HUMAN AD

Heliprops

HELIcopter **PRO**fessional **P**ilots **S**afety Program
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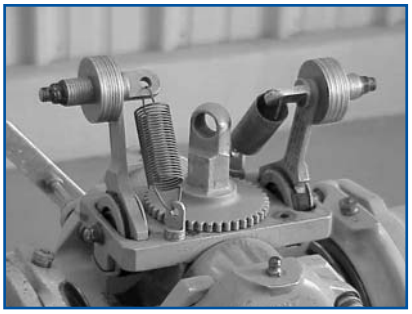
MAST NUT

Bell 206BIII C-GFSE - Report Number 00Q0046

The Transportation Safety Board of Canada (TSB) investigated this occurrence for the purpose of advancing transportation safety.

"The helicopter was imported from the United States in December 1999. The new owner signed a purchase service contract with … to repair several deficiencies, make modifications, and do some cosmetic work ... Since it was a private aircraft, all work was done solely on the authority of the aircraft maintenance engineer (AME) who performed it … In January 2000, the aircraft owner, who held a helicopter pilot license, hired a commercial pilot for additional safety while flying and to oversee the day-to-day operation of the aircraft. The commercial pilot was expected to ensure all work listed in the purchase service contract was completed within a reasonable time. The deadline for completing the work was set at May 04. The registration certificate was issued on March 07. Transport Canada then issued a certificate of airworthiness on April 20 after a compliance inspection.

On April 25, the AME started to complete the work listed in the purchase service contract and to correct the deficiencies noted by the owner on pleasure flights on April 20 and 24. These deficiencies included the defective transponder, a leak in the ceiling, and corroded washers on the droop restrainers. A nut screwed onto the top of the mast secures the droop restrainers and the rotor head in place. A mechanical lock bolted to the droop restrainer is secured with a lock wire and prevents the mast nut from unscrewing in flight. After the mast nut is installed, an independent inspection is required. The work must also be entered in the aircraft logbook and signed off by either two AMEs or one AME and a qualified pilot.



At the request of the AME, an apprentice AME removed the droop restrainer and the mast nut from the aircraft, then stripped and primed them. The next day, April 26, the AME's partner (who was also an AME), noticed that the apprentice had not used an epoxy primer, and he asked the apprentice AME to strip the parts again so he could paint them on the evening of 27 April. At that time, no flights were scheduled for April 27. After the droop restrainers were stripped, they were placed on a tool box beside the aircraft; the mast nut and the securing mechanism were placed on another work table. The investigation could not determine whether the pilot was advised that the droop restrainers had been removed.

On April 27, the day of the occurrence, no other work was scheduled to be done on the helicopter. The AME was doing administrative work, and the apprentice AME was working on an aircraft beside the helicopter. However, the pilot, who arrived at the hangar around 0930 eastern daylight time, asked the AME to work on the helicopter in preparation for some flights scheduled by the owner for April 28… Consequently, the AME had to interrupt the job he was doing and devote the remainder of the day servicing the helicopter.

After replacing the transponder, the pilot and the AME pushed the helicopter out of the hangar around 1500 to find the water leak. Around 1700, the pilot start-

ed the aircraft and hovered it … Then the aircraft took off (with the AME on board) toward the northeast around 1735 to check the transponder. At 1737 the pilot called the Montreal control center to transmit his intentions. The flight determined that neither the transponder nor the altimeter was functioning. At 1740, the pilot advised that he was returning to Beloil Airport; it was the last message from C-GFSE. Radar recordings indicate that the aircraft was orbiting left when it vanished from the screen. Since the transponder was not working, the aircraft altitude was not displayed on the screen.

The wreckage trail was on a track of 350 degrees magnetic. The first debris, small fragments of plexiglass from the bubble and the cockpit interior finishing, was found 1200 feet south of the main wreckage. Several other parts were strewn about in the field, between the wreckage and the south end of the debris area. The two blades were found attached to the main rotor hub about 400 feet southeast of the aircraft. Examination of the hub revealed that the mast nut, the droop restrainers, and the spacer that replaces the droop restrainers when they are not installed were all missing. The internal threads in the holes where the droop restrainers attach to the hub were intact, and the examination revealed no attachment bolt debris. Examination of the main rotor mast and the head trunnion indicated that the damage was caused by a vertical movement of the hub. The two pitch control rods failed in overload. Shortly after the occurrence, the droop restrainers and the mast nut for C-GFSE were found in the … hangar at the same location where they had been left the day before by the apprentice AME.

No entries concerning the removal of the mast nut and the droop restrainers were made in the aircraft technical log, open job lists, inspection sheets, or worksheets. Under the Canadian Aviation Regulations, when work is partly completed, a general description of all remaining tasks must be logged, including the exact location of all systems or parts moved. This requirement is met when the open job lists, inspection sheets, or worksheets used on a job indicate clearly all the work that remains to be done. When work is completed, the person who did the work must enter the relevant information in the logbook as soon as possible after completing the work, but before the next flight at the latest. As a rule, the pilot checks only the logbook before a flight to ascertain the condition of the aircraft. The logbook of C-GFSE was found in the wreckage area. The investigation was unable to determine whether the pilot knew that the mast nut had been removed. It was determined that the apprentice AME and the AME's partner forgot, before the aircraft took off, that the mast nut had been removed.

Some companies place a warning flag in the cockpit and/or on the fuselage to indicate that the aircraft is not airworthy and that maintenance work is in progress. This practice is not required by the Canadian Aviation Regulations. In this occurrence, neither the AME nor the apprentice AME followed this practice: there was no visual indication that the mast nut was not in place.

The pilot was certified and qualified for the flight in accordance with existing regulations. He received his commercial pilot (helicopter) license on 22 July 1986 and passed his pilot proficiency check on 14 June 1999. His license validation certificate was valid, and he held a Class 1 flight instructor rating (helicopter). The pilot was chief instructor for … and he took the Transport Canada pilot decision-making course on 24 April 1999. Pilot decision-making initiates pilots to the factors that affect human performance, the decision-making process, and how to counteract human error … His peers considered him a conscientious pilot who did pre-flight checks. The AME was licensed and qualified to service C-GFSE. He received his AME license (helicopter) on 04 April 1985. He supervised the apprentice AME, who had four years experience. Although the investigation did not precisely determine the AME's workload, it was established that

he had been especially busy in the months preceding the occurrence. In addition to working weekdays, he worked on weekends and had practically no days off during this period. The AME worked an average of 12 hours a day.

While the Canadian Aviation Regulations do not specifically require a pre-flight check, the information in Chapters 1 and 4 of the aircraft flight manual, which includes the pre-flight checklist, is approved by Transport Canada and is required for the efficient and safe operation of the helicopter. Chapter 2 provides a detailed description of the preflight check and states that the pilot is responsible for determining whether the helicopter can complete the flight safely. The pilot should climb onto the cockpit roof to check the main rotor head and hub. From the roof, it would be obvious if the mast nut were missing; the mast threads and opening would be visible. In fact, the droop restrainers and the mast nut can also be seen from the roof. (The droop restrainers and the top of the mast nut can also be seen from the ground. Editor)

Analysis

Examination of the rotor head and its components indicates that the main rotor separated from the aircraft because the mast nut was not in place. The possibility that another mast nut was installed before the take-off and came loose in flight was rejected because all the mast nuts in inventory were found in the … hangar. Consequently, the aircraft took off with no mast nut.

A description of the work to be done should have been recorded on one of the documents, as required by regulation to advise maintenance personnel. Maintenance personnel could have referred to the documents and could have prevented the aircraft from taking off. However, the three persons who could have performed the work (the apprentice, the AME, and the AME's partner) were aware that the mast nut had been removed and was to be painted on the evening of the occurrence. It is unlikely the AME thought that the mast nut had been installed by the apprentice AME or by his partner because the AME had received no notification or indication that the work had been completed. Consequently, it is reasonable to believe the three persons who took part in the removal of the mast nut, and who were present when the aircraft took off, did not remember that the mast nut was in the hangar. It is unlikely that the helicopter would have taken off without the mast nut if a document had indicated the work that remained to be done and if the AME had consulted that document before the flight. There was no indication that the pilot or the AME consulted the aircraft documentation before the flight. It would have been unusual for the pilot to consult the maintenance documentation.

The occurrence flight expedited the work to be done on the helicopter because it was not anticipated by the maintenance personnel. It had been decided that the droop restrainers and the mast nut would be painted the same day. It seems that, after a schedule change, the work methods of the maintenance personnel did not enable the AME to be aware of the airworthiness status of the aircraft at all time.

It is likely that the pilot was not aware that the mast nut had been removed. Given that no visible warning was placed in the cockpit or on the aircraft, there was nothing to tell the pilot that the aircraft was out of service. A visual aid such as a warning flag or sign, while not required by regulation, would have alerted the flight crew to the danger. Also the missing mast nut undoubtedly would have been noticed by the pilot if a preflight check had been done as specified in the aircraft flight manual. Consequently, it is reasonable to conclude that the pilot did not climb atop the aircraft and did not examine the rotor head. Even if the restrainers were visible from the ground, noticing that something is missing is probably more difficult that noticing that something is present. The AME responsible for the maintenance of C-GFSE was on board the aircraft when it took off and had worked with the pilot during the hours preceding the flight; this certainly gave the pilot a false sense of security.

Findings:

1. The main rotor head had separated in flight because the mast nut was not in place.
2. The helicopter took off without a mast nut.
3. The pilot did not check the rotor head before the flight.
4. The three persons who participated in the removal of the mast nut were present when the aircraft took off."

This Transportation Safety Board report is like so many other investigative reports. These air-

craft accident-investigators have become excellent detectives. With their scientific approach, up-to-date technology, and clever analysis of even the smallest and most remote data they can often determine precisely what happened. In this case they determined that the rotor head separated in flight because the mast nut was not in place. The part that is not so easy to determine is why it happened. Accident investigators can sift though the ashes and mangled remains of an aircraft, review maintenance activities, resurrect recorded data, study the pilot's history of qualifications and training, analyze the weather, look at the recent work/rest schedule, and interview witnesses to create an accurate picture of what happened. What they cannot do is determine what the persons who were involved in the accident were thinking during the setup and immediately prior to a fatal accident.

We can however, without attributing them directly to the persons involved in this occurrence, make some assumptions about this occurrence. The following are solely the opinions of the author

First, it is impossible to conceive of four persons who would intentionally allow this to happen. We can discount sabotage. This is, without question, another of those occurrences where the primary ingredients this fatal recipe were ordinary human characteristics and interpersonal relationships. Here are some of the factors that, more than likely, were part of this scenario.

Complacency – or as stated in the TSB Report – a false sense of security. One can easily see how and why this pilot would not have conducted a preflight check. He

was working directly with an experienced AME - a person whose specialty is to put an airworthy aircraft into the hands of a pilot. This pilot was working directly with the technician to install a new transponder, and to find the location of the roof/water leak. After the hangar work was completed, the pilot helped the technician move the aircraft out onto the ramp. But perhaps the biggest factor was that the technician was going along on the flight. The pilot could easily have been relying on the expertise of the technician. You can easily see how the pilot may have been thinking: "If the technician is going to fly with me, the aircraft must be OK. Why offend him by walking around and giving it another preflight check." Without question this is not the first time that a pilot has taken a technician's explicit or implicit word that the aircraft is OK.

Distractions, Schedule Changes, and Fatigue. No work, other than painting the droop restrainers and mast nut that evening, was planned for the occurrence helicopter that day. The pilot distracted the technician from other work, and redirected the technician to attend to the discrepancies on the helicopter. With this schedule change and redirection, the technician was focused on fixing the specific things they knew needed to be done – the transponder and leak. Distractions are notorious for blotting items out of short-term memory. Distractions can make one forget things, even important and obvious things. Things like the mast nut.

This technician had been working a heavy schedule. Fatigue is an element whose presence is impossible to determine through an autopsy, and cannot be proven

here. But fatigue is known to have a negative affect on every form of human performance - physical as well as mental. Fatigue can cloud one's judgment, make one accept a lower level of performance, and provoke one to rely on his expertise to get through tough times.

Assumption - To take for granted. The report focused on the fact that the removal of the mast nut was not recorded in any of the appropriate documents. The apprentice AME was the one who actually removed the mast nut - at the direction of the AME. The apprentice AME knew that the AME and the AME's partner knew that the mast nut had been removed. The apprentice AME could easily have assumed that with the three of them working the helicopter mast nut it was not necessary to record the work because certainly the "team" would remember. On the occurrence day the apprentice AME was not involved with the work on the helicopter; he was working on an aircraft adjacent to the helicopter. He was focused on his work. If the apprentice AME paid any attention to the work happening on the helicopter, if he thought of it at all, he could easily have assumed that the AME working on the helicopter would do all of the proper work to allow the helicopter to go flying.

Expectation - To look forward to a probable occurrence. The expectation here was that the post maintenance check flight would verify that the new transponder would operate properly. The focus was on the issues at hand – the transponder, and correcting the roof water leak. The issue of the mast nut was not "on the radar screen" for the pilot and AME.

We all deal with these human characteristics and interpersonal relationships. They are ordinary and well known, but often overlooked. Complacency, expectations, assumptions, distractions, and fatigue are abstract topics. They are subtle. They are not easily quantified or measured. They are not the same in every person. They may vary from day to day for an individual. But, regardless of their lack of concise definition, these qualities are genuine, and they affect every one of us.

If we are all subject to these human qualities, how can we avoid their negative effects?

There is no easy answer. Perhaps the start is to recognize that these vague human characteristics exist to some extent within all of us, and that we need to pay attention to what we are doing.

PILOTS' PERSONALITY PROFILE IN SEARCH OF THE 'RIGHT STUFF'

By Glenn R. Stoutt, Jr., MD - Senior FAA Medical Examiner

Profiling has become part of our culture. Probably the first time we became aware of it was from reading thriller novels, learning about the FBI's work at Quantico, Va., in profiling the serial killer – the 30-year-old white male who was unmarried, a loner/loser, quiet, unsocial, who was probably sexually conflicted. Now, attention is being directed at describing a profile of terrorists.

The military has spent years developing tests that might help identify those candidates who will make good astronauts or combat pilots. Several million dollars and at least three years are spent training airmen who will be expected to perform life-or-death missions in costly, highly sophisticated equipment. The major airlines also want to identify the pilots who will not only complete training, but also perform flawlessly for decades.

Tom Wolfe, in his superb book "The Right Stuff," has alluded to these traits, which are now a part of ourt language – the right stuff.

To many of the 600,000 pilots in general aviation, profiling is merely of general interest. In the military, it is critical. (Anyone can understand that a candidate for submarine duty who shows an abrasive personality, is hostile and argumentative, and – absolutely – has any degree of claustrophobia would be taken out of the mix at once. The Navy as its own selection process.)

How does the military select – hand pick so to speak – the best of the best out of a group of highly motivated, healthy, intelligent (IQ's of 120 to 130) young men and women?

The military soon learned that a rigid profile was not possible; there was no single pilot personality type. Some reliable guidelines were needed to predict the one essential requirement for all combat pilots, and this was Performance. To this end, Select-In and Select-Out criteria were defined. Select in? Probably should remain in the selection process. Select out? Drop from the group.

Here are a few of the attributes considered:

SELECT-IN:

- Resilient
- Confident (not bluster)
- Assertive (not arrogant)
- More Type A than B
- Conscientious
- Courageous
- Pride in Performance
- Compulsive (to a point)
- Likes order and consistency
- Methodical
- Reliable
- Systematic
- Makes decisions fast
- Good judgment
- High need for mastery
- Team player
- Highly motivated
- Self-disciplined
- Professional

SELECT-OUT:

- Impulsive
- Anxioua
- Inflexible
- Hostile
- Exhibitionist
- Egocentric
- Aggressive
- Indecisive
- Vague health problems
- Any alcohol problems
- Personality disorders

In a personal interview, a former F-14 instructor/pilot told me "the single (absolute) requirement for a fighter pilot is the ability to multitask". Good pilots can evaluate about five "signals" at once (radio, target, wingman, etc.), maybe only four for other competent pilots. The really great ones might handle seven.

The next requirement is the ability to prioritize these tasks. Then comes the requirement not to fixate on only one or two. If the airman puts number four and five as top priority or fixates on one task, he or she may be in for a world of hurt. A constant, rapid scan of instruments and cockpit is assumed. Good fighter pilots must learn to think three-dimensionally – have an awareness of what is going on above, below, and to the side – and how to maneuver exactly to get to or get away from other aircraft."

I hit the "mother lode" of inside information from our conversation. He told me that only 36 out of 77 in his group completed training, and that about a year or so together they were so alike that their conversations were dull – that they all thought alike about most things.

I imagine three-dimensional thinking is much like the uncanny court awareness NBA star Larry Bird, who knew exactly where the other nine players were and what thay were doing.

But, pilots do not all have the same personalities. A former Air Force pilot told me of a quiet, reserved, studious squadron member who loved classical music. He was called "the Professor." However in combat he was more like a cobra, deadly with intense concentration.

How does one translate some of these qualities to the pilots in general aviation? The task is somewhat easier with the airline group because many of them are ex-military. Military pilots and airlines pilots are more alike than not.

As an analogy, probably general aviation pilots are more like sports car drivers, and fighter pilots are more like Indy/LeMans drivers. Since there is no pilot personality profile per se, what are some of the (in general) characteristics of the "seriously committed" civil pilots.

- Conservative
- Adventurous
- More extroverted than introverted
- Skillful
- Competent
- Like order
- Methodical
- Like numbers (thousands in memory)
- Systematic
- Practical
- Prone to mastery of complex tasks
- Self-confident but easy-going
- Heterosexual
- Little need for "psychological insight (no getting in touch with feelings)
- Self sufficient
- Inflexible at times (difficult for spouse and kids)
- Low tolerance for imperfection
- Energetic
- Prefer short term goals rather than long term
- Need for high achievement
- Not "bookish" but read a lot
- Engineers more than liberal arts
- Socially reserved, but pleasant
- Tend to deny distress and conflicts

Good female pilots have the same skills as good male pilots. Male and female pilots are much more alike than men and women in the general population.

I thought of my own 41-years as an Aviation Medical Examiner with 10,000 pilot exams and came up with a few thoughts and opinions. I have also talked with pilots not only about flying, but also about their families, interests, and hobbies. Probably the most significant thing I could come up with was that almost all of the pilots made and maintained good eye contact. Their conversation was relaxed and they smiled easily and naturally. I can't remember any pilot with low self-esteem! I concurred with what I had read and heard – that their fathers had a strong influence on the decision to become pilots. All pilots are "slightly crazy"; they would have to be in order to be good flyers (my opinion). But, they are never dull. Pilots are fascinating people because flying is fascinating.

Anyone who has alone taken an airplane into the sky and landed safely has an element of the Right Stuff.

Yours for good healthy and safe flying.

- Glenn Stout

Taken from the Federal Air Surgeon's Medical Bulletin 01-4

The views made in this article are those of the author and not necessarily those of Bell Helicopter.

There I Was...

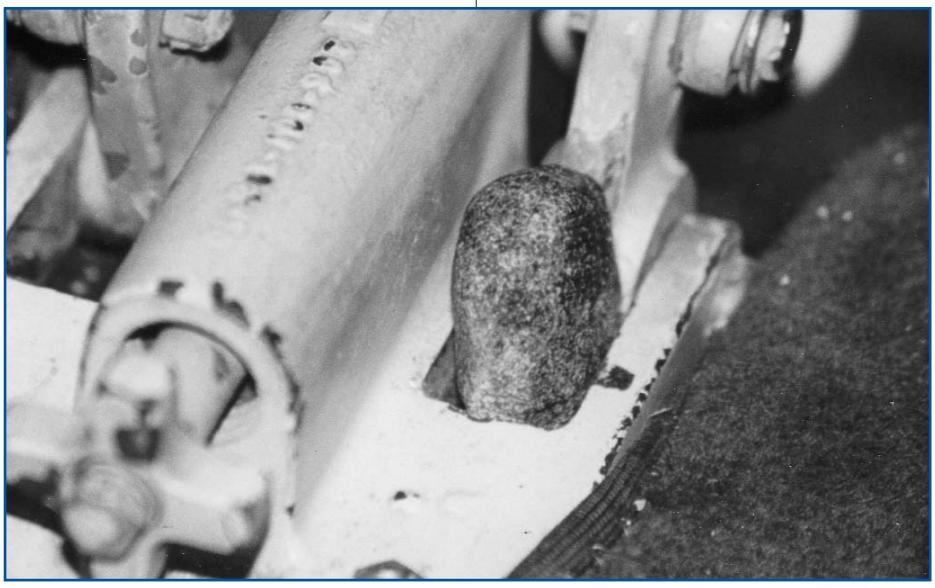
Here are some accounts sent to us by readers.

Sticks and Stones can break your bones

"I was participating in an excellent program to entertain kids with cancer. The local community organized a Camp – a free overnight Camp. There would be snacks and kids meals, craft projects, balloons, yo-yos, entertainment, cookies, teddy-bears, fishing, antique car rides, hand painting and more, to let these seriously ill children have some fun. My part, on the second day, was to give the kids a ride in a helicopter – a 206BIII. I did the flying. Each flight was a short trip with four kids on board. My wife and I planned a hot change-over of each load of kids. After each flight I would stay in the cockpit with the engine running. My wife and other helpers took care of getting the kids to the helicopter, strapped in, settled for the flight, met upon landing, unstrapped, and escorted from the helicopter. We set up a system to control these kids and we watched them carefully.

After all of the kids had their flight it was time for an adult flight. I had two adults in the back who had no helicopter experience; and an airplane pilot who had never flown a helicopter in the copilot's seat. Takeoff, climbout and cruise were all normal. I let the airplane pilot maneuver the helicopter when we were up at cruise - some gentle turns climbs and glides. He told me that he had once observed another helicopter hovering steadily over a point at approximately 600-700 feet above the ground for a long period of time - 30 minutes - while doing some filming of an event on the ground. He asked if I could do that. Sure. I told him we would come to a hover at about 600 feet (which I knew was above the high hover point of the Height-Velocity Diagram), stay there for a short time, make a 360 pedal turn, and dive down to gain airspeed and fly away. I didn't have very much fuel and I knew we could hover out of ground effect under the conditions. I set myself up to come to a hover over a paved highway adjacent to an open field that was crisscrossed by little gullies and ditches that drained water to a nearby pond. Parallel with the highway, there was a flat, fairly smooth dirt road going through the field. There was automobile traffic going up and down the highway, but there was no traffic on the dirt road.

I made an approach to my planned high-hover point. No problem with decelerating and sliding onto a smooth, steady, high hover. We stayed therefore a short while. Again, my plan was to do a brisk right 360 degree turn on the spot, and, when approaching the 360 point, begin a nose pitch-down to rapidly gain airspeed and fly away. I planned to lose some of the altitude as I dove and accelerated. I put in the right pedal to establish the right yaw – it was a good rate of turn. As I was approaching the 360 degree point I put in forward cyclic and began the dive, but I also wanted to put in left pedal to stop the yawing. But I could not. My pedals were stuck with the right pedal almost full forward. Wow! Things went bad in a flash. The helicopter continued to yaw rapidly. I hadn't gained any appreciable airspeed. As we were yawing I went through excursions where we were pointed what I think was 40 degrees or so down. I was



continuously making big inputs on the cyclic, initially just to get it back wings and nose level. I know we experienced some significant bumps – from the mast? I also remember getting the low rotor rpm warning. I managed to get it back level, still yawing very rapidly, and decided that I had some sort of tail rotor problem and that I wanted to land on the dirt road in the field adjacent to the highway. I lowered the collective and rolled off the throttle to fight idle. That was not enough to stop the rapid right yaw rate that we were experiencing. We were descending and now my cyclic inputs were not only to keep it level, but also to fly us toward my target landing area on the dirt road. Just think – we were descending at a very slow airspeed/groundspeed – and continuing to yaw at a very rapid rate. When the nose of the helicopter came around pointing toward the target landing spot I would already have the cyclic stick pushed forward. But as the helicopter yawed around and the nose was pointing away from the target landing area I had to have pulled the cyclic aft to keep the helicopter moving toward the target. As the aircraft was yawing I was continuously moving the cyclic stick so that it, and not the helicopter, was pointing toward my target landing area. Otherwise I would not be able to make the helicopter move toward my target landing area. These cyclic inputs were large and rapid. I didn't have time to think clearly and sort things out. This was time for flying the aircraft and obviously I had a handful. Things were just a blur. Nothing on the instrument panel was at all useful. I don't know what on the instrument panel I would have looked at if I could or wanted to. I don't believe there would have been any information there that could tell me what had happened. I kept looking outside trying to make the helicopter fly toward the target landing area. The passengers in the back were screaming at the top of their lungs. One in particular was screaming over the ICS that we all were going to die. That only made it worse. After the incident I thought about it a lot. I tried to think what I would have done differently if I had to do it again. I concluded that the only thing I would do differently is take a couple of seconds to take my left hand off of the collective and pull out my microphone plug to stop the panicky screaming coming through the ICS.

We continued the rapid yaw all the way to the ground. I pulled the collective apparently at the right time, and the skids were level. The touchdown was not too hard. There was no significant damage to the landing gear or fuselage with the exception of the tail rotor drive shaft cover that was hit by one of the flexing main rotor blades. It was the impact with the ground that stopped the yawing.

The cause of the rapid right yaw was a stone – apparently left behind by one of the kid passengers – which had become jammed in the tail rotor pedal assembly when I started that 360 degree turn while up in the high hover. It was allowed to fall into that hole where the tail rotor pedal shaft comes up through the floor plate because the little foam rubber block, which is to prevent FOD from getting into that hole, was missing. I never before even knew that those foam blocks are supposed to be there."

Our thanks to this reader for sharing this harrowing experience with us. It tends to support the old adage in Murphy's Law that if anything can go wrong it will. It also tends to support one of

the advertising slogans published recently by Continental Airlines in which they state: "We don't sweat the Small Stuff. Because there is no Small Stuff." A small stone in the wrong place can indeed provoke a life-threatening situation.

Just for information, the 206BIII tail rotor blades are symmetrical and have no twist. When the current 206BIII tail rotor is rigged, it sets approximately 23 degrees of pitch in the tail rotor blades with full left pedal. This would provide a tail rotor force that pushes to the right when viewed from behind the helicopter. With the tail rotor rigged for 23 degrees pitch with full left pedal, the tail rotor blade pitch will be approximately 10 degrees in the opposite direction with full right pedal applied. This would provide a force that pushes to the left with full right pedal. When the stone was lodged in the tail rotor pedal assembly, this pilot had a fixed pitch approximately equivalent to full right pedal. Which, of course, would make the helicopter yaw to the right. *Editor*.

Bird in the Air, Bird on the Ground

"This was at night in a 206B. I was in cruise going back home when without any warning whatsoever I experienced a bird strike. THUMP. It was a hard hit somewhere on the windshield frame. As with everything at night, noises and vibrations seem to be amplified. I really didn't have anything in particular that I was concerned about; but I was close to an Air Force Base and I thought it would be a good idea to land and look the helicopter over to see if the bird had caused any damage. The tower cleared me for landing on the primary runway. Then clearance to turn left, and taxi to the parallel taxiway back to a ramp where I could shut down. As I was hover-taxiing down the parallel taxiway all of a sudden I was hit by a blast of wind that pushed me hard to the left with buffeting pitch, roll and yaw. Before I knew it I was off the taxiway and over the grass, wrestling with the helicopter. I quickly got it under control and continued on my way to the parking spot, but not without a bit of a fright. The blast of wind came from a parked C-130 that was doing some maintenance work and had been running all four engines at some sort of high power. I had taxied right into his prop wash. I informed the tower, and the tower operator sheepishly apologized."

Marathon

"I was working a marathon. Had an observer/cameraman. It was an early takeoff – 0530. I logged 6.5 hours of flight time that day. I made short stops to refuel, snack and break without shutting down. Makes for a hard day. On last landing and shutdown, I noticed a moderate lateral vibration as the main rotor coasted down through 55-35% RPM. Then it went away. We had a bit of a problem of weights coming loose, and I told the mechanic to check it during his postflight inspection. I was tired and there was no more flying scheduled for me and the helicopter. I went home without doing any postflight check myself. When I arrived at the hangar the next morning I asked the mechanic if he found the source of the vibrations. He laughed. The cotter pin and weight on one of the main rotor dampers was missing. On future long missions I plan to shut the helicopter down when I refuel so that I can have the opportunity to give it an adequate check for things like this.

YOUR ANSWERS. . . . .

In our last issue we asked "What individual flight do you consider to have been your most rewarding?" Not many responses. Here they are

Human AD.

"Bell 47 Ag Pilot. While putting out liquid fertilizer in Wisconsin the farmer asked if I would give his mother of 80 or so years old a ride. I said yes after we finished spraying corn. When we were about 60 feet high after a long slow takeoff, she leaned over to me with a grin and said "Oh it looks just like on TV." This ride I will never forget because of her age and excitement."

" I guess I would have to say that my most rewarding flight would have to be my commercial check ride I recently took in January 2002. You see I first learned to fly a Bell 47 in 1981 and received a Private Pilot's license. After about a 18 year hiatus from flying, I've been blessed to resume and was able to get a commercial ticket … Not bad for a guy who's had his license for 20 years and only has 235 hours."

"I am one of about 16 dedicated pilots of the Florida Fish and Wildlife Commission. We fly such a wide variety of missions it is difficult to single out just one rewarding flight, but a recent SAR still gives me a warm feeling. It was Pearl Harbor Day, December 7, 2001. We were called to assist in an on-going search for two overdue fishing buddies, both in their 80's and both World War II veterans. How appropriate. By the time my observer and I launched out of Lake City the men had been missing for several hours. Our water patrol officers were concentrating their search in a maze of salt water creeks on the Gulf Coast near Cedar Key. We arrived on the scene about 2230 and put our Night Vision Goggles and NightSun to work. The old vet's boat was located an hour or so later so we hoped we were close. I was holding the ship in a hover about 10 feet over the grass while my observer slowly worked the NightSun through a stand of trees at our 12 o'clock. Something suddenly caught our attention off the left side and our eyes focused on the two old war vets, barely visible in the tall grass, standing there in our rotor wash, shoulder to shoulder and clinging to each other. I'm sure this wasn't the first tight spot these patriots had survived. We were so happy to see they were OK. I like to think the sight and sound of our helicopter brought back fond memories to them of their younger days. The most rewarding letter came to my observer and me a few weeks later. It was from the daughter-in-law of one of these veterans. She thanked us for taking time away from our families to help others. She closed by saying "You will always be a hero to our family." It was our pleasure. Call us anytime."

This last story, the rescuing of lives and the saving of property, is the kind that many helicopter pilots have in common. Helicopters, and helicopter crewmen, do indeed save lives

WHAT'S YOUR ANSWER ?

QUESTION:

"When you perform your preflight check, what items do you always check?"

_____

_____

_____

_____

_____

Mail your ANSWERS to: Bell Helicopter Textron, Inc.
Jim Szymanski
HELIPROPS Manager
P.O. Box 482
Fort Worth, Texas 76101

or e-mail:
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The primary objective of the HELIPROPS program and the HUMAN AD is to help reduce human error related accidents. This newsletter stresses professionalism, safety and good aeronautical decision-making.

Letters with constructive comments and suggestions are invited. Correspondents should provide name, address and telephone number to:

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HUMAN AD Heliprops

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