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INFORMATION

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Lesson learned: Never give up.



Food for thought. It is unacceptable that we are losing soldiers in POV accidents at the rate of one every 3 days. And we are losing more than our fair share of aviation-MOS soldiers. According to the Chief of Staff, Army, the key to reversing this trend is active, caring leadership at every level to increase command emphasis on POV safety. I agree wholeheartedly. See page 8 for General Reimer's recent guidance on the subject.

—BG Burt S. Tackaberry, Commanding General, U.S. Army Safety Center

Never stop flying the aircraft . . .

“First and foremost, control the aircraft.”
“Fly the aircraft all the way to the ground.”
“Never stop flying the aircraft.”

These are all words our instructors have used to drive home the important point of aircraft control during simulated emergencies in the aircraft and simulator. Chapter 9 of every Army aircraft operators manual stresses the importance of controlling the aircraft when responding to real emergencies: “The most important single consideration is aircraft control.”

Recently, four crewmembers survived inverted flight in a CH-47 because the pilots never stopped flying the aircraft—even when it appeared the aircraft was unrecoverable.

The two pilots, the flight engineer, and a mechanic had done everything right. They had spent 2 days inventorying, inspecting, and test flying the aircraft they were receiving from depot following phases one through four maintenance services. Although not

required, they had performed a full maintenance test flight of the aircraft and found and corrected a few minor problems. They were more than merely satisfied that the aircraft was suitable to accept and fly; they agreed that this was one of the smoothest flying CH-47s they had ever flown.

The first leg of their planned 2-day mission back to their unit was without incident. They were about an hour into the second leg—and only 18 minutes from their destination—when they encountered their emergency.

The PC, who also was an IP and MP, was on the flight controls when the nose of the aircraft began a slight pitch down. He applied aft cyclic to correct for what seemed to be a normal divergence in the CH-47. But as he applied aft cyclic, the nose began a slow left yaw that he could not control with full right pedal.

The aircraft then began a slow left roll to about the 90-degree point and then continued with what



After 360-degree roll in flight, the crew managed to land the Chinook with surprisingly little damage. During shutdown, however, damaged droop stops allowed the aft rotor blades to pound into the fuselage.

seemed to be a snap roll through the remaining 270 degrees.

But it didn't happen that fast; it felt like eternity to the crewmembers. As the aircraft inverted, the PI, figuring he had nothing to lose, joined the PC on the flight controls. (I am not advocating that two people try to fly an aircraft, but this action confirms that both pilots knew they were in a desperate situation.) Instinctively responding by doing what they had been trained to do, the pilots continued to fly the aircraft even as they saw the ground through the greenhouse and it appeared there was no hope of recovering control of the aircraft.

The aircraft miraculously returned to a wheels-down attitude at about 250 feet agl. The pilots were able to control the aircraft to a near-normal touchdown, although full right pedal was still necessary to control aircraft heading. As the crew performed an emergency shutdown, the aft rotor

blades made contact with the fuselage since the damaged droop stops did not operate normally.

They had, in the words of the PC, "killed the beast"—all with only minor injuries to the mechanic, who had been standing at the onset of the emergency. The aircraft was severely damaged, but four extremely valuable aviation resources who unexpectedly found themselves in a life-or-death situation that was not of their making are still with us today because they did not give up.

All four of these crewmembers share their stories on the following pages. What you'll read comes from the first-person accounts they gave only hours after the incident. We are publishing their stories here with their permission and approval, and we're grateful to them for their generosity.

—MAJ Herb Burgess, Aviation Systems & Investigation Division, USASC, DSN 558-9853 (334-255-9853), burgessh@safety-emh1.army.mil

After months of investigation and extensive research, testing, and analysis, the cause of this accident has never been determined. The Army Safety Center, the CCAD Investigative Analysis Unit, AMCOM, and Boeing continue to monitor and evaluate all CH-47 flight-control anomalies to determine the cause of this accident and take corrective actions.

The view from the cockpit

CW3 Bric Lewis, PC

It was cold, but we couldn't have asked for better weather—you could see forever.

We were going along at 1100 to 1500 feet above the ground, running between 130 and 135 knots indicated, and I was letting it float. I didn't have altitude hold engaged. I had my feet resting on the pedals and my hands lightly monitoring the controls. The aircraft would float up, and I'd bring it back down to between 1500 and 1100 feet, depending on the terrain.

I'd made a correction in altitude because it was climbing a little bit; we were somewhere around 1100 feet agl when I felt satisfied I was at an altitude that was okay. We were about 135, 140 knots when I noticed that the aircraft nosed over. I let it go for a second. And then it yawed. The tail end was coming around the right side. I applied right pedal and a little bit of aft cyclic to stop the descent. But it got worse. The yaw rate increased dramatically, and I had full right pedal. It continued on around and Pat, the PI, grabbed the dash. I didn't hear anything from the guys in the back.



There were no indications on the dash that there was anything wrong, no lights—nothing. I thought for a second that there was an AFCS problem.

And then the aircraft got on its side. Pat was screaming, "Catch it, Bric, catch it!"

At that point, I had the pedal jammed against the stop, and it was still yawing to the left. By this time we were on our left side. The seat of my pants told me that the tail was coming around, so I applied full right cyclic.

The stick wouldn't move; it was like it was in concrete. Just about the time I noticed the stick wouldn't move, the nose pitched UP, and the aircraft rolled over on its back.

I yelled, "Oh, God!" and Pat got on the controls. I didn't know which way we were going. All I knew was, it's upside down. I was looking through the ceiling, and I could see the ground rushing up towards us. Pat was beneath me—from where I was, I could see the top of his head below me, and the aircraft was falling upside down. The nose was low, and I knew that the cockpit was going to hit first. I still hadn't heard anything from the crew chiefs. I could sense Pat on the controls with me. And they weren't moving.

I saw my wife.

Then the stick hit me in the leg, and I said, "This thing ain't gonna kill me!" We were flopping the cyclic around, but it wasn't doing anything.

We were getting fast, real fast. I had that elevator feeling in my stomach. And I thought, "This is the way it is. They lied. They tell your family it's instant." But you have that two or three seconds, and you know what's going on. It made me mad.

I remember thinking to myself, "It's upside down. There ain't nothin' you can do."

And then it flipped over! I don't know why; I don't have any idea why it did.

Pat was on the controls with me. And we were FAST, fast. I looked at the airspeed indicator, and it said zero. I said, "No! It's FAST!" And he screamed, "250!" I thought he was calling out airspeed, but he meant altitude. The ground was rushing up.

Something flashed by the window, and I said, "We're close to the ground." I honked back on the stick, and Pat was with me. It was yawing terribly to the left, and we went—I know he was there—full right pedal and applied just as much aft cyclic.

I felt it lift. And I thought, "Yeah, we ballooned. Airspeed's coming back." I looked at the rotor, and it was coming back down through 115 percent—I don't know where it *had* been. And it was SCREAMING.

And I thought, "I'm gonna MAKE it!" It was slowing down; everything was coming in good. We had back some altitude, and there was nothing in

front of us. Just level ground. I thought, "Yeah, we're gonna make it."

And then the nose kept coming up. "No," I thought, "we're going to end up stopped, but we'll be 25 feet off the ground!" So we pushed the stick forward, and the nose came down. We were getting ready to come down. This time it was SLOW; it was REAL slow. I don't know how slow it was.

We got ready to cushion, but I couldn't lift the thrust. With all my strength, I couldn't lift the thrust.

I could feel that little jump you get



During the wild ride, flight pubs stowed on the right side created a blizzard inside the cockpit. Most of them ultimately settled on the left floor and dash.

when it's in the hangar and you move the controls—a little inch or so of movement. Pat was pumping it, and I was pumping it, and it wouldn't move. The aircraft was yawing BAD to the left, and we still had full right pedal. Finally, I just flared a little bit more with the cyclic, and the back wheels touched. And then the front wheels touched. And it STOPPED. We didn't hit brakes; it just stopped.

For the first second or two—and it was SCREAMING—we sat there. And then WE started screaming, “We made it! We killed the beast!” And we gave each other the big high-five right there in the cockpit.

Pat did the emergency shutdown while I tried to center the controls. The cyclic came back. We could move the thrust. The right pedal was stuck all the way to the front. And Pat was excited. He was hollering, and the blades were starting to wind down. And then he asked the crew chiefs to see if there was any fire. But we could tell; it wasn't coming apart. I mean, it felt *normal*. Pete, the flight engineer, said, “I don't see any fire.” That was the first we'd heard from him.

And then there were three real fast bangs. And the whole airframe shook.

And then there were three more, not as fast. After the first three, we knew what it was.

Pat tried to lean down over the console, and I tried to get down between the pedals, but our shoulder harnesses were locked and we were fighting with that. And I was thinking, “Man, this thing is *still* trying to kill us!”

All of a sudden, it came to a stop. It just—everything stopped. We didn't holler again. We just shut off the battery. Pat was going to go through the checklist. “Just leave it like it is,” I said. “Just leave it. Just make sure we're all okay.”

We got out, and we were pumped. We looked at it; it was torn up, but we were on the ground.

CW2 Pat Nield, PI

We were at about 1000 to 1100 feet agl, right at between 135 and 140 knots. The aircraft was tracked really smooth; it flew better than anything I'd ever flown out of Corpus. I was looking down at the map when I felt the nose pitch down, and I got a little bit of a shudder. I looked up and saw that the airspeed had picked up. At that point, Bric, the PC, started pulling back on the cyclic. That's the last time I looked at him because we started an abrupt yaw that made me grab onto the dash. My perception is that the nose pitched UP and continued to yaw really strongly. At this point, I knew things were bad; I didn't think we were going to be able to recover.

All of a sudden, the aircraft just snapped over; it

felt like it went upside down. I was seeing ground through the greenhouse. Maps were flying everywhere in front of me. I heard Bric say “Oh, God!” a couple times and things got really frantic. I remember thinking, “Oh, God, this is bad if HE's saying ‘Oh, God’,” because Bric's the best pilot I know.

When we went upside down, I figured I had nothing to lose, so I went ahead and got on the controls. I was fishing around, but nothing would bite. It was just like the rotor system was unloaded. I couldn't see anything inside the aircraft, because everything was shaking too much. There was lots of noise, lots of vibration.

I was trying to obtain a ground reference point; I didn't get one until I could see the ground through the windscreen right in front of me. It was just rushing up, and we were turning. At that point, I remember trying to put in full right pedal, and I felt a response. I don't know if that was the response I felt or the billions of others I was doing. But something bit. Something took hold, and we got an input. I can remember pulling back aft left, and the aircraft started coming up. It was then that I realized that Bric was on the controls with me. He was still there. When we were upside down, I had no idea.

When the aircraft finally recovered, we were about 100, 200 feet agl and screaming out of the sky. We were both pulling back on the cyclic, flaring the aircraft. We started getting to where we were flared a little too much, and we thought the bottom was going to drop out on us. We attempted to pull up on the thrust and got maybe an inch at the most. Thrust just wouldn't go anywhere. So we started pushing it through. Bric said later that I was yelling out instructions; I don't really remember that. I just remember pushing the stick down.

We made a pretty good approach angle, and I remember touching down at what I'd estimate at 10 to 20 knots. It was really a relatively smooth touchdown. At that point, I released the controls, turned off the AFCS, and took both engines to stop. After that, I told the chief to check for fire on board. Then I looked at Bric; we got a little emotional and high-fived each other.

We thought it was over.

And that's when the rotor blades started slamming into the fuselage.

I knew that was a pretty bad thing because it could come through the companionway and chop up a crew chief or get Bric and me up in the cockpit. But, luckily, it slowed down and stopped.

I don't know how this thing righted itself other than God reached down and snatched this aircraft and turned it over. But it was like Bric and I had been joined at the hip at birth. We had worked together real well.

The view from the cabin

DAC Peter Biessener,
flight engineer

We were in level flight. I had done a ramp check, so I was looking at my watch and listening to the pilots and looking out the left forward window and thinking I probably needed one more ramp check before we landed. I looked over at Bill, the mechanic, in the other seat. Suddenly, the aircraft pitched down, and it started picking up speed. I thought, "That was kind of a strange descent."

And then it started yawing. I thought, "Gee, we're out of trim. This isn't right." And then there was this tremendous lateral g force. The aircraft was really popping, and I thought, "This is really bad." I saw Bill wasn't in his seat anymore; he was up by the right-hand post of the companionway, right by the heater closet.

I saw the ground rotating around in my window, and I thought, "Oh, Jesus. We're going upside down."

We rolled to the left. Out the left window, the ground was going around. And then Bill was up by the ceiling. We were upside down, and the aircraft was shaking really bad. "This is it," I thought. "We're upside down, and this aircraft's coming apart."

I heard Bric say, "Oh God!" And then it got really quiet. I never heard anything else from anybody.

I don't know why, but I started thinking, "I gotta get Bill." He was up on the ceiling. I was being pulled all over in my seat, but I was there; my seatbelt was holding me in. And I had to get Bill because he was flying. I could see the terror in his eyes. The next thing, he kinda came down on top of me, right in front of the radio closet, and I held on to him.

It started getting really noisy, a lot of wind noise. Everything was really FAST. Like the engines. And the rotors—really noisy. Bill was trying to get up, and I was just hanging on to him. And then I looked out the window.

The ground was not above us anymore. It wasn't on top of the window, it was on the bottom. And I thought, "God, we're right side up."

The ground was coming up really fast. I was thinking, "I have to get Bill into a seat! He has to get into a seat because this is going to hit hard." He was trying to get up and go across the aircraft, and I was pushing him over there. He was looking at me, and I was pushing him. I was yelling, "Bill, get in the seat!" He grabbed the seat, and he fell back on the floor. And then I started calling, "Put your seatbelt on!" I don't know why, but I grabbed mine, and it had become disconnected.

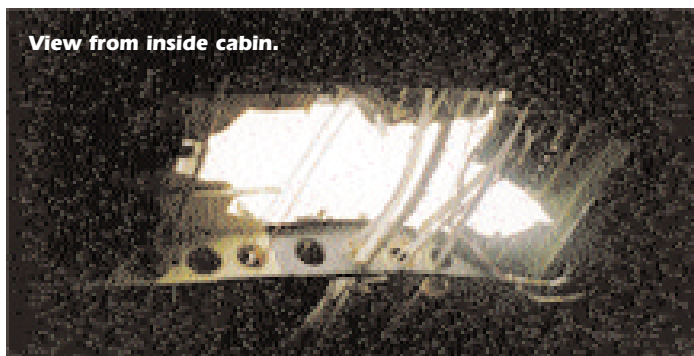
I looked out the window, and the ground filled the entire window. Bill was in a seat, but he didn't have a seatbelt buckled. I rebuckled mine and again looked out the window.

The ground was right there, and it wasn't moving. I thought, "This is impossible; there was no impact!"

Everything was really quiet, and I got up. Looking down, I saw my mic cord on the floor; that's when I realized I had come unplugged. That's why I hadn't been hearing anything. I picked up my mic cord and plugged it in. From the companionway, I looked up front at Bric and Pat. They said something like, "We did it!" and gave each other a high-five. Then Pat said, "Okay, guys. Let's check for fire. We're okay. We're on the ground."

So I turned around, and that's when I noticed that the entire cabin was a mess. All our baggage had come out from underneath the cargo straps; it was thrown everywhere. I saw an oil can underneath my seat. The first-aid kits were on the floor. I couldn't believe it. I turned and went to the ramp and hit the ramp down. I stayed on the ramp—I didn't want to get off—and looked out the left at the engine. There was no smoke or fire or anything. Then I turned to go to the other side.

That's when the pounding started. Everything



View from inside cabin.



View from outside.

Aft rotor blades tore hole in top of fuselage during emergency shutdown.

started hammering, and I looked up at the aft transmission. I started moving fast; I wanted off that ramp really bad. I'd seen a Chinook where the aft transmission had fallen out and onto the ramp, and I didn't want to be there. Somewhere toward the front of the ramp, I fell down. At that point, with all the shaking, I realized that the blades were actually pounding on the fuselage. As I was crawling on the floor toward the front, I saw that Pat and Bric were laid over in their seats. Pat was down by the center console, and he started hollering, telling me, "It's okay! Stay back! Stay back!"

I guess I stopped moving near the cargo hole. I was on the floor, and that's when everything just got quiet. And everything quit moving.

I got up and took my helmet off. Bill was pulling on the door and looking to the back. When everything stopped, he kinda stood up, holding his back. His face was cut below his eye. He was hurting.

I looked around. I'm still amazed the way everything flew around the cabin. The scary part was the oil cans that were underneath my seat. I remember thinking that I don't always lock the ramp fire extinguisher in; a lot of times I just set it in its mount. And I thought, "Yeah, this time I locked it in, and it stayed there. It's a good thing."

I guess I thought a lot about securing equipment in the aircraft; I kept thinking about that. I was amazed. Stuff came out from *behind* the seats. It was in the cockpit. I mean this stuff that had been properly secured was thrown *everywhere*. The crossed straps on the boxes of gear worked well. I have to remember this, that it's not all just forward loading or a hard landing or something. This stuff could be thrown *sideways* out of its straps.

We were just really happy. We thought that if they ever put this aircraft back together, we want it back. Because it stayed together. I mean, no matter what it did wrong, it still *stayed* together.

At the hospital, I started thinking that this was really a good day. Because we should have been a big pile, just a smoking hole. Chinooks don't go upside down and come back to life. They just don't do that. It's like God reached over and set us right side up again.

DAC Bill Gorenflo, mechanic

So we're flying along. Pete does his ramp check. I'm impressed with ol' Pat; I can see him sitting in the front seat. He's got his map, and he puts an X and says, "I've got this tower over here. Bric, did you see that tower?" I mean, they're a good team. And Pete and I give thumbs up; these guys are *all right*. I said, "Man, it was a good trip."

The aircraft's flying smooth.

We're just flying along, fat, dumb, and happy. Another ramp check comes up, and Pete says, "Systems okay. Ramp check good."

It was cold. We had the heater going, but I was cold, so I went to my suitcase and got my flight jacket out and put it on. I don't know how much time went by before I decided to unbuckle and see how ol' Bric was doing up there. I had just unbuckled my belt and started to get up when, all of a sudden, it's like catching one of those big updrafts. As I was getting up, it just threw me, slammed me up on the structure between the heater and the closet area. Just slammed my face up there. And I'm telling you, holy hell broke loose.

I turn around, and it slaps me up against the radio compartment. I'm airborne. I'm going, "What's going on?" It rips my headset off, and I can't hear anything but transmissions screaming.

I can't see anything. I mean, my face hit that post and then, like when something pops you in the eye and you see a little bit of stars, and then all of a sudden, I'm spinning back toward the closet. I can't grab anything. Pete's in his seat, strapped there. He's trying to grab me. All I know is we're just *rolling*. I'm going, "Oh God, no!" And I picture my 6-year-old boy right there. And I go, "God, no!" And Pete's trying to hold me, and I'm looking at that seatbelt over there. I say, "Oh, God, no!" I know—we're waiting for the impact. You know, here comes the impact.

It throws me to the floor, and I'm trying to go for the seatbelt over there. It's just happening so fast. And I'm on the floor. When the aft gear touches down, I'm still on the floor.

Finally, I look at Pete. He mouths, "We made it."

I can hear the pilots hollering up front, and I look up there. All of a sudden, the pounding starts.

I knew THAT sound; I knew the blades wanted to come through. It was just POW, POW, POW! I try to reach the knob to the lower cabin door so I can get the hell outa there. But the handle was turned; it was catching the top cabin door and I couldn't get out. I looked back, and Pete already had the ramp down. He makes a beeline—I think he set a speed record for the low-crawl.

Finally, it gets quiet. I look up. My face is hurting; my back is hurting. And we get out of there.

It's cold out there; I'm shaking. And I'm hurting. And I'm thinking, "What just happened?" I go back in. Pat's still inside, standing there. We just hug each other. I say, "Man, you guys saved our lives. What in the world...?" He says, "I don't know. Just thank God we're on the ground."

All I've got to say is that those two guys were a team up there, and with their ability and their experience and their training or whatever and the grace of God got us out of that or else it would have killed all of us. I don't know how they did it.

CSA directs leader action against POV accidents

I am deeply troubled that, on average, one soldier dies every 3 days in a POV accident. Thus far in FY98, 53 soldiers have perished in POV accidents. This is a 71-percent increase over the previous year, an alarming and unacceptable trend.

The causes of these accidents are not new or different: speeding, alcohol, fatigue, and carelessness. Use of seatbelts in many of these accidents could have saved soldiers' lives.

Your involvement is paramount in gaining control of this situation, influencing how our soldiers operate their POVs, and stopping this tragic and needless loss of life. Positive, hands-on leadership at all levels is imperative, particularly at the squad leader or first-line supervisor level.

The Director of Army Safety has developed a Model POV Safety Program. I am directing that this six-point program be used in every unit. It is the minimum standard. The Model POV Safety Program requires—

■ **Command emphasis.** Positive leadership at all levels is imperative. Leader emphasis on POV safety must be unrelenting. Our junior officers and noncommissioned officers see their soldiers every day. They should know where their soldiers go, what they do, and then assert positive influence on how, when, and where they operate their POVs.

■ **Discipline.** Our junior leaders work with their soldiers daily and know them well. Soldiers sometimes telegraph signals that translate later into accidents. Negative behavior such as traffic offenses, alcohol abuse, misconduct, and poor performance often are indicators of potential POV accident victims. Identify "at risk" soldiers; counsel them; take proactive measures to modify their risky behavior.

■ **Risk management.** Use risk management. Identify hazards associated with POV operations; assess the hazards; make decisions to control them; implement the controls; and supervise execution. The Director of Army Safety has prepared a POV risk management toolbox for commanders and leaders. This toolbox provides a comprehensive set of tools and controls that have proved successful throughout our Army. The toolbox is available at <http://safety.army.mil>. Use it. Make it available to leaders at all levels.

■ **Standards.** Set high and unmistakable standards. Enforce them. Follow Army regulatory traffic standards. Be uncompromising on the use of seatbelts and motorcycle safety equipment. Educate soldiers on the risks of speed, fatigue, and use of alcohol. Conduct mandatory POV safety inspections and random roadside checks. Emphasize the use of designated drivers for social events.

■ **Provide alternatives.** Provide alternatives for soldiers to driving POVs. Schedule activities on post to keep soldiers on post and off the road. Keep gyms, recreation centers, and other places soldiers use off-duty open later. These same measures also can provide

alternatives to alcohol use. Look for transportation alternatives as well. Promote use of alternate transportation methods to POV use. Prominently post public transportation schedules. Where possible, use Morale, Welfare, and Recreation (MRW) Services to provide buses or vans to transport soldiers to the places they go when off-duty. Arrange reduced hotel rates in nearby communities to encourage soldiers to remain overnight on weekends and stay off the highways late at night.

■ **Commander's assessment.** Following every fatal and serious-injury POV accident, commanders will conduct an assessment of the accident with the involved soldier's chain of command. Determine what happened, why it happened, and how it could have been prevented. Implement corrective and preventive measures. Publicize lessons learned.

I have tasked the Director of Army Safety to visit major installations beginning in late March and brief leaders on the Model POV Safety Program. You will receive coordinating instructions about this briefing in a subsequent message.

I want every Army leader to clearly understand the depth of my determination to end these tragic and needless POV fatalities. I cannot accept the current POV fatality trend we are experiencing. Direct, positive, hands-on leadership will make a difference. This is leaders' business at every level of our Army.

—General Dennis J. Reimer; Chief of Staff, Army; 24 March 1998



Getting there is half the battle

Soldiers are our credentials!

“How could they have had an accident? They were just . . .”

With today's real-world missions, commanders anticipate hazards. They integrate risk management into planning to ensure mission accomplishment and to reduce the chances of injury to personnel and damage to equipment. They brief, back brief, rehearse, and supervise at that critical time and place on the battlefield, especially on those moderate- and high-risk missions.

But what about the low-risk missions? Every mission conducted today could have an element of high risk hidden in it—especially those that are “just low-risk” missions. For example:

■ The most experienced crew is “just going to land” in an observation position for a few moments. There's a loss of situational awareness in the cockpit, and the PC fails to maintain ground track on touchdown. Result: One aircraft destroyed at a cost of \$6.6 million.

■ The most experienced crew is “just finishing up an APART evaluation” on a marginal FLIR night. There's a breakdown of crew coordination, and the SP lands the aircraft in the trees. Result: One

aircraft destroyed at a cost of \$11 million.

■ The crew is “just doing an MOC on the parking pad.” There's a crew-coordination breakdown and a failure to follow standards. Result: two fatalities and an aircraft destroyed at a cost of \$6.3 million.

The next time a crew says they are “just going to” go do something, take a few moments with them to make sure they are not “just going to” have an accident.

—CW3 “Stew” Milligan, Aviation Systems & Investigation Division, USASC, DSN 558-9857 (334-255-9857), milligad@safety-emh1.Army.mil



Shortfax
Keeping you up to date

ALSE-message update

The project manager for aircrew integrated systems (PM ACIS) recently published its annual update of messages dealing with aviation life-support equipment. Following is a recap of current messages.

- AIS 96-03, 072220Z Mar 96, overview of SPH-4/4B helmet.
- AIS 96-08, 041239Z Apr 96, aviator and crewmember laser eye protection.
- AIS 96-10, 051938Z Mar 96, survival ration (NSN 8970-00-082-5665).
- AIS 96-15, 301900Z Jul 96, personnel distress signal kit (NSN 1370-00-490-7362).
- AIS 96-18, 051531Z Aug 96, Mustang survival, MAC-10 anti-exposure suit.
- AIS 96-19, 142203Z Aug 96, disassembly/reconfiguration authorization for aircraft modular survival system.
- AIS 96-20, 232000Z Sep 96, requisitioning life raft and container assembly.
- AIS 97-02, 052025Z Feb 97, delayed implementation of paragraph 7-6b, AR 95-3.
- AIS 97-03, 052029Z Feb 97, compressed gas cylinder overhaul/inspection.
- AIS 97-04, 052031Z Feb 97, use and inspection of safety harnesses (NSNs 1680-00-982-9973 and 1680-00-169-0656).
- AIS 97-05, 052034Z Feb 97, battery used in distress light marker.
- AIS 97-06, 052054Z Feb 97, multi-climate survival kit for OH-58D aircraft.
- AIS 97-07, 052103Z Feb 97, ALSE course.
- AIS 97-08, 052104Z Feb 97, manual reverse osmosis water purifier.
- AIS 97-09, 031939Z Jun 97, leg straps on restraint harness (NSN 1680-00-982-9973).
- AIS 97-10, 032017Z Jun 97, HGU-56/P ear-cup assembly.
- AIS 97-11, 221812Z Sep 97, SARVIP modification strap kit.

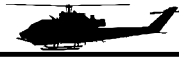
Visit the PEO-Aviation web site at <http://134.78.40.107> for additional news, system updates, and copies of ALSE messages.

POC: SSG M. Fisher, AMCOM, DSN 897-4259 (256-313-4259), fisherm@peoavn.redstone.army.mil

Accident briefs

Information based on preliminary reports of aircraft accidents

AH1



Class E

F series

■ At 2000 feet and 105 knots, aircraft went into immediate right roll, accompanied by severe vibrations. Pilot's cyclic became uncontrollable until collective pitch was reduced. Aircraft was immediately landed and shut down; it continued to rock until blades came to a stop. Cause not reported.

AH64



Class C

A series

■ Aircraft was at 500 feet msl and 100 KIAS in downwind condition when bird struck and damaged day side of TADS.

■ Crew heard thump while on base leg of traffic pattern, and SP in rear seat noted flock of birds approaching. Postflight inspection revealed damage to leading edge of right wing in vicinity of inboard pylon.

■ Bird strike during cruise flight at night damaged windshield, wiper arm, and No. 2 engine air intake cowling.

Class D

D series

■ No. 2 engine cowling door came open during maintenance test flight training. Engine heat blanket was blown up into main-rotor system, damaging two main rotor blades.

Class E

A series

■ Aircraft was at 150 feet agl and 10 KIAS when wingman saw smoke coming from exhaust of No. 2 engine. There were no engine-malfunction indications. Aircraft landed in field without incident. Caused by failure of No. 2 B-sump seal. Engine was replaced.

■ Postflight inspection revealed that main rotor blade had debonded. Blade was replaced.

■ Crew noted uncommanded lateral

flight control inputs during low-level flight. Mission was terminated, and aircraft landed at nearby airfield without further incident. Troubleshooting with test equipment revealed numerous sensors inoperative or out of adjustment.

■ While in cruise flight during night unaided training flight, crew detected burning odor in cockpit. As aircraft turned toward nearest airfield, master caution and shaft-driven compressor segment warning lights came on. Crew immediately landed and performed emergency shutdown. During egress, crew saw thick gray smoke billowing from catwalk area in vicinity of transmission and rotor-head area. Inspection revealed SDC housing had split.

CH47



Class C

D series

■ When aircraft entered autorotation as part of track and balance during maintenance test flight, No. 2 engine N1 decreased below 60 percent and engine failed. PTIT reached 1100°C. Crew conducted power recovery on No. 1 engine and performed abort-start procedure on No. 2 engine. Aircraft returned to home base, where crew performed roll-on landing without further incident.

Class D

D series

■ During water-bucket mission, aircraft approached fire from downslope at 20 knots. When pilot increased power to initiate climb, water bucket hit top of tree and punctured side of Bambi bucket.

Class E

D series

■ Right bubble window blew out 30 minutes into flight. Crew was unable to find window and continued mission. Reason for loss of window could not be determined.

■ On approach to unimproved area during multi-ship external-load operations, aircraft encountered

whiteout due to blowing snow. As crew flew out of snow cloud, load (M105 howitzer) became entangled in sling legs.

OH6



Class C

J series

■ During approach to land during NVG flight, pilot of Chalk 3 applied additional power to arrest descent when the aircraft descended below Chalk 2's flight path. Postflight instrument monitoring system revealed transmission overtorque.

OH58



Class A

D(R) series

■ Main-rotor blade struck tree during dual-ship NVG gunnery training. Aircraft descended and contacted ground upright. Main-rotor blade mast and tail boom separated. One .50-cal round remained in gun chamber and seven 2.75-inch detonation rockets remained on board. EOD personnel removed ammo without incident. No injuries were reported.

Class C

D(I) series

■ When aircraft was picked up to hover after refueling at civilian airport, vertical fin contacted ground, bending lower 8-inch portion out about 90 degrees. SCAS had been deactivated. Fin was replaced.

■ During pickup to hover, tail stinger contacted ground, followed by vertical fin and tail rotor. Aircraft landed after spinning to right about 200 degrees. Damage reported to tail stinger, vertical fin, drive shaft, and tail-rotor blades.

Class E

D series

■ During climbout, small bird flew up from the left into main-rotor system. Aircraft landed without incident. There was no damage.

D(l) series

■ After 1.7 hours of flight during gunnery training at night, IP and student noticed breeze in cockpit. Pilot's door was missing.

■ At completion of overwater NVG gunnery, 14 NM from land, Chalk 2 reported flames coming from engine compartment of lead. Lead continued powered flight to nearest land and landed without incident. Maintenance personnel found that internal metal o-ring seal had not been installed on power turbine oil strut T-fitting.

■ Crew door came off and hit left-skid during hover at 120 feet agl during gunnery operations at night. Door became hooked on the skid through a hole in the window created by impact.

■ During cross-country formation flight, PI smelled burning odor. As PC took controls, all auxiliary interior lights failed. PC landed aircraft in open field without incident. Caused by burned wire behind mag compass.

UH1



Class E

H series

■ Master caution and right fuel boost pump lights came on during takeoff, and aircraft landed. Caused by clogged ejector pump.

■ While at stationary IGE hover, aircrew heard two loud bangs and aircraft shuddered and yawed. Crew immediately landed. Suspect compressor stall.

■ Improper aft crosstube was installed on aircraft. Crosstube from UH-1M was installed on UH-1H aircraft. Improper installation caused all four saddle mount brackets to mushroom with excessive rollover of mount bracket.

■ During hover awaiting takeoff, aircraft experienced violent compressor stall. Pilot reduced power and landed in place without further incident. Maintenance replaced VIGV self-aligning bearing.

V series

■ During cruise flight, rpm warning light came on and N2 tachometer dropped from 6600 rpm to zero. Tach remained at 324 and all other engine

instruments were normal. Caused by sheared shaft to N2 tachometer generator.

UH60



Class B

A series

■ After landing to confined area, crew of lead aircraft noted small tree within rotor-disk radius. On-site inspection revealed no damage, and aircraft returned to home station. Inspection the following day revealed damage that required replacement of all four main-rotor blades.

Class D

A series

■ Aircraft stabilator struck ground during approach to unimproved landing area.

■ Chalk 2 in flight of four on approach to unimproved LZ entered near whiteout conditions and did not see 2-foot ditch in LZ. Upon landing, aircraft rolled into ditch, and nose contacted opposite side of ditch. Damage consisted of two large dents in front underside of nose section.

Class E

A series

■ After landing during air-assault training, passengers on both sides pulled emergency-exit handles instead of cargo-door handles. Right front cargo window fell out, breaking the Plexiglas.

■ During fuel transfer on ERFs in preparation for flight, crew noted strong smell of fuel in cockpit and stopped fuel transfer check. CE found puddle of fuel in left aft portion of cabin. Caused by improper connection between fuel vent and fuel transfer line.

L series

■ Postflight after first leg of service mission revealed $\frac{3}{4}$ -inch-long skin debonding on trailing edge of tail-rotor blade.

■ Small wooden box entered main-rotor system about 3 feet inboard of blade tips during ground taxi. No unusual flight control response or feedback was noted.

■ During assault landing, right wheel

rolled into hole, causing 3-inch crack on lower right fairing.

■ During multi-ship landing at tactical PZ, two aircraft at 90-degree angle under blackout conditions made evasive maneuvers to prevent midair collision. Rotor rpm of one aircraft bled off and main generators went off line due to abrupt maneuver. Aircraft shuddered and crew landed aircraft abruptly. Inspection revealed all four main-rotor blades were damaged by striking the ALQ-144. It is not known whether excessive maneuvering or abrupt landing caused damage.

C12



Class D

F series

■ During landing flare just prior to touchdown, bird struck left wing in vicinity of stall strip. Postflight revealed dent in lower leading edge of wing.

N series

■ Aircraft was taxiing to parking when left pod (located on wing tip) and dipole antenna struck 2½-foot fence. Dipole antenna broke off.

Class E

D series

■ When power was applied for takeoff, torque on No. 1 engine fluctuated significantly. Takeoff was aborted. Caused by broken wire connector on torque meter.

O5



Class E

DHC-7

■ During cruise flight, crew experienced full indication of fire on No. 4 engine. After executing emergency procedure for in-flight fire, crew expended both fire-extinguisher bottles, secured No. 4 engine, and landed without further incident. Caused by short in fire indicating system.

■ Hydraulic fluid leak in left-main gear area came from brake shuttle valve.

Aviation messages

Recap of selected aviation safety messages

Aviation safety-action message

UH-1-98-ASAM-03, 251933Z Mar 98, maintenance mandatory

The UH-1 tail-rotor control tube (P/N 204-010-742-9), which is a flight safety part, has been undergoing fatigue testing to ensure that all vendors' parts meet the strength requirements of the originally qualified design. Parts manufactured by Master Swaging (cage 05056) do not conform and will be removed from service.

The purpose of this message is to outline requirements for a one-time mandatory inspection of all tail-rotor control tubes.

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

Safety-of-flight messages

CH-47-98-SOF-01, 181519Z Mar 98, technical

In two reported instances, the wrong bolt was installed between the aft upper boost actuators and the aft stationary swashplate. In both cases, the aircraft had come out of the refurbishment/standardization program at CCAD. In addition, confusion may exist in identifying the correct bolt due to incorporation and labeling of the forward and aft controls installation on the same page of the parts manual.

The purpose of this message is to require a one-time verification of hardware installation on the aft upper boost actuators to stationary swashplate for proper attachment.

AMCOM contacts: Mr. Dave

Scott, DSN 897-2068 (205-313-2068), scott-dc@redstone.army.mil; or Mr. Teng Ooi, DSN 897-2094 (205-313-2094), ooi-tk@redstone.army.mil

UH-1-98-SOF-04, 280136Z Mar 98, emergency

Since November 1997, UH-1 helicopters have operated under flight restrictions due to a trend of spur-gear failures caused by vibrations in the aircraft's T-53 engine.

The purpose of this message is to ground the Army's fleet of UH-1 helicopters until each engine can be tested to determine if the vibration is present.

AMCOM contact: Mr. Howard Chilton, DSN 746-7271 (205-876-7271), chilton-hl@redstone.army.mil



POV-fatality update through March

- No seatbelt
- Speed
- Fatigue

No new causes, just new victims.

FY98 = 56
FY97 = 35

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Class A Accidents through March

		Class A Flight Accidents		Army Military Fatalities	
		97	98	97	98
1ST QTR	October	0	2	0	0
	November	0	1	0	0
	December	1	2	0	2
2D QTR	January	2	2	2	0
	February	0	0	0	0
	March	2	1	1	0
3D QTR	April	2		2	
	May	1		1	
	June	3		0	
4TH QTR	July	1		8	
	August	0		0	
	September	0		0	
TOTAL		12	8	14	2



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