

## Wires

*The following actual wire experiences were given to us by the pilots involved. The first two were daylight VFR flights, and the third was at night.*

### Bell 47 Soloy

“What started out as a normal flying day just about ended my flying career just after sunrise.

As normal July days go for me, the day was very stressful at 05:30 with other problems at other bases where I have company aircraft based. I try not to fly much anymore with 15 aircraft operating in 3 states in the ag business. That is enough to keep me managing alone. But, I had a pilot call in late spring who told me he had taken another job, and as I had already had contracts for him to do, I had no choice but to fly.

We had been having a busy season; lots of rain for mosquito control pilots, the bugs were going strong and we had picked up other work because of another operator’s misfortune.

*“For a split second, you kind of sit there wondering what’s next. I remember glancing left and when I looked straight ahead I felt a big “Jerk!” like the brakes were put on. straight ahead I felt a big “Jerk!” like the brakes were put on. ”*

The flying I was to do was spraying drainage ditches for brush and weed control. I had sprayed this particular contract for many years and was only about 3 hours from finishing. I knew all the ditches very well and was able to move on the work very rapidly. I had been busy doing other flying and was tired. By the middle of July, it had already been a long season.

I had been flying about 1 hour and was cleaning up a few ditches that were on the far edge of the county. I had a phone call about this time (cell phones can be a curse) with a problem between a pilot and

his crew. I took care of the call and got back in my aircraft with another load. The service truck was sent to another location to meet me after I flew this load. I departed, and by now it was 07:30 and the sun was above the horizon. I proceeded to a ditch that I had sprayed 6 times before, but I always came from the east. This day I was saving time, I had other things to do this day and I was going to fly west to east to save time. I started my approach to the ditch over a small lake. I made my normal quick glances for obstructions and saw a power line along a gravel road, - no worry - and a house on the other side of the ditch. I just started my run when something hit the bubble. I was going slowly, about 30 mph, and about 35 feet above the ground and I knew that I hit a wire. For a split second, you kind of sit there wondering what’s next. I remember glancing left and when I looked straight ahead I felt a big “Jerk!” like the brakes were put on. I kept forward motion, but noticed I was going down with a rapid rate of descent. About this time, I remember seeing a white flash on my right side, something going by me. Later I found out it was my tail boom. The wire went over the bubble and went

*continued page 2*

### INSIDE HELIPROPS

Wires	1-4
There I Was... Accounts from our Readers	4-6
Q & YOUR ANSWERS...	6-10
What is Your Answer	6
Heliprops Order Form	12



### Wires (con't)

into the mast and pulled it back and cut off my tail in the air. This also cut my flight control tubes going up the mast, and I thought as I was flying to the ground, that I was along for the ride by this time. There were three violent vibrations before I hit the ground. When it did hit, I slid forward and rolled on the left side and then upside down into the drainage ditch.

The left side of the aircraft was in the water with me upside down and my head stuck in green slimy ditch water already covered with jet fuel. I got out and stood next to the wreckage in the ditch and got very angry. I couldn't have done this, and I had to get it cleaned up and get another aircraft to finish. About this time, the adrenaline must have worn off, my back started to hurt. All I could do was get out of the ditch and

crawl on the grass and lay on my back about this time. After 31 years of flying and 13000+ hours, I missed a power line that ran from one pole hidden in a clump of trees to another pole in a clump of trees. I was flying at an angle into the sun and even with my visor down I missed seeing it.

After this all had sunk in and I had 3 days in a hospital with nine broken bones in my back and also had 90 days to wear a turtle shell to keep my back straight to heal, I had a lot of time to think. My problem was that I had had too many things in my head at the same time and crews not getting along. In my mind I had already finished my mission and wasn't doing the basic – paying attention to flying the aircraft. I was very tired, had a lot of things on my mind, and was on automatic.”

### 407.

“This was in Welch, West Virginia, in the heart of the Appalachian Mountains. I was flying some VIP's on an observation flight overseeing the repairs to roads damaged in recent flooding. It was severe clear – blue skies and great visibility. One of the VIPs, a non-aviator, was in the left seat. We were flying along at cruise, level with the tops of the ridge line off to the right side. We saw something that needed another look, so I made a 180 degree turn, and rolled out facing into the sun, still cruising leisurely at 60 knots. I stayed to the right side of the valley, but the terrain was steep on both sides. The ridgeline to my right went up above us, but I stayed at the same altitude for a better view of what we were looking at. Just before wire contact I had an uneasy feeling. Subconsciously I must have thought the wires were there. I was continuously looking for wires, but apparently my focus was beyond this stretch of five separate wires hanging directly across my path. I was above the main wires and the static line was just a bit below my eye level. I remember that I made a split-second decision to not move the controls. I knew I had WSPS and hoped that it would do the job. The static line hit right in the jaws of the lower WSPS. I got a little jolt, but was instantly free and past the wires.

I decided to land immediately – it turned out to be right next to

a house in a field with wires all around. I had to maneuver to avoid these wires before setting it down.

I shut down and looked the aircraft over very closely three times. I couldn't even find a scratch. There were no marks other than the evidence that the WSPS jaws contacted something. Amazingly the OAT probe was still there sticking down without a mark on it. I called the FAA over the phone and later filled out one of those NASA ASRS Forms.

---

## 206L

"You won't find this in the NTSB files. This was a Public Use mission in a 206L with no WSPS. It was at night, and I might add that I remember it to be a very dark night as well. There was a solid overcast hence no moon or stars. I was the PIC and elected to sit in the left seat. Not trying to be boastful, but at the time I had been flying for more than 20 years. My copilot was much younger and had far less experience. We were to fly VFR from Point Mugu to Fresno (California).

Just to the north of Point Mugu rises the coastal mountain range – the Sierra Madres. I recall the tops along the direct route to Fresno somewhere around 7,000 feet msl. Most of the Sierra Madres here are National Forest – which means no towns, which means no lights on the ground. About 50 to 60 miles north of Point Mugu the mountains end and the huge San Joaquin Valley

sprawls out to Fresno and beyond.

We picked up Interstate 5 heading north toward Bakersfield, but never got that far. The fog in the valley was thick, thick, thick. It was a no-brainer decision. The mission was routine – it could be done another day, and the weather was (we thought) still VFR behind us.

We turned around and headed back to Point Mugu. Then, the same old story that you've heard many times before – the visibility deteriorated rapidly in building fog. The copilot wanted to press on – follow I-5 through the mountains, and then pick up one of the many roads on the other side back to Point Mugu. I wanted to go to Edwards Air Force Base, but didn't force it, so we continued down I-5.

---

*"If you've never been in a helicopter when the spinning rotor blades hit the ground you have no idea of the violence of the impacts. "*

---

It wasn't so bad in the valley, but as soon as we started into the mountains things got hairy. It think it was the Gorman Pass that we entered - it was very narrow with steep sides rising above us. We were down low and at a slow cruise. This situation made both of us nervous, but my copilot's nervousness began to show in jittery, random cyclic inputs. This was not a good idea. I got on the controls and wanted to decelerate to a gentle stop,

make a hovering turn and go back north into the valley and then on to Edwards - IFR if necessary.

I suddenly heard a scratch on the windshield and a "Thwang!" The "Thwang" was the OAT probe being torn off. I immediately put in hard left cyclic to roll us to the left. It worked. The main rotor blades cut all three of the wires we had hover-taxed into. I rolled wings level, and got it slowed down into a hover. Because I did not know the extent of the damage from the wire strikes, I wanted to get this thing on the ground immediately. I set it down on the side of the road where there was a steep slope. Things then happened very quickly. The landing light didn't give me a good picture of how steep the slope was, and when I lowered the collective I didn't have enough cyclic to prevent the aircraft from sliding to the left. In a flash, we rolled over and over several times before it came to rest on its side.

If you've never been in a helicopter when the spinning rotor blades hit the ground you have no idea of the violence of the impacts. It was like a quick series of explosions – loud noises, crashes and random shakes and jolts. If you were not strapped in you would never be able to hold on and keep yourself in your seat. You would just be thrown around uncontrollably. If you were not wearing a helmet you would undoubtedly whack your head on something. We both wore helmets, and were strapped in.

## Wires (con't)

Neither of us had any serious injuries.

We never saw the wires before we hit them. That's not a surprise. It was idiotic to be flying at night, in lousy visibility, through mountain passes where the terrain rose above us"

---

### Are wires and obstacles a hazard to helicopter operations?

*Yes, of course they are.*

**Why?** The wires are down low and that is where the vast majority of helicopters are operated.

Anyone who flies close to terrain, or conducts operations into and out of unprepared fields is subject to a wire experience. The stories above were shared with us by the lucky survivors of wires strikes. Unfortunately wire strikes are often more devastating than these.

A data base of helicopter mishaps in all manufacturers types of helicopters, both civil and military, all around the world. This data base shows that during the period January, 1994 till 25 May, 2004, that there have been (reported) 420 mishaps identified as wire strikes, with 409 fatalities! Wire strike mishaps are SERIOUS. An indication is that these 420 mishaps produced only 115 serious injuries – fewer than the number of fatalities. Of note is that 459 occupants of wire strike mishaps received no injuries – just a few more than the fatalities.

### **MORE THAN HALF OF THE WIRE STRIKE INJURIES ARE SERIOUS OR FATAL.**

Wires/cables of all sorts, and obstacles in the form of microwave antennas, continue to be erected at a rapid pace to serve the expanding real estate developments and communications industry around the world. Most of these wires are not marked or charted in any way to advise/warn helicopter pilots of their presence.

Helicopter pilots rely on their eyes to find the wires in their intended paths and landing zones. In each of the stories above the pilots were actively looking for wires when they hit them. Human eyes have limits. Under the

certain conditions of front or back lighting, the color/size of the wires, the orientation of the wire (parallel or perpendicular), and the color/shading/texture of the background it is nearly impossible to see a wire until you are practically onto it.

If we are to continue to conduct operations out of unprepared fields, and down in the wire environment, what can each of us do to prevent a wire strike?

- Make those high and low recons good ones. Be SERIOUS about it. While on short final continue to look for the wires you don't see. Just because you may see one wire does not mean there is not another one there.
- Make that final approach slow. Give yourself the option of aborting the approach. A lyric from an old song gives some guidance here. It says "Fools rush in where wise men fear to tread." Don't rush into a potential wire environment.
- Fly higher. If you are above the terrain you are above the wires.
- Install a Wire Strike Protection System.
- If you do night scene operations you may wish to develop a Night Vision Goggle capability. They may not let you see the wires at night, but they will help you find the poles that support the wires.
- Invest in one of the new technologies that can detect and warn the pilot of the presence of wires.
- Be careful whenever going down near the surface or beneath the level of the terrain.
- Make it PERSONAL. A wire strike is seldom an event that does not bring personal loss or harm.



# There I Was... *Accounts sent to us by readers*

## **LEAR 25**

“ In the beginning I was an airplane pilot. Now I also fly helicopters. A ways back I was crewing on a Lear 25. The boss wanted to go from Houston Hobby to Los Angeles LAX. I would be the copilot. The pilot was a former military aviator. We departed knowing the enroute and destination weather. VFR most of the way there, with the usual haze/smog and low visibility at LAX. The plan was to closely watch the fuel and groundspeed and try to make it to LAX without stopping for fuel. If our progress was not as we wished we would stop in Las Vegas for gas.

We were cruising at FL410. Had to. These Lears were gas guzzlers at lower altitudes. Well past halfway my pilot turned the transponder to Standby. He had his reasons. Before we passed abeam Las Vegas the decision was made to press on to LAX. Center later gave us a descent to FL240. “Roger out of 410 for 240...” was our reply; but we stayed up at FL410! Further down the road another lower altitude from Center. “Roger out of 240 for 180” said my pilot, but we were still up at FL410! There was much discussion between the two of us about having enough fuel to get to LAX. He said he knew how to make it.

We stayed at FL410 until we had to get down. At the top of the descent he pulled the Number 1 Engine all the way

to Cutoff, and the Number 2 Engine back to Idle!!!

When we got in the approach sequence he started up the Number 1 Engine, powered up, continued to a normal landing, and taxied to parking. We shutdown with just about enough fuel to make one go-around.

As we stepped out of the plane, and the boss walked away, my pilot said to me that what he had just done “...was the epitome of pilot professionalism.”

He managed to get the boss to destination without the delay and inconvenience of a fuel stop.”

## **HELICOPTER**

“This was a few years ago, and I still don’t want to have this get back to my company. I was coming back from an off-shore oil platform. Passengers aboard as usual. Weather over the water was VFR with an OK ceiling, but, as expected, it was lower as I approached the shoreline. I had to continue to descend to remain clear of clouds. I made it across the coast line and it got worse. I slowed down and kept getting lower and lower. I didn’t want to land anywhere out here – I convinced myself that the only choice was to make it back to home base. I climbed up (without ATC clearance or communications) into the clouds intending/hoping to get on top and to find a hole closer to home. I did manage to get on

top, but couldn’t find any breaks in the clouds to descend through. I flew north, again hoping to find some VFR conditions. No luck. Fuel became an issue. I turned back south and where I figured we were about five miles northwest of the base I began a letdown through the clouds (still with no ATC comms or clearance – no telling what the feds would do to me if I called them for help now). Since I am now telling the story I obviously broke out without hitting the ground and killing all of us on board. We saw the ground as we descended through about 400 feet above the ground. Not only did we see the ground, but I also knew where we were. Just a little left turn, and a few miles east was home.

We were soon on the ground. No problem. The passengers and I disembarked without a word. I tried to act as though everything was normal.

Oh, did I mention that the fuel low light had been on for about ten minutes upon landing?”

## **206B**

“I required more PIC time to reach my goal of Captain on the 222’s and S-76’s. The best way to do this in Canada is to go fly “in the bush.” Basically fly VFR on light helicopters where the flight hours per year are greater, and you are the Pilot-in-Command. I managed to get a job in northern British Columbia. Initially I had been

*continued page 6*

## There I was (con't)

flying some basic jobs, moving people around the Oil Patch. After my boss was confident in my skills he decided I was ready to fly surveyors around in a Bell 206B. This involved some greater skill as sometime you would have to drop off the surveyors from a hover so they could get on the ground and clear the area and build a bush pad for the helicopter to land on. The area we worked in had some trees anywhere from five feet to one hundred feet tall, with lots of swamps and very few areas the helicopter could fit in without some work. I was on about my 3rd or 4th survey job and had an experienced crew. We were about to go out and get the usual 2-3 gas/oil lease sites surveyed.

I dropped the crew off a little ways from the area they were to survey as the trees were quite tall in that area. I said that I would come back in a few hours to pick them up and would contact them on the radio before landing. About three hours later I came back and they said the pad was ready and they had finished the survey. I had to let down vertically from about 75 feet with the trees all around. I set down on the pad but kept the power up and signaled them to load. He gave me the signal to shutdown. I did not comply. I had a strange feeling in my gut about that pad. The surveyor gave me a bit of a dirty look. I kept the collective up to keep the full weight of the helicopter from bearing on this suspect pad. After all the gear was loaded,

and just as they were getting in, I felt the left rear skid sink as their additional weight was added. I pulled collective and kept the machine level. After everybody was seated and strapped in we climbed vertically out of the hole and returned to camp safe and sound.

When on that pad, if I had shutdown, I have no doubt that the helicopter would have slid/fallen off the pad, whether or not the engine and rotors were running. This could have resulted in some injuries and definitely major damage to the helicopter - our primary transportation out of this isolated bush location. I think this is an example of following your gut feeling and instinct. By the way, I did accumulate the flight hours to eventually advance to PIC in the 222's and S-76's."

## 212 IMC

It was me and several passengers in a Bell 212 on an IFR flight from Managua, Nicaragua to San Jose, Costa Rica. This was back in the mid '90's. Filed and climbed up on this not-too-long flight. I had plenty of fuel. I was in the clouds almost all the way. If you look at a map of the whole central American spine you will see it is mountainous with many peaks above 10,000 feet. On this route the highest terrain was around San Jose. I was at about 11,000 feet, still in the clouds as I approached San Jose, following the normal nav aids

*continued page 10*

In the last issue we asked,

**"Before and after landing in a confined area, how do you determine that the aircraft will have the necessary performance to fly out of it?"**

*On this one we received only a few responses. You'll see them below. But as mentioned in our last issue we had some responses left over from the previous question about the Wire Strikes. You'll see them and a few others as well.*

## Urban Confined Areas

"Most of the confined areas I encounter are sea-level, backyard locations surrounded by 50 foot trees; or heliports that have limited approach and departure paths because of buildings or noise restrictions.

A check of the Rotorcraft Flight Manual (RFM) performance charts show that at sea-level and Maximum Gross Weight or less, engine power is sufficient to hover, many times Out-of-Ground-Effect (OGE) too, so power available is not a limitation. However Takeoff and Landing Data (TOLD) charts show hundreds of feet necessary for takeoff and landing, and many times the Landing Zones we use don't have these charted distances

# Answers...

available.

I consider STAB (Size, Terrain, Approach/Departure, and Barriers) for choosing a landing spot.

Additionally I plan flights to confined areas knowing beforehand the helicopter's OGE capability.

For landing, remain at least 500 feet above the landing zone until intercepting a clear approach angle to the ground. Stop the descent in a stabilized 50 foot hover to blow the ground clear of snow, and, debris, if necessary.

For takeoff, I get immediate feedback of aircraft performance by looking at the top of the obstacle in the departure path (usually a tree), climb towards it, and note the power being used. If an overtorque is about to develop, stop the climb, land, lose some weight, and try the takeoff again. It really works."

## Rule of Thumb

"I know that if I can get a one foot hover I can make a running takeoff.

I know that if I can get a three foot hover I can make a normal takeoff.

I know that I can get a five foot hover I can make a maximum performance takeoff."

## R-22

"I primarily fly the Robinson R-22 Beta II. Even though it has a

larger engine than the R-22 Beta I still use the same procedure. Prior to leaving the airport, I always check the available weather information, especially the temperature and humidity. Then I keep my fuel load as low as will be safe for the flight. Then check the performance chart supplied with the aircraft. After this I check magneto performance, and if all is well my flight begins

Once at the landing area, high and low recons complete, pull full carb heat and make a steep approach and landing. Prior to leaving the confined area, I again check the performance chart, and check magneto performance. I bring the aircraft to a hover and position to give myself the maximum vertical and horizontal clearance. Then pull maximum manifold pressure and increase speed to 30 knots and perform the maximum performance takeoff. The R-22 Beta II is very responsive, and I have not had a problem using this procedure. A good general rule of thumb before performing a maximum performance takeoff is that you will not have a problem if you can see daylight between the rotor disc and the tallest object you have to clear on your departure."

## Prior Planning

"1. I predetermine my HOGE performance for the current and expected Gross Weights for the

*continued page 8*

# What is your Answer?

**Do you routinely conduct single engine helicopter operations at a "High Hover"? By definition what is your high hover-height above ground, duration of the hover, any airspeed at all? What type of helicopter? Why do you do it? How do you do it? Are you inside the Height-Velocity Curve?**



**Email your answer to:**

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

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

**or Mail them to:**

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

## Your answers (con't)

hottest part of the day.

2. I note whether the helicopter seems to be performing as normally expected on takeoff and throughout the day.

3. If there is any doubt, or if I will be operating near max power, then I will perform an OGE hover check, into the wind, with sufficient height above the ground for a recovery, to determine my power requirements and reserve power available. Depending on the situation, I may do a 360 degree pedal turn if I am going to do a "short haul" rescue."

### **“Before: Performance Planning**

I check the performance charts. Unfortunately, most light helicopter flight manuals do not have enough information to make an adequate planning. On the first takeoff from the base I do a hover power check. For light helicopters, as a rule, if I have at least 10% or 10 PSI of reserve power, I know I have a reasonably safe margin to land in a confined area provided the conditions remain the same. On a hot day, I also check the turbine temperature margin since this could be the limiting factor.

Arriving at the landing area, I do a high and low reconnaissance. The FAA Rotorcraft Flying handbook is a good guide.

**After Landing:** Another hover power check to confirm the predicted performance, especially if I picked up some passengers or cargo.

### **Type of Takeoff and**

**Precautions:** Check the area for obstacles with special emphasis on wires. Reposition the helicopter around the confined area, if possible, to reduce the angle of the takeoff path. I choose the takeoff direction based primarily on obstacles and wind direction although the latter is not the overriding factor unless the winds are strong. However, never takeoff with a tailwind. Under NVG's, I also consider the ambient light sources like moon position, city lights, vehicles that can negatively affect the goggles performance. I prefer to initiate the takeoff from the ground (no hover). I apply collective pitch in a continuous and positive motion with enough power to safely clear the obstacles. At night or under NVG's, I plan to clear obstacles by a 10 foot margin minimum. If there are wires present and even if I can see them, I plan to cross them over a pole."

*Here are some more responses about wires.*

#### **206L4**

"I was on an emergency flight, low level, several years ago and was maneuvering in close proximity to a T-intersecting single six-strand powerline. In the turn the line rose in my windscreen, as I had a severe angle of bank on and was skidding somewhat in the turn. It was obvious very quickly that I had to parallel the line in front of me and try to outclimb it before I reached the intersection of the second line. I pulled in about 95% torque and briefly

cross-checked my airspeed for 69 knots (best angle) and then back outside on the line to monitor my progress. Things happened fast and I closed in on the intersecting line all too quickly, necessitating me to cross the line I was paralleling or strike the pole at the intersection of the lines. I was not able to decel or make a 180 in the close proximity. As I crossed the line, at about 30 degrees, the wire went over the top of my right skid toe and rode up the skid tube into the saddle block, and I watched it all happen in slow motion. My adrenaline was surging and I thought to myself, "We're dead!" The rest I credit to the training I have received from the many talented and professional instructors over the years, and instinctively putting it to practice without panicking. As we were actually in a climb, the nose pitched down, we began an immediate hard right yaw, and the tail vaulted over the wire. We simultaneously did a 180 degree turn with low rotor horn warning being very prevalent. We were then flying backwards at about 20 knots and I watched the wire falling to the ground. Then the nose pitched up so that I could only see blue sky and I thought we were going over on our back. The machine shuddered hard and was shaking. I pulled all the collective that was there to keep the rotor disc loaded, as I was think about mast bumping. At the same time I had applied a cross control aft and left cyclic initially with hard left pedal. I instinctively checked forward on the cyclic. The aircraft began to pitch down through the horizon and yaw to the right – I thought

perhaps the tail rotor had been chopped off from main rotor contact. We did a hard 180 degree turn to the right and as the machine leveled our airspeed was miraculously nil. I checked the pedal effectiveness, felt tail wag and, from about 20 feet above the ground did the smoothest run-on landing of my life. I had two passengers on board and they thought it was all over.”

## CLIMB SPEEDS

In the airplane world there are several climb speeds. Two of them are Best Rate of Climb Speed,  $V_y$ ; and Best Angle of Climb Speed,  $V_x$ .

Helicopters also have a Best Rate of Climb Speed, and like airplanes it is the speed at which there is the maximum of amount of “excess power” between the power required and the power available.

Unlike an airplane, the helicopter’s Best Angle of Climb Speed may be zero. Under certain conditions many helicopters can climb vertically quite well.

### Bell Model 47

“I had planned to fly under some power lines and land in a field just beyond. Just after I had passed the powerlines and flying near 60 knots, I ran straight into a telephone wire. Didn’t see it until it was right in front of me with no way to avoid it. It hit perpendicular to the nose midway up the bubble, and it

stayed there, barely moving up or down or left or right. The aircraft amazingly decelerated without pitching or rolling. It just sort of quickly slowed down to a hover as it stretched and took the slack out of the wire. It never broke. I thought something was going to come apart or explode and that I was going to die. I finally realized that the aircraft was still flying – for just a very brief moment in a hover. I yanked the cyclic back, made a pedal turn, and landed on the sloped surface just behind the wire. I’ve heard some guys say that if a wire strike is unavoidable and imminent that rolling the aircraft onto either side would put the main rotor disc in an orientation to be more of a saw to the wires. I guess I’ll never know if that technique would have worked for me.”

### Another Bell Model 47

“This was an instructional flight. I was the instructor. The other pilot was also heavy, and the aircraft load gave us a forward Center of Gravity. There was a wire in front of us, perpendicular to our intended takeoff path, and only about 20 feet above the ground. It was far enough away to comfortably climb over. I was very surprised when the other pilot pulled the aircraft into a hover and then immediately nosed forward – abruptly and violently. Rapidly sending the aircraft onto a certain collision course with the wire. I jumped on the controls – couldn’t stop, get over or under the wire. I kicked full right pedal and we

hit the wire going backwards. The helicopter bounced off the wire and impacted the ground – hard. The main rotor blades hit the ground and jack-hammered and pitched us up. The disintegrating blades came thorough the bubble windshield, shattering it to pieces, and one of the blades took the radio off of the pedestal. Miraculously, neither blade hit either of us. We walked away from the wrecked aircraft with no significant injuries other than a slight back spasm for me.”

### Wire Avoidance

“Never outfly your visibility especially when flying low altitude in a wire environment (just stating the obvious!). Always assume a power corridor has a static wire (always!) Cross at a tower and never in mid-span, even on a routine patrol and especially when flying cross-country – especially in low visibility. Use challenge-and-response in a wire environment if a crewmember or passenger is available.”

### Wire Environment

“When “picking up a line” (initiating a patrol) after flying cross country to the start point, ALWAYS do a high recon overhead and then circle down, verbally confirming the location of all wires, towers, and lines with the patrol observer. I would add that the overhead circling approach should end with a rollout parallel to and outside and

*continued page 10*

## Your answers (con't)

above the line to be patrolled.”

### WSPS

“You should never, ever fly a helicopter in the wire environment that isn’t equipped with a wire strike protection (WSPS).”

### One other response to a past question

#### Flicker Vertigo

“I was reading the article in the Human AD on flickering vertigo and it made me think of my own experiences with this phenomenon.

It has happened to me a few times out here in India when working on the 430 and 407 models especially with a white background when the sun casts a strobe effect through the blades. I felt quite dizzy and disoriented and not a little nauseous for a second or two and was not aware of my surroundings until I moved away... I almost fell off the winglets on the 430 a couple of times. Once away from the strobe effect I felt OK but it was quite alarming at the time.... I normally wear prescription spectacles for myopia and I believe this contributes to the effect. I also found that if I removed my normal specs and put on a dark pair (prescription) it did alleviate the situation to a certain extent.” Has anyone discovered a way around this problem?”



## There I was (con't)

along the route.

When near San Jose I could see some funny indications on my needles/indicator/flags. Then I also lost comms with ATC.

Back then I had already become a believer in having as many options and backups as I could reasonably have to save my skin. I had my own GPS – a Trimble. I used the GPS to put me over the airport. From over the airport I reduced power 10% set a 500 foot-per-minute rate of descent and made a gentle descending turn. I made a radio call every 1,000 feet in the event there were other aircraft trying to do the same thing I was doing. Before I broke out comms came back up, and apparently the nav aids as well. But I didn’t trust them so I continued to descend until breaking out at 800 feet or so.

Without the GPS, positioning the helicopter over the San Jose airport would have been a dead-reckoning guess. I would not have done that. I had enough fuel, so I would have turned west and flown to where I was convinced that I was out over the Pacific before starting a letdown.

*If you have had experiences that you feel our reader's would benefit from, please submit them to:*

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





**ORDER ONLINE NOW!!!**

**BELL HELICOPTER STORE**

**[www.bellhelicopterstore.com](http://www.bellhelicopterstore.com)**

The official Bell Helicopter store is now open online! Apparel for everyone...

- caps and clocks – coolers and koozies
- gift and golf goods – lounge chairs and luggage – mugs and notepads
- pens and pins – shirts and t-shirts.

*Find all that and more.* Over the next several months, watch for new items as they are added – ship caps and models, patches, and more on the way.

Visit [www.bellhelicopterstore.com](http://www.bellhelicopterstore.com) often to see what's out there and check out what's new. **Order online anytime!**



**NOTICE**

**FAA WEBSITE**

The website <http://registry.faa.gov> will now let a Airman change, request, order any information pertaining to that Airman. You can even order a replacement Certificate.

Register and check it out.





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

*or e-mail:*

[jszymanski@bellhelicopter.textron.com](mailto:jszymanski@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 16 Number 2**

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

Fax 817-278-2428

*or e-mail:*

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



A Textron Company

P.O. Box 482  
 Fort Worth, Texas 76101

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