMs with tasks, conditions, and standards that pilots are evaluated against. After leaving flight school, helicopter pilots are evaluated each year during their APART on their ability to operate their aircraft amongst the trees. They're evaluated not only during the day, but also at night using NVDs.

Today's pilots are required to go through formal crew-coordination training. They're also taught about spatial disorientation, relative motion, depth perception, and visual illusions. Risk management is now the tip of the spear in mission planning and training; we have mission-briefing and risk-assessment sheets that are being used by every unit for detailed planning.

So, why so many tree strikes?

ATTITUDE

I've heard it all in my 27 years in Army aviation.

"Tree strikes are the price of doing business."

"The next tree strike will cost the pilot 2 months' base pay."

Do either of the attitudes

Table 1. Tree strikes (FY94 - FY98)

Type aircraft	Class A	Class B	Class C	Class D	Class E	Fatalities	Disabling injuries
OH-58D	4	1	7	6	1	1	5
AH-64	5	1	14	1	6	0	4
UH-60	1	2	21	33	15	8	11
Total	10	4	42	40	22	9	20

reflected in these statements help prevent tree strikes in the Army? As a pilot who suffered a tree strike early in his career, I can tell you that neither of these statements made me feel any better. But I was fortunate that the only thing that got hurt that day was my pride; not everyone was as lucky as I was.

Most of the line pilots I've talked to in the past few years have a very good attitude about their job and really enjoy flying. They're eager to learn and willing to perform any mission. In talking with them, the one thing that almost always comes out is that they have become very comfortable flying NOE, especially during NVG NOE. Maybe they've become ***too*** comfortable. A common attitude I see is this one: "I've flown this mission a hundred times and never hit a tree." This can lead to our flying on ***attitude*** rather than ***ability***, which can result in an accident.

PROFICIENCY

Depending on what type of aircraft you fly, you could spend almost all of your flight time NOE. That's a lot of exposure to trees and a lot of potential for a tree strike.

In looking at tree strikes while preparing to write this article, I noticed some common threads. I saw tree strike after tree strike with IPs on board, especially in the OH-58D. In fact, one Class A involved ***two*** IPs with more than 7000 hours between them. That's a lot of experience in the cockpit.

We know that, because of money constraints and reduced flying hours, pilots are not getting as many flight hours as we once did. The thing is that flight hours don't always reflect the level of a pilot's proficiency. Ask pilots about the amount of flight time they're getting and the quality of their individual proficiency. You'll find that some pilots feel that they're only maintaining currency rather than building proficiency, especially in the NVG arena.

So, if proficiency is based on experience, and pilots are not flying a lot of hours, what happens to proficiency? One would think it would go down. On the other hand, a look at the tree-strike numbers shows that pilots were having a lot of tree strikes even when hours and money were plentiful. So, what's the problem?

CAPABILITIES

In the latest generation of helicopters, technology has placed in our hands very capable machines. These aircraft can fly faster—except for the OH-58D—see farther, engage targets at longer ranges, and navigate using internal navigation systems. These aircraft can also just about fly themselves. So where do pilots fit in?

As an OH-58D pilot, I find that the technology keeps me busy. In other words, I have my hands full when operating all the systems in the aircraft. There have been times that I've become so involved in operating an aircraft system that I'd forget to fly the aircraft. That's called ***loss of situational awareness.*** There have also been times that I have become so focused on what the other pilot was doing or on imparting some instruction or other that I'd forget where I was—that is, until I looked up and found myself flying sideways at 30 knots, 6 inches above the ground, under NVGs.

My review of accidents while researching this article showed that I'm not the only pilot who's ever gotten involved with a system and lost situational awareness. The problem is that some of those other pilots were not as fortunate as I was and were involved in accidents.

The bottom line is, we pilots have to remember not to let aircraft systems overwhelm and overload our own capabilities.

A LOOK AT THE ACCIDENTS

A review of OH-58D, AH-64, and UH-60 accident data produced some interesting insights.

- More OH-58D tree strikes occurred during night-vision-system (NVS) operations than during day flights. However, don't think that we had tree strikes only under NVS. The majority of UH-60 tree strikes occurred during the day.
- About 75 percent of OH-58D tree strikes involved the tail rotor. Most of these mishaps occurred at an OGE hover during a weapon engagement, with an IP on board, and flying aided. Either a descent or an undetected drift to the rear occurred prior to the mishap.
- A little more than a third of AH-64 tree strikes involved the main rotor system, followed by the fuselage, then the tail rotor. Most of them happened during OGE hover in a battle position and NOE flight.
- Most UH-60 tree strikes happened during confined-area takeoffs and landings. Main rotor tip caps suffered the most damage, followed by the fuselage, then the tail rotor.
- Brownout conditions contributed to a large number of UH-60 tree strikes during landings to confined areas.
- Of 60 UH-60 Class A-E mishaps reviewed, 20 involved NVGs. The other two-thirds took place during the day.

SOME CLOSING THOUGHTS

NOE flying is a tasked-saturated, demanding job. Our new pilots are receiving good training and building a firm foundation during flight school. We older pilots have to continue that good training by teaching them good habits once they arrive in our units.

Our attitude about flying NOE is going to have to change. We must begin taking NOE missions seriously again. NOE can be a high-risk mission, depending on the conditions, crew, and type aircraft flown. AH-64s alone have averaged nearly one Class A tree strike every year for the past 10 years. That's a lot of lost readiness.

And what about proficiency? I think that individual proficiency is suffering most due to today's reduced flight hours. Pilots have to become individually proficient in flying their aircraft. That's hard for all of us, but especially for UH-60 pilots—most of their missions involve multi-ship operations. It's hard to work on individual proficiency in a ten-ship air assault, under NVGs, with poor weather conditions. We have to give our aviators the time to become proficient, not only in mission tasks, but in individual tasks.

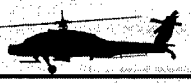
And, finally, let's talk about capabilities. Advanced technology is a good thing, but I believe that we can sometimes exceed the capabilities of our operators. I found this a lot in looking at OH-58D accident summaries. Oftentimes, the pilot became so involved in operating systems (task overload) that he lost situational awareness and allowed the aircraft to drift into the trees. In other words, the pilot became so involved with aircraft systems that he forgot to fly the aircraft.

The one thought I want to leave you with is that we—all of us—are only inches and seconds from an accident every time we're NOE. We must never forget that.

—CW5 Bill Ramsey, EUSA G-3 Aviation, ramseyw@usfk.korea.army.mil

Tree strikes: selected accident briefs

AH64

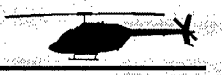


Class A
While crossing ridgeline as Chalk 3, main rotor blades contacted trees located to the right and upslope from aircraft. Aircraft descended to impact through the trees.

Class B
During an OGE hover, main-rotor blades struck tree. PC flew aircraft forward and landed in sparsely vegetated field.

Class C
During confined-area approach, aircraft developed immediate severe vibration. Approach was aborted and aircraft was flown to field 1.5 kilometers away. Damage to four main-rotor blades and one tail-rotor blade was found on postflight.

OH58



Class A
OH-58D(I) drifted rearward from stationary OGE hover as crew conducted hasty attack against OPFOR ground targets. Tail rotor contacted pine tree and then several other trees prior to ground impact.

Class B
OH-58D(I) was at 250 feet agl in OGE hover as crew conducted Airborne Target Handover System (ATHS) training. Both pilots transitioned their attention inside the aircraft for 10 to 15 seconds while completing task. Aircraft drifted rearward approximately 200 meters, resulting in tail rotor making contact with treetops.

Class C
IP was holding a stationary OGE hover under NVGs while pilot set up for simulated missile engagement. IP allowed aircraft to drift aft approximately 25 feet, and tail rotor contacted tree.

UH60

Class A
During NVG approach to dirt landing strip, pilot encountered brownout conditions. Aircraft drifted into trees, sustaining major damage.

Class B
During NVG multi-aircraft approach to extremely dusty landing zone, aircraft main rotor blade tip caps contacted tree. Flight terminated in hard landing.

Class C
On short final to LZ, main-rotor blades contacted two small trees. Main rotor blade tip caps were damaged.

HEY! FOUND A DEAD BIRD! NOW, WE CAN CALL IT A BIRD STRIKE!

MAJ Mark Robinson, Aviation Systems & Accident Investigation Division, DSN 558-1253 (334-255-1253), robinsom@safety-emh1.army.mil

6/9

T/R+Tree=Trouble

Lack of situational awareness
Undetected obstacles
Inadvertent drift
Spatial disorientation

Crew coordination
Scan

Scan

SCAN SOME MORE

Piece o' cake

What more could you ask for if they won't station you in Hawaii or Key West?

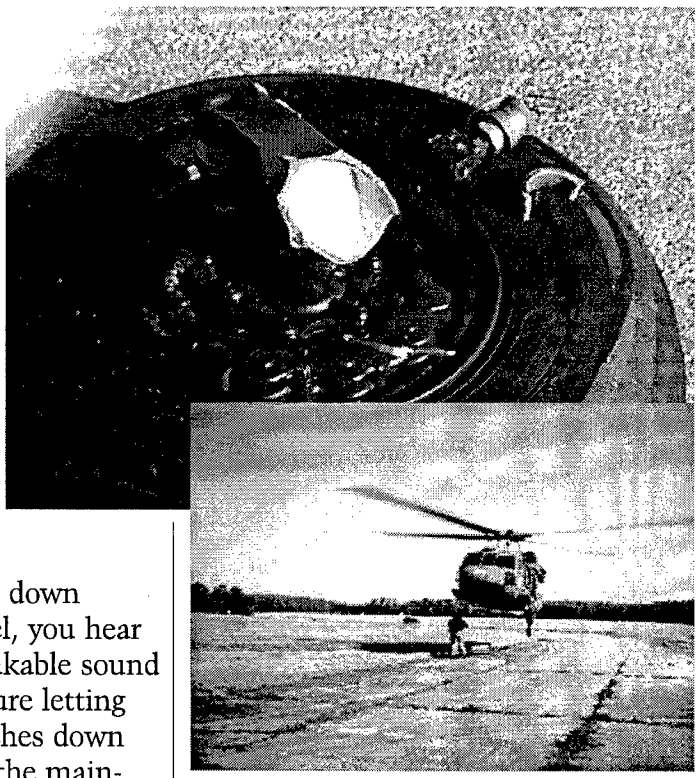
It's a beautiful fall day, "clear, blue, and 22" with light winds and no turbulence. Pick up the General and nine staffers at the headquarters helipad, fly a 35-minute hop to a conference site, lunch with the "Big Dog," 35 minutes back to the HQ pad, and you're mission complete. You're flying with one of best crews possible, in the fleet's newest Black Hawk. This bird is a 95-series UH-60L with less than 340 hours on the clock.

It's gonna be a piece o' cake.

The hairs on the back of your neck come to attention during ground taxi when the aircraft emits a deeply pitched moan accompanied by a mild shudder. You stop immediately; three heads swivel as one, their faces reflecting the same questioning look. In your best airline captain voice, you say: "Y'all feel that? Wellllll, she hasn't flown in a while; we'll just sit here for a moment—let her warm up and see what happens...."

Is this cake maybe a little stale?

All systems are normal, and she hovers as smooth as ever. There are no more moans or shudders, so off you go. The 5-minute leg to the HQ pad is smooth and uneventful. Noting the passengers in a tight group very close to the pad, you inform the crew that the approach will be to the ground. To avoid sandblasting the General, you tell them not to expect one of your softest touchdowns.



This turns out to be something of an understatement.

As the mains touch down following the tail wheel, you hear the sickening, unmistakable sound of a large metal structure letting go. The helicopter lurches down and to the right, with the main-rotor blades coming so close to the ground and the passengers that you instinctively hiss "OH SH--!"

Somehow you manage to return to a hover before the main rotor blades puree the approaching passengers. When asked if the right main tire has blown out, the crew chief informs you that the wheel is now lying on the pad with its severed drag beam and main strut end still attached.

I don't believe I'd care for any cake!

It doesn't take too long for you to decide that it might be prudent to leave the area before your mount sheds any more parts on the General's pad. You take off and inform the crew that you intend to return to home plate where there are, among other things, slopes to attempt landings, crash trucks, and, last but not least, friendly faces that belong to very competent people.

Thoughts are racing through your head during the short flight back to the airfield. How can the helicopter be landed with only one main without endangering the crew and without inflicting additional damage to the aircraft? You solicit input from the copilot and the crew chief after telling them you intend to land on a slope. You're concerned about two things, both centered on what remains of the right main strut: What will prevent it from pivoting about its upper mount, and how far will the strut sink into the sod on a slope? Either possibility could result in blade-ground contact with obvious consequences.

By now it's time to make initial contact with the tower; the copilot is instructed to declare an emergency and ask the control tower to position crash-rescue in the vicinity of the slope. While the ATC guys are digesting this request, the copilot informs flight operations of your status and intentions. Confirming that fuel remaining is about 2 hours, you're requested to hover in front of operations while key personnel come outside and take a look-see.

The crew chief passes the 50-

foot ICS cord through the gunner's window, enabling communications with ground personnel while hovering. The ground crew plans to assemble a platform consisting of C-5A loading ramps and a stack of bunk-bed mattresses.

It's time to shake those cake crumbs off your lap and think about the best way to land your one-legged mount.

As the photos show, this one had a happy ending. Chalk it up to teamwork and true crew coordination that extended to include the ground crew. Their efforts made a safe landing possible, saving a helicopter and its grateful crew.

—CW2 John Law, McEntire ANGS Eastover, SC ARNG, DSN 583-1821 (803-806-1821), lawjl@sc-arng.ngb.army.mil

"Bedded down" for the night.

Shortfax
Keeping you up to date

Coming soon: New crash-rescue video

The Army Safety Center has produced a video for use in training personnel, both military and civilian, who could potentially be involved in emergency response to Army helicopter accidents. *Army Aviation Crash Rescue* (PIN 709717, TVT 20-1038) explains how to shut down aircraft engines, fuel systems, and electrical systems and the proper and safe way to remove injured pilots and passengers from aircraft wreckage. The new video also identifies the kinds of weapons and ammunition that might be on board each type of Army aircraft, and explains how to "safe" such weapons before entering danger zones.

The video will be widely available at local audiovisual libraries by mid summer. It may also be ordered electronically through the Defense Automated Visual Information System (DAVIS) web page (http://dodimagery.afis.osd.mil).

POC: Mr. Tony Brown, Media & Marketing Division, DSN 558-2178 (334-255-2178), brownt@safety-emh1.army.mil

ALSE user conference coming up

The 1999 ALSE User's Conference will be held in Huntsville, Alabama, 2-4 November. Commanders, ALSE officers and technicians, and unit safety officers are invited.

If you plan to attend, please notify Mr. Bernard Roberson or CPT Andrew J. Doniec at Fort Rucker's Directorate of Combat Developments by 18 October.

POCs: Mr. Bernard Roberson, DSN 558-9130 (334-255-9130), robersonb2@rucker.army.mil; and CPT Andrew J. Doniec, DSN 558-9702 (334-255-9702), donieca@rucker.army.mil

FYI: Pubs update

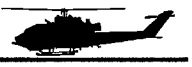
FM 20-151: *Aircraft Emergency Procedures Over Water*, which was referenced in the February 1999 *Flightfax*, is now obsolete. So is FM 20-150: *National Search and Rescue Manual*. These manuals have been replaced by Joint Pub 3-50: *National Search and Rescue Volume I—National Search and Rescue System* and Joint Pub 3-50.1: *National Search and Rescue Volume II—Planning Handbook*. Both publications may be downloaded from www.dtic.mil/doctrine/jel along with other joint combat search and rescue publications.

Thanks to SSG Doug Penovich, ALSE NCOIC, 1st-106th Aviation Regiment, IL ARNG, Peoria, IL, for this information.

Accident briefs

Information based on *preliminary* reports of aircraft accidents

AH1



Class E
F series

■ At completion of practice topping check and during descent at 150 knots and 15-percent torque, aircraft began uncommanded left roll. IP placed cyclic to right stop to arrest roll. Aircraft was slowed and roll SCAS channel was disengaged with no apparent effect. Right stop was reached twice more prior to landing. Maintenance could not duplicate problem.

AH64

Class A
A series

■ Aircraft struck tree and crashed. Both pilots escaped before postcrash fire caused explosion of onboard munitions. Investigation is under way.

Class C
A series

■ Damage to tail rotor was discovered during postflight maintenance inspection on the day following the last mission. All four tail-rotor blades required replacement.

Class E
A series

■ Fuel access panel was found to be missing on postflight. Aircraft had been fueled at tactical FARP.

■ During short final, crew smelled smoke coming through ENCU vents. Prior to landing, SDC caution light illuminated. Crew landed and performed emergency engine shutdown. Postflight revealed charred and smoking SDC. SDC was replaced.

■ While operating as lead aircraft in flight of three, PC felt a bump. Chalk 3 immediately called and reported that transmission left-side panel had separated from aircraft. Chalk 3 located panel on ground while damaged aircraft landed in nearby field and shut down without further incident. Panel was recovered by ground personnel, but it could not be reattached to aircraft.

■ No. 2 fuel pressure light came on during landing. Aircraft was taxied to parking and shut down. Caused by failure of engine-driven fuel pump.

■ With rotor brake engaged to stop rotor system during student change, oil low utility hydraulic caution light came on. Caused by leak in rotor brake caliper.

CH47

Class C
D series

■ Crew noted 35- to 40-percent split in torque readings during cruise flight. In-flight adjustments were unsuccessful, and aircraft was landed. With rotor rpm still set for flight, crew noted rapid increase to 115 percent but not more than 120 percent before engine condition levers could be reduced to ground idle. Suspect engine or transmission limitations could have been exceeded.

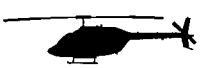
Class E
D series

■ During runup and before-takeoff checks, AFCS #1 light would not extinguish. Caused by failure of No. 1 vertical gyro.

■ During slingload operations, loud high-pitched whine was heard in forward transmission area, and unusual vibration was detected in vicinity of flight-control closet. Aircraft was landed and shut down without further incident. Caused by failure of No. 1 flight hydraulic pump.

■ No. 1 engine gearbox latch indicator activated during departure and could not be reset. PC turned aircraft around to land back at airfield; during short final, No. 1 engine transmission chip light came on. Maintenance inspection revealed metal chips on detector. Engine transmission was replaced and combining transmission was serviced.

OH58



Class B
C series

■ SP was on controls when IP noted rapid N1 increase at 550 feet and 60 KIAS during climb-out after takeoff. IP took controls and executed 180-degree turn for return to airfield. IP reported low rotor rpm indication during short final, and aircraft landed hard and rolled onto its left side. Aircraft sustained major damage to fuselage, main- and tail-rotor systems, and tail boom. Crewmembers were not injured.

Class C
C series

■ Postflight inspection following simulated antitorque malfunction maneuver revealed separation of left and right windshields at upper outside corners and crack in lower (Fiberglas) section of fuselage, forward of and below tail boom attaching points.

D(I) series

■ Aircraft landed hard during low-level autorotation. All four main-rotor blades were damaged beyond repair; forward crosstube was also damaged.

Class D
D series

■ During maintenance test flight at 55 KIAS and 1700 feet msl, test pilot rolled throttle down to perform autorotational rpm checks. During crosscheck, he saw Ng stabilized at 63.2 percent; 3 seconds later, engine flamed out. Pilot executed autorotational landing without incident.

Class E
A series

■ Fuel odor was detected during terrain flight, and aircraft was landed. Trace amount of fuel was found on external fuel tank on right side, forward of fuel cap. Shortly after continuing mission, fuel odor became stronger, and aircraft again landed when crew saw fuel leaking in back seat.

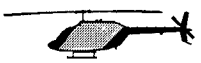
C series

■ During landing to unimproved surface during NVG training, crew experienced brownout condition just prior to touchdown. Aircraft rocked forward as it touched down, causing lower WSPS to contact ground. On postflight, breakaway tip was found missing and small cracks were found on lower wire cutter assembly. Assembly was replaced.

D series

■ Generator caution light and SCAS-disengaged light came on during downwind leg of traffic pattern. Pilot reset generator switch with no effect. At that point, cockpit filled with fumes. Suspecting electrical fire, IP performed power-on emergency landing. Caused by a.c. generator failure.

TH67



Class D
A series

■ During postflight, leading edge of tail rotor was found damaged due to missing drive shaft cover fastener. Fastener was replaced.

UH1

Class C
V series

■ Crew felt increasing lateral vibration at 500 feet agl and selected site for emergency landing. By the time aircraft had descended to 75 feet, engine rpm had bled to less than 4000. Aircraft contacted trees during landing, and crew performed emergency shutdown upon touchdown.

Class E
H series

■ During cruise flight on night IFR training mission in VMC conditions, duck struck aircraft's left windshield. Windshield broke and 14x12-inch piece of glass was thrown through cockpit and into passenger compartment. Duck remained outside aircraft and was struck by main-rotor blade after initial impact. No crewmember was injured, and aircraft damage was restricted to windshield.

■ Engine began smoking during hot refueling, and aircraft was shut down without incident. Caused by engine oil leak.

■ During touchdown on VMC approach to helipad, front crosstube broke. Aircraft was shut down without further incident. Inspection revealed damage to fuselage at station 23.0. Maintenance replaced crosstube and repaired fuselage damage.

V series

■ At 50 feet during terrain-flight takeoff over trees, low rpm audio and light activated. Noting engine rpm at 6000, IP took controls and executed descending right pedal turn to ground. Throttle was verified full on. Aircraft was shut down without incident. Maintenance could not duplicate underspeed condition.

UH60

Class A
L series

■ Aircraft crashed into trees, killing seven and injuring four occupants. Accident is under investigation.

Class B
A series

■ Crew chief standing fireguard for engine start sustained 7.62mm round in left leg when M60 door gun fired a chambered round during operational check. PC had reportedly visually inspected weapons and ammo feed trays prior to the accident.

Class C
L series

■ Tail-rotor de-ice cable and bracket were found missing during postflight inspection, and damage to one rotor blade was discovered. Separation of component is suspected to have occurred during second leg of flight, as through-flight inspection revealed no discrepancies.

Class D
L series

■ During multiship artillery raid, crew inserted six guns, went to laager site, then returned to extract M119 howitzer. When crew picked up howitzer, right chain leg came off wheel, causing gun to flip over.

Class E
A series

■ Before takeoff, with aircraft at 100-percent rpm, No. 1 main generator caution light came on. Mission was cancelled. Maintenance discovered that generator shaft had broken and fallen into input module. Module generator was replaced.

■ During postflight inspection, crew noticed right cargo door handle was missing. Maintenance found worn snap ring that holds handle in place. Worn snap ring allowed handle to work its way off shaft and fall off aircraft during flight.

■ During cruise flight, No. 1 engine experienced multiple compressor stalls. Tgt exceeded 950°C for 6 to 9 seconds. Crew initiated emergency procedures and landed without incident. Engine is being returned to depot for evaluation.

■ No. 1 engine low oil pressure caution light came on during taxi. Engine was shut down and aircraft taxied back to parking without further incident. Maintenance found oil filler cap not installed.

L series

■ While in straight and level flight under IMC, transmission main module chip detector caution light came on. Crew made emergency descent to VMC conditions, where uneventful precautionary landing to open field was performed.

■ During extraction phase of multiship artillery raid, right chain leg came off hub of M119 howitzer, causing gun to flip over. Aircraft landed and shut down without further incident.

■ Aircraft was at 143 KIAS in formation flight when crew heard loud bang from left side of aircraft. Crewmember noticed that left-hand doorstep was missing. Two crewmembers said they had performed walk-around inspection before takeoff and believed that fairing was secure. No noise was noted until loss of fairing.

C12

Class C
F series

■ After No. 2 engine shutdown and successful restart during flight evaluation, propeller would not come out of feather and returned to high rpm. Crew elected to shut down engine and made single-engine landing at home station. Cause not reported.

■ As aircraft passed through 13,000 feet during climbout, crew detected ice buildup sufficient to warrant inflating de-ice boots. As PC inflated boots, master warning and right bleed air fail lights came on. CP noted only partial inflation of right-wing de-ice boot. PC immediately descended out of icing conditions and landed at home base. Two holes were found in polyflow tubing; tubing was replaced.

For more information on selected accident briefs, call DSN 558-2785 (334-255-2785). Note: Information published in this section is based on *preliminary* mishap reports submitted by units and is subject to change.

Aviation messages

Recap of selected aviation safety messages

Aviation safety-action messages

OH-58-99-ASAM-04, 051711Z Apr 99, maintenance mandatory

Allison engine company has determined that some Allied Signal (Bendix) OH-58D(I) fuel control unit and main fuel control assemblies (new or overhauled since September 1996) may contain springs that have manufacturing damage that will, if spring failure occurs, result in immediate engine deceleration. The purpose of this message is to inspect all fuel controls to identify those that require modification and to place operating restrictions on aircraft operations until discrepant fuel controls have been replaced.

AMCOM contact: Mr. Ron Price, DSN 788-8636 (256-842-8636), ron.price@redstone.army.mil

OH-58-99-ASAM-05, 271152Z Apr 99, maintenance mandatory

Three field reports have indicated cracking of a tail-rotor drive shaft bearing hanger support. Suspect support is the third hanger support on the tail boom at fuselage station 281. Analysis has determined the cause to be burrs on the tail boom mount holes. The burrs create a potential stress point that, when exposed to surrounding loads, can result in crack formation. The purpose of this message is to initiate a before-first-flight daily inspection of the support and also a special inspection at the next 20-hour/14-day PMS inspection.

AMCOM contact: Mr. Ron Price, DSN 788-8636 (256-842-8636), ron.price@redstone.army.mil

CH-47-99-ASAM-05, 221518Z Apr 99, maintenance mandatory

Several instances have been reported of failed aft landing gear drag links. Investigation has revealed the cause to be stress-corrosion cracking. New drag links are now made from a material that is not susceptible to stress-corrosion cracking. The purpose of this message is to extend replacement date of certain aft landing-gear drag links to 31 October 2000

AMCOM contact: Mr. Robert Brock, DSN 788-8632 (256-842-8632), bob.brock@redstone.army.mil

Safety-of-flight message

AH-64-99-SOF-02, 222003Z Apr 99, technical

Investigation of an in-flight BUCS activation revealed a suspect condition in AH-64A/D BUCS servocylinders. The servocylinder contains a linear variable differential transducer that may move out of an electrical null position and result in BUCS activation. The purpose of this message is to direct initial and recurring inspections of AH-64A/D BUCS servocylinders for correct electrical null.

AMCOM contact: Mr. Howard Chilton, DSN 897-2068 (256-313-2068), howard.chilton@redstone.army.mil

Speed ⊙
Fatigue ⊙
No seatbelt ⊙

No new causes, just new victims

FY98	FY99
64	69

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Class A Accidents through April

		Class A Flight Accidents		Army Military Fatalities	
		98	99	98	99
1ST QTR	October	2	1	0	0
	November	1	1	0	2
	December	2	1	2	0
2D QTR	January	1	1	0	0
	February	1	4	0	2
	March	1	0	0	0
3D QTR	April	0	2	0	7
	May	1		0	
	June	2		4	
4TH QTR	July	1		0	
	August	0		0	
	September	0		0	
	TOTAL	12	10	6	11

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Charles M. Burke
Brigadier General, USA
Commanding