

**AD**  
HUMAN

**Heliprops**

HELICOPTER **PRO**FESSIONAL **PILOTS** SAFETY PROGRAM  
Volume 13 ★ Number 2 ★ 2001



“September 29, 1998 was a day where everything went wrong. I

was flying a B47D1 out of Oxford, Mississippi, doing 137 and 91 work for the Federal Government’s Boll Weevil eradication program. On the early morning of Tuesday, September 29, the weather was clear, and dawn was breaking with a gentle wind out of the east. After completing my normal routine of pre-flight and greasing, I headed out, circumventing the town to meet my nurse truck driver who carried extra fuel and chemicals that would be needed for the long day’s work ahead.

Approximately one-half to three-quarters of a mile west of the airport I experienced what appeared to be a bird strike in the rotor system. A few seconds later I experienced a brief minor vibration in the cyclic, which lasted only a fraction of a second or so. I looked down and saw only canyons and trees so I decided to return to the airport to make a precautionary landing for further inspection. About halfway through my turn the entire ship went into violent shaking and oscillations. Almost immediately the cyclic and ship were uncontrollable. I tried to level the ship with the game plan of activating the hydraulic bypass, which is located on the floor to my right. I quickly looked outside to get a mental picture of my attitude when directly in front of me was the brown roof of a house. I was shocked that I had lost that much altitude, and I knew there were folks sleeping in that house and I had to get out of there.

# “Are you all right?”

trees. I don’t know why or how, but suddenly I found myself giving every-

*Raising the collective, it became clear to me that whatever was partially broken in the rotor system was getting worse because now even flying with both hands holding the cyclic it took more strength that was in my being.*

*Somehow, I managed to clear that house, but I knew it was only a matter of time before the ship would tear apart. I lowered the collective just enough to allow me some time to regain control so I could milk enough air time to get down somewhere safe. Then directly in front of me I noticed an opening in the trees, which I recognized as the airport grounds. I felt that if somehow I could make it through that clearing over the road and to the grass on the other side I could at least try to slide or roll it in. I remember thinking about my landing options and having the thought that this ain’t gonna be pretty, but at least there were no more houses or people to contend with. Just as I had this thought, I saw a flicker of yellow coming through the trees from my left to right on the road ahead of me. I knew that moving object had to be a school bus. I looked to my right and there at my two o’clock was a grove of pine*

*thing I had to get that helicopter into those trees. It seemed like a lifetime, but the helicopter began to make a right turn. It was at that moment, with the trees directly in front of me, that the reality of the situation hit me like a ton of bricks. I am going to die. I remember very clearly yelling at the top of my voice, “God please help me.”*

*It was then I noticed that the tree tops were spaced far enough apart that once the rotor blades broke off, the helicopter could get through them to the road on the other side. I knew I had to get this helicopter down now. I gave it everything I had to drive the helicopter into the base of the trees and ever so slowly the helicopter responded into a steep right diving turn.*

*In an instant it was over. I could hardly believe it ... I was alive!*

*My seat harness was holding me upside down suspended in mid air. Then I thought “I’m on FIRE!” My entire back was burning something fierce. I tried to reach up with my right arm to turn off the master switch but my arm would not move—I could not even feel it. I knew that no matter what, I was not going to burn alive. I reached up with my left hand, unsnapped my*

*seat belt, and fell, hitting the earth on all fours. I then turned my attention to a small opening just to my left. Could I get out? I had to try. Crawling and squirming I somehow managed to exit the helicopter.*

*Standing up, I walked down to a waiting red*



B47D1 Oxford, MS. 29 September, 1998

car parked on the road. I heard a female voice asking, "Are you all right? Are you all right?" I could feel myself going into shock, and I remember asking her to please call an ambulance. All I remember then was the back of my helmet hitting the ground, but I felt no pain ... no pain at all. I rolled my head to the right and just before I closed my eyes I saw a large round tire come into my field of view. I looked up and there in front of me was the school bus.

I was not able to understand all the noises and sounds, and I had no idea how long I lay there, but my eyes were beginning to burn and I realized that the malathion I was carrying on board must have somehow gotten into my eyes. I tried to tell someone that my eyes were burning, but no one seemed to hear. Then the pain got unbearable while the noises and sounds seemingly moved around me at the speed of light. I couldn't hold on to them long enough to respond. As I lay there, a quiet blackness began to slowly engulf me, and I remember thinking this was it. Then this calm voice said to me, "Gerry, you asked and I answered." Next thing I remember is lying in the hospital emergency room. The doctor informed me that I had taken a very hard shock to my system, and while it appeared that I was bruised over 70 percent of my body, nothing seemed to be broken. I had a deep laceration on my right arm, and one over the bridge of my nose caused by my helmet visor. I had cuts over several areas of my body caused by barbed wire when the helicopter was impaled on an eight-foot fence post. "Other than that, you are a very lucky man," he



B47D1 Oxford, MS.  
29 September, 1998

stated, while at the same time telling me they decided to keep me overnight to determine if there was any internal bleeding. I walked out of the hospital two days later and returned to my motel room so I could heal enough to fly my airplane home.

While I was sitting in the motel room, the local police stopped by to check on me and deliver some personal belongings, as well as invite me to be their guest at an Ole Miss football game

After inspecting my helmet, I could hardly believe my eyes as to the destruction it had received. "Flight Suits," who sold me the helmet, replaced it with a custom blue one with the inscription, "You make the clouds your chariot and walk on the wings of the wind" on the back. They were so pleased with its performance they put that broken, beat-up helmet in their display case for all to see.

Today, when asked about the importance of wearing a helmet, I equate it to a saying I used to tell my flight students about preflighting. "The pilot who flies without a preflight is a walking dead man ... he just doesn't know it yet." In my

opinion, the same is true for the helicopter pilot or crew who does not wear a helmet, especially for those like myself who fly EMS or Law Enforcement.

The NTSB findings were that three feet of the training edge of the blue blade was missing and unaccounted for, due to an improper rotor repair that occurred about a month earlier. But, that is another story."

Our thanks to the pilot who contributed this story and photographs. For more information we recommend reading the National Transportation Safety Board Report MIA98LA254.

We certainly agree with the doctor's statement that this pilot is a very lucky man to have survived this high-energy impact crash. Luck, however had little to do with the handling of this crippled aircraft, and with the decision-making during this brief and terrifying descent.

The decisions to avoid the house and the school bus were instantaneous, on-the-spot rational choices. Choices that put the welfare of others before the welfare of

Cont'd. on pg. 7 ... **"All Right?"**

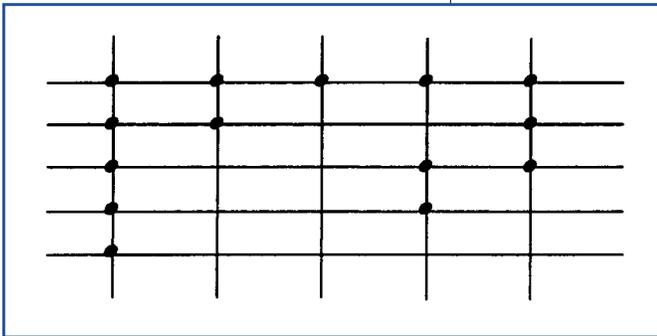
# There I Was...

**H**ere are some accounts sent to us by readers.

## Fellow Birds

"I was flying for this company in the Amazon. Fifteen days on, fifteen off. My missions were to give support for the Brazilian Oil Company – Petrobras. Petrobras does a lot of surveying in the "Hi" and "Low" Amazon Seismography basically.

No navigation aid support there ... very deep in the core of the jungle. They choose an area and divide it into slashes like this:



Each dot is a clearing spot where you land, place the workers who clear the area to later receive the equipment, power generators, tents, food, computers, staff, blah, blah, blah. Each clearing is usually no more than 2 miles from another.

So, I used to say it's a green carpet.

Temperature ... above 37° C. Humidity ... Oh, god! Bugs ... you don't wanna know.

We get there to the main base (which is a ship – if you can call it that) from Manaus.

First a three-hour flight in an A-Star to Carvari – this is the end of the world!

Then from Carvari another hour flight over the jungle.

The "ship" is there, on the shore of the Jurva River – an arm of the Amazon.

OK, we are three A-Stars and pilots. We routinely take off at eight in the morning, and fly one flight after another till six. External loads mainly (we don't know our weight and balance).

We land on the shore of the Jurva River because the ship is our

home. When we land (crash) on the pad made of logs, we try not to wait any more than about 2 minutes before taking off (and you would not wait either), because of the "squad" of

mosquitoes (the so-called "Pium") an invisible, bloody bug that eats you in the cockpit!

Now comes the dilemma – Should I stay or should I go?

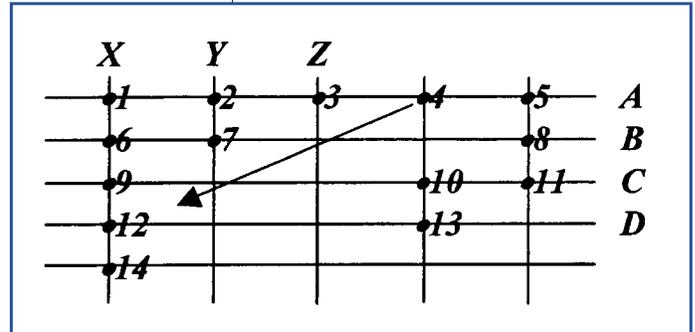
Listen ... I have no fuel gage! I had my own stick to check fuel on my stops at each clearing. You land ... engine running ... get out your stick ... open the latch and visually figure the amount of fuel you got ... this is Latin America!

Meanwhile, the Boss ... who is not a pilot, he is an engineer ... is picking on my back via radio, saying that if I don't finish the mission on time, and if I don't stop complaining about not having a "SSB" radio or torquemeter he will call Rio de Janeiro, and ask for another

pilot, because this one (me!) is delaying the job!

OK, so I get a message on my VHF radio – "Get Moving!"

I had to move a "settling" from one line to another. Like this:



I had to go from clearing #4 to clearing #12. It's late – 16:00 – near the end of the day. They (bosses) are pressing. Instead of flying along Line "A" till reaching clearing #1 and then turning south along Line "X" till reaching clearing #12, I decide to fly the diagonal (on my compass) direct from clearing #4 to clearing #12.

Tired ... 35°C ... Green Carpet ... Pressure ... Lose my job ... Now listen – I'm lost!

The "witch" light is on (20 minutes of fuel left).

I find a river!

I land next to the river under a tree (very tight space)!

I'm saved!

I love you Lord!

I'm near an Indian Community.

I have no SSB. Remember?

So I have to take off to get some altitude to be able to talk to the Base on my VHF radio.

One. Two. Three times I try. The third time I took off I hit the top of this Castanheira tree, and my friends, I came down!

From the column of smoke I'm sure my "mates" thought I was dead. But I was saved by the Indians. I'm here! Alive!

I'm single, and live in paradise. My mother got down on her knees

and said, "Please son, don't fly any more."

I was under pressure, trying to keep my job, and I failed myself. I forgot safety, and was careless under a tree.

You, my good friends of this planet ... think **Safety First.**"

## Off Frequency

"I normally fly my company's helicopter for commercial-only operations. Clean, light, steady work. Less than half the time do I have a passenger. But because of a natural disaster in my country there was a great need for helicopter support. I was involved in Search and Rescue, and whatever logistics flying that was needed. There were many other helicopters involved in these operations, most from other countries. To help keep the traffic separated at newly established landing zones we were all assigned a common communication frequency. I was inbound for one of the landing zones. But before I got there I had been off the common frequency to take care of some other business. I got busy and made the mistake of forgetting to return to the common frequency before I entered the pattern for the LZ. I was circling the field, looking down and to my left to determine the best route and direction for landing. For some reason I looked up and to the right. I was surprised to see a large helicopter coming right at me. I had to make an immediate evasive turn to avoid a mid-air collision. It was really close. Of course, the other

Arizona DPS Rescue Training  
Gila River



helicopter had been on the common frequency and had been transmitting his intentions. But as I later learned he didn't see me. I was really lucky."

## Birds on Strike

"We'd sent someone to scare the flock of seagulls off the runway with a car, but they'd settled again by the time we were ready to start the take-off run in the Cessna 150. Thinking they'd rise as usual when

we got near, I carried on, intending to stay on the ground and go underneath them, since in a C150 there's no chance of getting high enough to go over them as they go up.

To my surprise, instead of lifting off they eventually started to split into two groups, one group moving slowly right, and the other to the left, but remaining on the runway. In the center I caught a glimpse of a giant black-back gull limping pathetically around, feigning a broken wing as they do when they wish to draw your attention onto them and away from something they are trying to hide or defend. Directly ahead was the pathetic figure of one of its children, presumably injured. The gulls were going nowhere, and it was too late to stop. At the last moment most of them rose in a straggly fashion right in the path of the aircraft. One was cut in half as it hit the wing brace. Fortunately, there was no damage to the Cessna. So much for bird psychology."

## Clarification

In our last Issue, Volume 13 Number 1, we received questions concerning the Lead Article and the photograph adjacent to it on the front page. For more information on that accident, see NTSB Report MIA00TA200.

# YOUR ANSWERS. . . . .

*In the last issue we asked  
“Tell us about a situation  
where hot weather  
affected you, your  
crew, or your  
helicopter’s  
performance.”*



*Not much of a response to this one, but we have a few from earlier questions.  
**Human AD.***

## **Effects of Hot Weather on Pilot**

*“I was in California for training and to renew my Medical Certificate. Though I didn’t need to, I elected to go for a Class 1, just to make sure I could get one if necessary. It involved an EKG, but I’d had one a few months before for another medical certificate, and had had no problems. I’d arrived in California a week previously from a country where the temperatures were sub-zero, whilst in California it was 90 degrees.*

*I’d been let down by the person who was going to drive me to the medical practitioner five miles away. I walked and ran to the nearest bus stop half a mile away in the midday sun. The bus didn’t come so I walked and ran about two miles before another bus caught up with me, and I rode the rest of the way.*

*I arrived stressed and sweating profusely, but there was air conditioning and I soon cooled down. The assistant took me into a room to do the EKG before seeing the*

*doctor. She said my heart rate was 100, so we should wait. We waited but nothing changed and the doctor said to go ahead, that it would be OK. The EKG was faxed direct to Oklahoma. The doctor sent a note to say that there was a heat wave on, and I’d been running, and issued me the Class 1 Certificate.*

*Next day I got a phone call at the flight school from the medical practitioner saying he urgently needed to get the certificate back, that Oklahoma had queried the EKG, and he was in danger of losing his authorization if he didn’t get it back. He intended to come and find me if necessary! I said I’d take it to him, and asked him to try to sort it out. We had a three-way conversation with Oklahoma. We also told them I didn’t actually need the Class 1, so they said I could have a Class 2. Anything for a quiet life, since I had my check ride the next day.*

*I was naïve enough to think that was the end of the matter, but I had a letter months later saying they were going to examine the EKG in more detail because of what they called my tachycardia. They eventually wrote that I could keep the Class 2, but mustn’t fly when I had “symptoms.”*

*Since the raised heart rate was unquestionably caused by the heat, exertion, and the fact that I was not acclimatized, the only way I can interpret this is that you are not supposed to fly if you are suffering from heat stress! Also, it seems your heart rate can stay high for some*

*time after you think you’ve recovered. Other lessons I’ve learned are that even if your medical practitioner (and common sense) dictate that the problem is only transient, you don’t take chances with your medical certificate. My own doctor says that 100 is not even particularly high and he doesn’t know what all the fuss is about. But I’ve gotten myself a problem, since the FAA says I can apply again for a Class 1, I don’t dare to, so it’s caused me stress of a different kind.*

*P.S. The medical practitioner kept peering into my eyes, presumably to see if my pupils were dilated, which could indicate that I was taking dope, which I certainly wasn’t.”*

## **Here are a few responses concerning a previous question on Fatigue and Crew Rest:**

*“Fatigue is an issue in **all operations**. It’s impossible to legislate regulations to prevent it from occurring. It is however possible to educate pilots to minimize flying while fatigued.”*

*“Yes, the only two 135 operators I worked for blatantly and regularly made pilots break crew rest rules. On several occasions I was made to fly charters with only 6–8 hours sleep within a 36-hour period. With these two operators, there were not enough line pilots on staff to cover a 24-hour, 7-day-a-week, on-demand charter business. They would not hire more*

*pilots – so I changed careers after one too many scary situations I got myself into due to fatigue.”*

*“Crew rest and fatigue are important issues in National Guard and Reserve aviation operations, including ours. I’m the Safety Officer for a Huey Medivac Unit in the Guard. All of our crewmembers have other full-time jobs and many travel hours to get to the facility. Those familiar with Reserve aviation know that we have the same annual minimum flight-hour and evaluation requirements as our active duty counterparts; so crewmembers have to manage their time carefully and a lot of their “leisure” time is devoted to completing drills and training. The nature of the unit’s mission – medical evacuation – holds additional crew fatigue factors in the operational environment, as aircraft and personnel must be on alert status 24 hours a day.*

*Our risk mitigation takes three forms: Classes on fatigue and aeromedical factors are conducted annually. Additionally, we bring in accident investigators and health care professionals to speak about these topics during our annual safety stand-down. In accordance with Army regulations, the risk assessment/management process is formalized and required prior to any flight. The Commander or a designated representative has to concur with the pilot in the Command’s risk assessment before the mission can commence. Part of the standard crew briefing is an assessment of qualifications and*

*personal risk factors, such as fatigue. Once the mission is underway, the Army’s Aircrew Coordination (ACC) doctrine takes effect, which reduces the chance that a crewmember suffering fatigue symptoms can go unnoticed. For example, if a crewmember fails to respond to two verbal challenges during flight operations, he or she can have his crew duties assumed by another crewmember, to include taking away the aircraft controls. ACC also requires “positive communication” among the crew prior to and during aircraft maneuvers; this tends to keep aviators and “backseaters” engaged in what the crew as a whole is doing and counteracts some of fatigue’s effects such as inattention and fixation.*

*In summary, there are significant risks associated with fatigue in Guard aviation. We have a good program for addressing those risks and we have Command support. Aircrew personnel must understand what fatigue is, be trained in how to manage the associated risks, and maintain a professional attitude toward the problem to prevent fatigue-related accidents.*

**The Least Experienced  
press on where  
the More Experienced  
turn back to join  
the Most Experienced  
– who never left  
the ground  
in the first place.**

**“All Right?”** ... pg. 3 cont’d.

the pilot. These are examples of how cognitive, well-reasoned decisions can be made in an instant.

Other decisions, such as one to wear a helmet, can take significantly more time. In this case, the wearing of a helmet may have been the single most important factor in surviving the impact forces of the crash.

Such a decision – to wear or not to wear a helmet – has been, for some operators, one that has taken a long time and much discussion and argument to make. Some operators today continue to labor over this decision.

It is not our business to say who should or should not wear helmets during their helicopter operations. However, there is no question that helmets can, and do, save lives.

The use of helmets was addressed by Ryan, Studebaker, and Brennan in their article “Helmet Use: What Message Are We Sending to Patients” published in the *Air Medical Journal*, September 1994. In their summary they say:

**“Purpose:** *This study was conducted to determine how patients transported by helicopter react to helmets worn by air medical personnel.*

**Results:** *While the respondents had various concerns about the aircraft and flying, none had a negative reaction to the helmet use.*

**Conclusion:** *Helmet use does not have a negative effect on patients, and such a putative effect should not be used to justify the avoidance of by air medical personnel.”*

There may be other reasons to justify not wearing a helmet, but frightening the passengers is not one of them.

# WHAT'S YOUR ANSWER ?



## QUESTION:

“Tell us about something you did in your helicopter operations that you later considered to be “*stupid*,” but yet you were able to complete the mission/flight without any significant damage or injury.”

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*Mail your*  
**ANSWERS**

or e-mail:  
[jszymanski@bellhelicopter.textron.com](mailto:jszymanski@bellhelicopter.textron.com)

to: Heliprops Administrator  
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Volume 13 Number 2

Bell Helicopter Textron, Inc.  
Heliprops Administrator; P.O. Box 482  
MS 082835, Fort Worth, Texas 76101

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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: Bell Helicopter Textron, Inc.



Jim Szymanski  
**HELIPROPS** Administrator  
P.O. Box 482  
Fort Worth, Texas 76101

or telephone: 817-280-2428

or e-mail: [jszymanski@bellhelicopter.textron.com](mailto:jszymanski@bellhelicopter.textron.com)



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