

## New HELIPROPS Manager

On April 1, 2006 I, Jim Szymanski, retired from Bell Helicopter and John Williams took over as the new Manager of the HELIPROPS Program. John is very well qualified for this position. He will bring some new thoughts to this Accident Prevention Program that has addressed the Human Factors associated with the Pilot/Mechanic Human Errors that sometimes lead to helicopter mishaps.

John has a long and illustrious history in aviation and helicopters, including military, flight test, production, sales demonstration, flight instruction, and operations.

He'll introduce himself to you through the following interview.

"John, you and I have worked with each other for quite some time and know each other fairly well. How about you telling our readers about yourself. Let me ask you a few questions."

**First, where were you born, grow up, go to school, and now live?**

"Jim, I was born, raised, educated and married in Fort Worth, Texas. I am a product of the Fort Worth school system. In 1971 I graduated from Texas Wesleyan University, which is also in Fort Worth. It wasn't until I joined the Army in 1971 that I ventured to other parts of the world to continue my "education." Beginning with Primary Helicopter School at Fort Wolters, Texas, and then on to Fort Rucker, Alabama for advanced training."

**Tell us about your family.**

"I have a lovely, forgiving wife, and two daughters. I have a younger brother and an older sister. My dad lives nearby in Burleson."

**How and when did you get into aviation/flying, and in particular, helicopters?**

"Being raised in Fort Worth I was well aware of helicopters from a very early age. My first recollection is reading about how they worked when I was an elementary school student. My first helicopter ride was around 1961 at Six Flags over Texas, where I got a five minute ride for \$5 in a Bell 47J Model. My Six Flags 47J Model pilot was later to become my instrument flight instructor when I flew Chinooks for the Texas Army National Guard. I know this because my dad took a picture of



*John Williams, HELIPROPS Manager*

the occasion."

**How long have you been with Bell Helicopter?**

"I joined Bell Helicopter in 1977 when we were still working toward manufacturing 214ST helicopters for Iran. With the close of that program I was able to join the Production Test Pilot Staff in Hurst, Texas."

**What type of flying did you do when you first joined Bell?**

"I joined the pilot staff at Bell when everyone was expected to test fly, instruct, and demonstrate all the models we made, both twin and single engine. Additionally, to further our education and experiences, we served a tour of duty at Experimental Flight Test. Along with the training school; it was the best education I could receive.

Now, with the complexity of the helicopters we make it is nearly impossible for all of our pilots to be at the top of their game in

### INSIDE HELIPROPS

<b>New HELIPROPS Manager</b>	<b>1-3</b>
<b>Pilot's Responsibility</b>	<b>4-7</b>
<b>Q &amp; YOUR ANSWERS...</b>	<b>8-10</b>
<b>Discipline Judgment</b>	<b>11</b>
<b>Heliprops Order Form</b>	<b>12</b>

## New HELIPROPS Manager (con't)

everything. The tilt-rotor aircraft have added another dimension that demands full attention."

### Have you experienced any significant malfunctions or emergencies?

"I feel as others do in this business, it only takes one bad episode in a career to ruin it all, so we practice in training for that one event that we hope will never happen. My time came in 1991 when on a crisp Saturday morning at Bell, the engine quit in an OH-58D helicopter in which I was checking the autorotation RPM adjustment. It turned out that the throttle idle release only worked intermittently, so when I rolled the throttle to idle, it actually rolled closed. And the autorotation worked just as I had practiced many times. I was able to put it down in a field with minimal damage."

### Since you have been with Bell, are there any Bell helicopter models that you have not flown?

"I have flown in and instructed in every helicopter model we've made. However, I have never flown a tilt-rotor aircraft of any sort. Not even an orientation ride. I never was in the right place at the right time. And since I was not an airplane pilot, my destiny at Bell was to remain in the helicopter world."

### OK. I know you did some other non-flying things with Bell. Tell us about them.

"I left Experimental Flight Test in 1986 to become the Program Manager of our Contracted Research and Development Department. At that job I was able to look closely at how our helicopters were produced from just about every discipline. One of the most exciting programs I participated in was the develop-

ment of Bell's first remotely piloted vehicle (RPV) called the "Pointer." An improved version was later renamed the "Eagle Eye" and is known by that today. Of course, my Pointer was no more than a research vehicle. I learned to appreciate the genius of our technicians, engineers, and scientists when we were able to demonstrate the viability of a tilt-rotor RPV very early in its development stage."

### You are not one to brag on your accomplishments, but I think our readers deserve to know about some of them. In particular, those that have gotten into International Aviation Record Books. Tell us about them.

"I was able to participate early in my Bell career with the Federation Aeronautique Internationale (FAI). In 1978, I was selected to be a member of the first men's team to the Third World Helicopter Championship, held in the Soviet Union. Coming in second was not bad, but not satisfying. In 1981, Bell sponsored me and another Bell pilot, Mort Meng, to fly a Bell 206 LongRanger at the Fourth World Championship held in Poland. It was the era of "Solidarity" and Lech Walesa. Those were very exciting times in Poland. Bell and the U.S. Army walked away with the First Place win that year.

Coupled with my years of experience dealing with the FAI and literally growing up with the Models 222, 230, and 430 in test flights, it seemed a natural turn of events to team with Ron Bower when he told me of his interest in flying a 430 around the world westbound. Ron had just completed his journey in a Bell 206 eastbound in 24 days. Ross Perot, Jr. and Jay Coburn set

the first helicopter flight around the world record eastbound in about 28 days. The logical thing to do at that point was establish a record around the world westbound and be the first, which we did in about 17 days.

### During that trip how would you say fatigue was an influence, and how did you cope with it?

"Both Ron Bower and I were part of a pilot fatigue study conducted by NASA. At that time there was a great deal of data on airplane pilots, but nothing for helicopter pilots. NASA saw it as a great opportunity to put us to the test and gather data.

Ron and I both wore what NASA called an "activity monitor." Once, at a convenience store in Austin, a young sales clerk asked Ron what the device was on his wrist pointing to the activity monitor. In a firm and serious tone, looking directly in her eyes, He explained to her that it was a "Violent Offender Monitor...do you have a problem with that?" It was all I could do to keep a straight face. To this day, as I look back I have to laugh a little. I'll never forget the shocked expression on that clerk's face. Regarding the study we performed tasks prescribed by NASA scientists that correlated to what we were doing in the cockpit, and measured our competence at performing those tasks. I can remember getting involved in a NASA task while we were flying over the North Atlantic, only to look up and see an iceberg in my flight path. I learned not to get so occupied with the experiment from then on Ron and I developed several cockpit rules:

**1.** *We kept up a constant "chatter" or noise because when things got silent with either one of us it was the first indication that one of us*

was falling asleep. When that happened we started talking about anything, and opened the cockpit vents to force fresh air. Our longest day was day 2 when we flew from the east coast of Greenland to Montreal. We were roughly 18 hours at the flight controls having flown over the southern Greenland Ice Cap and the North Atlantic. We averaged only four hours of sleep per night during the speed record.

**2.** *Although we had a “cot” in the cabin, we agreed that both pilots would be up front in marginal weather, or anytime we were over open water.*

**3.** *We learned the value of chocolate covered coffee beans. They were handy and had the same effect as coffee.”*

**During your helicopter career are there any individuals you met or worked with that stand out in your memory? Why?**

“I was very fortunate to fly with and meet some real aviation pioneers. Joe Mashman was a Bell pilot who came to Texas when Bell moved its facility from Buffalo, New York. Joe was a remarkable pilot. I never saw such control in a JetRanger that Joe had. Then there was Ralph Alex. Ralph was Igor Sikorsky’s flight test engineer during his early helicopter test flights.

I was fortunate to meet Bart Kelley and Art Young – two Bell originators. I flew them around when they would visit Bell. By then they were retired.

**HELIPROPS has been a sort of grass-roots effort to show how ordinary Human Factors – Psychology, Physiology, and Ergonomics contribute to Human Errors. Do you, unlike me when I started, have any special formal education in these Human Factors?**

“Human Factors? I do have a Bachelor’s Degree in Psychology. My earliest interest in Human Factors came when I met Dora Daugherty, then Chief of Human Factors at Bell. My dad was a university professor and a friend of Dora’s in the Tarrant County (Fort Worth) Psychological Association. I was in Junior High School when I met Dora and once coaxed her into getting me a UH-1Flight manual. Other than U.S. Army training in Human Factors and experiencing things like “vertigo” at night, I have never worked formally until this opportunity came about.”

**Do you anticipate that the HELIPROPS Program will continue in the same general direction?**

“Safety is certainly something all pilots and passengers want. Bell has committed, along with the rest of the helicopter community, to reduce the accident rate by 80% over the next ten years. HELIPROPS is a cornerstone to that goal. Bell’s upper management has made the commitment. Not only will we take the same general direction, but increase the visibility of the helicopter’s safety worldwide with industry support. As far as I am concerned, it’s the only place to be.”

**The HELIPROPS Classroom and Seminar Presentations, as well as this Human A.D. Newsletter relied heavily on using actual experiences and accident Case Studies to highlight the Human Factors involved. Do you imagine that you will use some of the same technique?**

“You know Jim; I think I’ll have to develop some of those techniques you had that drew out those stories. I’ll do the best I can at soliciting them, but want the readership to realize that safety is the number one goal for

this transportation medium, and we all benefit from learning about those “close calls” we survived, so the next guy might be able to avoid them entirely. I think we can all say we learned from someone else’s mistake.”

**Have you had time to develop any new ideas for HELIPROPS?**

“I want to make the HELIPROPS program available to our customers worldwide with more participation by Bell staff pilots. It is not unreasonable to expect the safety program to grow in size. I am trying to get involved with other like-minded organizations, such as the HAI Safety Committee, and Bell’s own Safety Department.”

**Are there any particular Human Factors topics in which you have a special interest, or that you think deserve special attention? Things like Spatial Disorientation, Assertiveness, or Fatigue?**

Fatigue has got to be the number one human factors issue facing pilots today. The industry is faced with a shortage of qualified pilots, forcing current pilots into longer duty days. I know personally that my decision-making process suffers greatly toward the end of a long day at work. I am more apt to try to make it just a little bit farther because it has gone well to that point. That, in itself is flawed rationale. The helicopter has absolutely no respect for the number of years I’ve flown, or the fact that I have a helicopter ATP Rating. It can be an equal opportunity killer. I keep that in mind every time I crank an engine.”

**“Thanks John. I am confident that you will do a terrific job.”**



# Pilot's Responsibility

*This article will use a couple of actual events to raise a few issues about a pilot's authority and responsibility. We'll touch on topics such as assertiveness, authority/responsibility, limits, and operational risk management (ORM).*

*You may not agree with my editorial remarks, but that is OK. The objective here is to get you to think about this stuff.*

This first event was a personal experience back in 1970, but after 36 years the memory is still pretty clear. I was in the U.S. Coast Guard stationed in Elizabeth City, North Carolina. Elizabeth City was by far the largest aviation facility in the Coast Guard. Located there were several units: the Aircraft Repair and Supply Center (ARSC), the Aviation Technical Training Center, and the Air Station.

ARSC was the unit that overhauled/repaired/modified most of the aircraft models in the Coast Guard. That included the HH-52 and HH-3F helicopters, and the HU-16 and HC-130 airplanes. This was a Headquarters Unit staffed by a cadre of officers and enlisted men who possessed various technical knowledge and skills; as well as a large complement of civilian aviation specialists.

Also a Headquarters Unit, the Aviation Technical Training Center was, as the name implies, the unit that conducted training for enlisted men in various aviation specialties. It administered

basic training that made technicians out of pedestrians; and also prepared them to do field maintenance on the aircraft in the fleet.

There was also the Air Station, of which I was a part. The Air Station was a District Unit under the control of the Fifth Coast Guard District in Norfolk, Virginia. The primary duties of the Air Station were Search and Rescue, Law Enforcement, Environmental Protection, and whatever missions helicopters and airplanes could perform. Most of the missions were directed from the Fifth District Rescue Coordination Center (RCC).

My rank was Lieutenant Junior Grade (O-2).

Now the story.

It was a pleasant Sunday morning.

On the weekend typically the only crew on board the Air Station was the duty section for the day. The duty section was primarily the aviation crews for the ready aircraft poised to respond to missions. As I recall we had crews to launch an HC-130, an HU-16, and an HH-52. That meant two pilots for each type of aircraft, as well as the enlisted crewmembers.

Whoever of the officers was the highest ranking was also designated as the Senior Duty Officer (SDO) and responsible for making immediate Air Station operational decisions. I was one of the duty helicopter pilots, and junior in rank to Frank, the other heli-

copter pilot. That meant that if we flew together he was the designated Aircraft Commander – and responsible for making binding decisions during our flight. Both Frank and I were rated as Aircraft Commanders (USCG pilots were rated as Copilots, First Pilots, and Aircraft Commanders. A pilot advanced from Copilot to Aircraft Commander as he obtained certain numbers of flight hours, accomplished specific training, and accumulated some operational experience).

It was my turn to man the Operations Center – where the telephones and radio room were located. The other pilots and crew could be anywhere else – eating, working at their desk, sleeping, whatever; as long as they were immediately available to launch an aircraft.

The District called.

A fishing vessel about 60 miles east of Virginia Beach reported the need for a helicopter evacuation of an injured crewman. The duty crew, including the SDO, immediately assembled in the Operations Center. The circumstances called for medical attention, but the extent and criticality of the injuries were unknown to us. In the event it was a life threatening situation, the SDO decided to add the Flight Surgeon to the normal helicopter crew, fly him out, and put him on the fishing vessel to administer immediate aid as necessary before hoisting the injured fisherman and flying him to a hospital ashore. (The Elizabeth

City USCG complement warranted having permanently assigned medical personnel including two doctors, dentists, and various other medical staff. The senior ranking of the two doctors was trained and qualified to serve on helicopter missions of this sort).

So the helicopter crew would be Frank, a SAR Aircrewman, and the doctor. (It was typical to fly day helicopter missions

with only one pilot, and Frank wanted to do this mission).

They were airborne quickly and enroute to the fishing vessel. We also launched an HU-16 to provide some navigation, communications, and cover for the helicopter that far offshore. Frank made his periodic radio reports that operations were normal. But after about an hour the attendant in our radio room stuck his head out the door and told us the helicopter needed to talk to us on HF.

(The HH-52 at that time had a variety of communications radios. Of those the only radio that could reach a land-based station while the helicopter was at a low altitude and far offshore was the High Frequency (HF) radio).

The SDO and I went back into the radio room and talked to Frank. He had already delivered

the doctor to the deck of the fishing vessel; but in doing so each of the three main rotor blades had hit something on the fishing vessel. Immediately after the blades made contact with an attendant noise, jolt, shudder,

*...in doing so each of the three main rotor blades had hit something on the fishing vessel. Immediately after the blades made contact with an attendant noise, jolt, shudder, Frank landed the helicopter on the water.*

Frank landed the helicopter on the water.

(The Sikorsky HH-52 was an amphibian. It had pretty decent capabilities on the water. It was normal during training and operational flights to land and maneuver on the water. The

Mobile, Alabama Aviation Training Center Flight Instructors taught water landings and maneuvering, including shutting down the rotors while floating on the water. They also conducted practice touchdown autorotations to the water, both visual as well under the hood and on the instruments.)

The helicopter was floating on the water with its engine/rotor running to keep the generators on the line. He needed the generators to power the HF radio. With the main rotor RPM below 90 percent the generators drop off the line and the HF radio would not work. The three of us talked at length to determine what Frank should do. There was no way for him to see the rotor tips to determine what the damage was – rotors turning or not.

We needed more information and more help. We called the

Operations Officer (OPS). He contacted the Commanding Officer (CO), and the Engineering Officer (EO). The CO was a Captain (O-6), and the OPS and EO were Commanders (O-5). Soon the three of them were in the Operations Center. They too talked to Frank asking many of the same questions we had asked earlier. Frank was still floating on the water with the engine running – of course consuming fuel.

There was a consensus among the CO, OPS and EO that a Coast Guard or Navy salvage vessel would probably do significant damage to the helicopter pulling it out of the water and putting it on deck. In addition it was unclear how long it would take for a salvage ship to make it to the scene. In that interim weather or sea state could change and the helicopter could roll over and maybe even sink.

The EO suggested that if it was possible to inspect the rotor blade tips, and if the damage was negligible, the helicopter could be flown ashore. He came up with a plan. (Like in the Hollywood movies of the 40's and 50's, "This plan was so crazy it just might work").

He suggested that in another of our helicopters I fly him and a mechanic (To this day I can remember the mechanic's name AD2 Jackson) out to the damaged helicopter. He and Jackson would swim over to the helicopter, determine the condition of the rotor blades, and have it

*continued page 6*

## Pilots Responsibility (con't)

flown back if everything was OK.

All this planning was taking a lot of time. Frank advised us the he already had consumed so much fuel that he no longer had enough to fly it back to shore. No problem. We'd take some more fuel out in Jerry cans and refuel it internally.

(The HH-52 had the capability to open a hatch and add fuel to a tank from inside the cabin). We advised Frank of the plan and he finally shut down the engine.

With me, my crewman, the EO, Jackson, a standard load of fuel in my helicopter, and ten Jerry cans full of JP, we were going to be waaaay over the maximum gross weight limit. No sweat. I'd drive this wheel-equipped helicopter out to a runway and make a running takeoff.

We did.

On the way there Jackson used a line (rope) to tie the Jerry cans together like rosary beads.

Arriving on scene we found the helicopter riding peacefully on what were very large swells, with a large period, and no breakers. The sea anchor was out, and the flotations bags were inflated. The helicopter was doing just fine.

I landed on the water as close to the other helicopter as was comfortable and the EO and Jackson dived in. My crewman fed the ten Jerry cans out one at a time and JP being lighter than water, the cans floated on the surface. The EO grabbed one end of the line in his teeth (no kidding) and swam to the other helicopter pulling the Jerry cans behind. When they got there they both

climbed up the side and onto the transmission inspection platforms. The EO crawled out on the tailboom all the way out to the vertical fin, and there managed to stand up, back to the fin and holding on with both hands. (This was a lot easier said than done. The helicopter was moving with the swells and the tailboom and fin are rounded and were slippery with the sea water). Jackson, still on the transmission inspection platform, rotated the rotor head to position the rotor blades where the EO could take a look at each of them. The EO could not reach or touch the rotor blades, he could only look at them. He was satisfied that the damage was negligible, and that the rotor blades were fit for a one time flight to shore. The EO dove off the tail and swam around to get into the cabin.

The fuel in the Jerry cans was added to the helicopter tank, the engine started, and the helicopter with Frank, his crewman, the EO and Jackson aboard, flown to Naval Air Station Oceana, Virginia. I trailed behind. We left the doctor on the fishing vessel.

I guess all's well that ends well.

But apparently it was very close from not ending well. Closer inspection found that one of the rotor tip weights was being retained by only the bend in a bolt.

A day or so after this event a Commandant's message directed that "In the event of a known or suspected rotor blade damage in flight, the helicopter shall be promptly landed at the first

opportunity. Possible loss of the airframe subsequent to a safe landing is not sufficient cause to continue flight with rotor blade damage. Further flight of the helicopter with damage exceeding negligible and repairable as defined in the appropriate maintenance manual shall not be attempted."

What are the issues here?

Was it OK to fly the second helicopter way over the maximum gross weight limit?

I never questioned the decision and the plan. It was essentially the CO/OPS/EO's decision and plan. The risk in doing so was not great. The benefit of saving Frank's helicopter from further damage seemed to justify the risk. Neither I nor anyone else aboard my helicopter was in significantly greater jeopardy than in most other flights. However, I never was assertive enough to question if there was any negative impact of flying it at a weight that was so much over the limit.

I think you would agree that flying a helicopter at a weight greatly above the weight limit does pose some risks. These risks are however not clearly defined.

A helicopter can be flown at weights well above the limit. It

*"In the event of a known or suspected blade damage in flight, the helicopter shall be promptly landed at the first opportunity...Further flight of the helicopter with damage exceeding negligible and repairable as defined in the appropriate maintenance manual shall not be attempted."*

may not be able to hover at that weight. And the only way to get

it airborne would be to get it up to an airspeed on the back side of the power curve where the power available matches/exceeds the power required. Such a situation would require a running takeoff. A running takeoff is obviously easier in a wheel equipped helicopter than in a skid equipped helicopter. (During a previous life as a U.S. Army helicopter pilot, I, as did many, many other helicopter pilots in Vietnam, had to develop a soft control touch because of having to coax heavily overloaded UH-1 skid equipped helicopters into sliding/running takeoffs.)

One of the risks associated with flying a helicopter well above its weight limit would be the effect on the airframe and drive train. Accelerated wear could be the result. But that may be something that can be determined and quantified by maintenance and engineering. In an extreme case I suppose physical damage in the form of cracks and leaks could be the result. These too may be discovered and repaired by close maintenance inspection.

Another risk may be the result of the helicopter's handling and flying qualities. You may be in for some surprises. For instance, an autorotation at 500 pounds above the limit may be significantly different from an autorotation at 500 pounds below the limit.

In any event, routine, unjustified, unreported flights over maximum gross weight limits are, of course, not recommended.

Was the benefit of saving Frank's helicopter from any further damage worth the risk in flying it ashore? And could that risk have

been lessened?

Circumstances changed the mission from a medivac to one of preventing further damage to the helicopter. By the way, the doctor was able to attend to the fisherman's injuries and eliminate the need for a helicopter medivac.

Then, as now, the USCG had only about 100 short range recovery helicopters in their entire fleet. So the motive of the CO/OPS/EO to recover this helicopter without any further damage is understandable.

Some of you might think that those of us involved did the best that could be done under the circumstances and that the risks were acceptable.

Others of you might think that a visual inspection of only that which could be seen was not enough. Furthermore, the helicopter was flown ashore with four persons aboard. We could have gotten three of those persons aboard my helicopter for the return trip.

---

Here is another story reported to us by a reader that addresses the authority and responsibility of a pilot.

"I was the pilot of this R-44. I was flying the owner of this helicopter. He was not a pilot. Through a series of factors (inadequate preflight planning, adverse winds, and detours to look at stuff along the way), it became questionable if we would have enough fuel to get to our destination. I was anxious and explained the situation to the owner. Our options were to land in one of the many fields along

our route, and do what was necessary to get some more fuel. Which, of course, could be a big pain and take a lot of time we didn't want to invest. Or take the chance of a flameout in trying to get to our destination. The owner opted to go all the way. He indicated that he would take the responsibility if something should happen. Well, we made it OK.

But I sure thought about this later. I vowed that I would never put myself or my passengers in a situation like that again. I recognized that had a flameout and accident occurred, the NTSB/FAA/Insurance people would all look at me and not at the owner. I would be the one held responsible."



## MESSAGES FROM THESE STORIES

1. An Aircraft Commander/Pilot cannot abdicate his authority/responsibility.
2. Operational Risks can and do change during the process of a flight or mission.
3. Circumstances may force a solo pilot to make Operational Risk decisions on his own.
4. Operational Risk Management may be a group decision. A pilot may have the opportunity to get assistance in making a decision from crewmembers/passengers/ground personnel.
5. Be wary of group decisions – they may accept higher risks than would an individual acting alone.
6. It's not easy to be assertive when your boss tells you what to do. You must express your concerns when safety is at stake.

# What is your Answer?

*There is currently a worldwide effort underway to reduce helicopter accidents by 80% over the next ten years.*

**“What single issue or topic would you recommend as the one that should receive the greatest priority?”**

**Tell us about it.**



**Email your answer to:**

[jwilliams2@bellhelicopter.textron.com](mailto:jwilliams2@bellhelicopter.textron.com)

**You can also fax your answer to  
817-278-2428**

**or Mail them to:**

**Bell Helicopter Textron, Inc.  
John Williams  
HELIPROPS Manager  
P.O. Box 482  
Fort Worth, Texas 76101**

## Q & Your Answers...

In the last issue we asked

**“Do you know of someone who has fallen asleep in the cabin of a helicopter?”**

**UH-1.**

“I was acting as a Unit Instructor Pilot on a flight of five aircraft returning from a training exercise at Ft. Lewis, Washington to our home base in Southern California. In the second aircraft was a brand new young copilot who had recently graduated from flight training. The night before the flight, this copilot had, well, been partying it up until the wee hours and was a bit fatigued when the flight departed early the next morning. The experienced PIC took pity on the copilot and advised he would do the majority of the flying. During the first leg, the copilot drifted off and when the flight landed at Klamath Falls, Oregon, the copilot was dead asleep in the right seat.

Amazingly, the entire flight of five UH-1s landed, shut down, and disembarked their crews, with the exception of the one young copilot. In short order it was decided that a lesson on fatigue and crew rest could be taught to the copilot, in a perfectly safe manner. With all the crews gathered around, the battery was turned on and the low RPM audio was activated on cue, simultaneously with all the other pilots yelling “PULL PITCH!”

Captured by multiple cameras was the shocking reaction on the copilot’s face while waking up to the yelling and the audio, while pulling an armload of collective pitch. The subsequent solid red face was also captured, while the young copilot then stated that never again the future would the performance of flight duties be attempted with inadequate rest.”

**S-61.**

“My first flying job was copilot in a Sikorsky S-61, doing helicopter logging. The copilot does very little of the flying, due to production and safety considerations. The duties are mostly to monitor gauges, and keep the right side clear. Normal refueling cycles are one hour. During a typical flight the PIC is busy looking out the bubble window on his (left)

side, and has torque and ITT gauges over there, so the copilot often has little to do.

After a fuel stop, we headed up the hill again. I remember the first turn, but then waking up an hour later for the next refueling. I never mentioned this to anyone, and the PIC never noticed! Sikorsky sleeper...”

### **206L3.**

“Here’s an interesting story about something that happened to me during my first year of flying after leaving the Army. This was for a large FAR Part 135 operator in the Gulf of Mexico. One afternoon on an offshore platform I received word to fly to a nearby platform to pick up one passenger for a dropoff back at the shore base. I headed over to the platform solo and landed without incident. When my passenger came up he asked if it was OK to sit in the back of the helicopter. I was flying a B206L3 at the time. Sure, I told him, and he climbed into one of the rear back seats. Takeoff was normal and I was enjoying the sights of the Gulf as I headed north, toward our shore base located approximately 80 miles away. I was flying at approximately 1,500 feet msl. Everything was going smoothly and I found myself beginning to daydream somewhat when all of a sudden a loud boom was heard followed shortly by another very loud – and I do mean very loud – blood curdling scream. Instantly I received that quick wake up call of adrenaline in my bloodstream. With my eyes popped wide open I immediately began to look over my instruments and flight controls because something sure had definitely gone wrong with the aircraft and I was sure a Mayday was soon in order.

After a few seconds, and my situation awareness returning to me, I made contact with my rear passenger who didn’t have a headset on and determined what the problem was. Basically, the passenger was a fairly large individual who propped his head up against the window and had fallen into a deep sleep. Well needless to say, as he fell into a deep sleep, he began to unconsciously push against the window with his head. Next

thing, the window blows out and exits the helicopter (Thank goodness it did not hit the tailrotor). The passenger’s head popped out into the airstream. Now imagine being in a deep sleep and all of a sudden your head is pulled out into a 110 knot rush of wind in your face. Talk about scaring the stuffing out of you. Well, to this day I still include this story in my passenger briefings.”

### **206B3.**

“I was flying a 206B3 in southern West Virginia for a company on lease. The company was based in Pittsburg, with offices in Beckley, West Virginia, and Wise, Virginia. The trip started out with fairly short legs, but eventually consumed all day. The weather was hot and hazy in September, and visibility was about 2-3 miles all day. The trip came down to several legs to Wise, Pittsburg, and Beckley and all around. About 1600 I was inbound from Pittsburg to Beckley. No one else on board, no air conditioning, and no radio to listen to. Just maintain that same body position for a couple of hours. I remember passing Summersville, and the next thing I knew, I was over the New River Gorge, about 20 miles past Summersville!

I had been asleep while the aircraft flew about 20 miles.

Immediately I landed beside the road, jumped out and ran around this landing zone. I flew the rest of the way to Beckley with wide open eyes.

After putting the helicopter to bed, I went to my hotel, took the phone off the hook, and got a really good night’s sleep.

This had been only one of several consecutive long, hot, hazy days; and I had not taken care of my body’s needs like rest and hydration. I have told this story to many pilots, just to let them know that fatigue will creep up on anyone.”

### **R-22.**

“I was undergoing primary flight training during what in southern Arizona counts for early spring-

*continued page 6*

## Pilots Responsibility (con't)

time, around late January and early February. The air was still a bit cool, but the sun was nice and warm. We had the doors on the R-22 that day, and the flight departed the ramp at around 0900. I had about ten or so hours under my belt, so my confidence was coming along. I don't think I was necessarily cocky about my ability to control the helicopter, but I was starting to feel good about this whole pilot thing.

The plan of the day was to do pattern work at our local airport, which involved transitioning to a taxiway where we practiced. This was accomplished without incident. After a small amount of hovering maneuvers on the taxiway we cleared the area and told the tower we were ready to join the pattern.

Being the brand new student pilot I had my hands full on making a smooth takeoff, then establishing a climb into the pattern, while maintaining a scan of the instruments as well as watching for other aircraft. Therefore it took a moment to figure out a strange noise coming through my headset. It wasn't anything mechanical. It was my flight instructor snoring! Sometime between the "On the go" call to the tower and my turn into downwind the nice warm cockpit had put my instructor to sleep. I, of course, did what any reasonably trained student pilot would do. I stared at him in disbelief.

And then I continued flying the aircraft. He woke up just before turning base leg and we continued with the rest of the lesson."

### Haiti.

"Haiti. Long days. Intense operating environment. Crew rest interrupted due to discovering a very large tarantula spider crawling up my bare leg at 0200. Late in the day, flying home, eyelids getting heavy. Despite the desire to remain on the controls, recognizing the inability to maintain proper alertness, turned the controls over to crew mate."

### Disneyworld.

"Many years ago while flying tour helicopters around Disneyworld properties in Florida, I found that the sound of the 206B would put most children under the age of 4 asleep within the short duration of our 6 to 12 minute rides.

Personally, I would find myself sometime nodding off while driving a car a hundred miles, or while flying solo on cross-Florida returns from charter flights. I was diagnosed with Sleep Apnea, and have been using a CPAP Machine (Continuous Positive Airways Pressure. Ed) faithfully for the past 12 years. I had to endure two annual studies with wakefulness testing to satisfy the FAA medical department that I am fit to hold my Class II Medical Certificate.

I have had no problem with them for the past four years," and I no longer nod off while driving or flying.

### R-44.

"In May, 2005, my eight year old son Gabriel was struck by a truck and thrown 75 feet. He survived critical injuries thanks to the prompt and skilled individuals aboard a Maine LifeFlight Helicopter. Gabriel's recovery took several months and we spent much of that summer traveling in the US and Canada with me at the controls of my R-44 and Gabriel in the left seat (with the controls removed).

On one trip Gabriel was tired and couldn't stay awake. As he nodded asleep, slowly losing and then regaining muscle control, he suddenly nodded asleep and fell to the right and hit the cyclic stick, requiring corrective action and the use of my left hand to return him to an upright position. This didn't wake him. However, within a minute or two he was trying to sleep on the cyclic again. During his sleep state he could not be consistently repositioned away from the cyclic. He would immediately teeter back in the direction of the cyclic. For a while I held him up in place with my left hand. A little humorous for a little while, but it quickly got tiresome and was going to be an ongoing issue. I decided to wake him completely which required some shaking and extreme vocal volume and tone, "GABRIEL YOU HAVE TO WAKE UP!"

Once aware of his surroundings Gabriel grabbed a couple of pillows from the back seat and was able to get comfortable and sleep without interfering with the controls. It sounds funny, but a sleeping eight year old became a serious matter on this flight."



# DISCIPLINE

---

**Discipline** has two facets – *Self Discipline*, and *Supervisory Discipline*

In Aviation we have been taught *Self Discipline* – to do it right the first time and every time – because Aviation is terribly unforgiving of Carelessness, Incapacity or Neglect. It takes Integrity and *Self Discipline* to do the Right Thing the First Time and Every Time.

*Supervisory Discipline* is the solemn responsibility of managers at all levels. It is the Use of authority to monitor Line Pilots and Technicians for adherence to the rules. Supervising others to achieve operational results and simultaneously comply with rules is not an exact science – it is an art.

# JUDGMENT

---

Under normal conditions the Rules provide the framework for making decisions and taking action.

It requires keen *Judgment* to be able to assess a crisis or emergency situation, and to determine whether the prudent course of action is to choose if, and to what extent, a Rule may and should be disregarded. Such a *Judgment* must weigh the benefit against the risk.

The wisdom of solid *Judgment* comes through knowledge and experience.

# SAFE IN 2006





The **HELIPROPS HUMAN A.D.** is published by the Training Academy, Bell Helicopter Textron Incorporated, and is distributed free of charge to helicopter operators, owners, flight department managers and pilots. The contents do not necessarily reflect official policy and unless stated, should not be construed as regulations or directives.

The primary objective of the **HELIPROPS** program and the **HUMAN A.D.** 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.  
John Williams  
**HELIPROPS** Manager  
P.O. Box 482  
Fort Worth, Texas 76101

*or e-mail:*

[jwilliams2@bellhelicopter.textron.com](mailto:jwilliams2@bellhelicopter.textron.com)

# Yes!

I would like to receive my own copy of the **HELIPROPS HUMAN A.D.**

Please complete this coupon and fax, email or mail to the address below.



Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

City \_\_\_\_\_

State \_\_\_\_\_

Zip \_\_\_\_\_ Country \_\_\_\_\_

**Volume 18 Number 2**

Bell Helicopter Textron Inc.  
John Williams, **HELIPROPS** Manager  
P.O. Box 482 • Fort Worth, Texas 76101

Fax 817-278-2428

*or e-mail:*

[jwilliams2@bellhelicopter.textron.com](mailto:jwilliams2@bellhelicopter.textron.com)



P.O. Box 482  
Fort Worth, Texas 76101

PRESORT STD  
US POSTAGE  
**PAID**  
PERMIT 1859  
FORT WORTH TX