

# HUMAN A.D.

## Heliprops

HELicopter **PRO**fessional Pilots Safety Program  
Volume 18 ★ Number 1 ★ 2006

## What Can You Do... and What Will You Do?

The most effective method of drawing the unwanted attention of the media and regulators to the way you fly your helicopter or run your helicopter operation is to have an accident - particularly if it destroys the aircraft and involves fatal injuries. Oh yes, the insurance and legal guys will be there too. Then, if other operators who conduct a similar business in similar aircraft or in similar conditions have a few more accidents, others such as associations, safety boards, and academicians will take note and want to get involved with determining the appropriate fixes. In addition, some in the general public will formulate opinions of the relative safety of those types of operations.

Oh, you don't think so?

Let's review some past examples.

**U.S. National Transportation Safety Board, General Aviation Accidents Involving Visual Flight**

*Rules Into Instrument Meteorological Conditions, Report No. SR-89/01.*

Someone apparently noticed that VFR flights that inadvertently went into Instrument Meteorological Conditions (VFR into IMC) produced an inordinate number of fatalities. This statistical compilation of data clearly showed that VFR-into-IMC-condition accidents were greater than four times more likely to be fatal than all other types of general aviation accidents.

**Transportation Safety Board of Canada, Report of a Safety Study of VFR Flight into Adverse Weather, Report No. 90-SP002.**

This report also showed that VFR into IMC is four times as lethal as

other types of general aviation accidents. But it went further to explain some of the contributing factors - such as regulatory weather minima, operational norms, and aircraft equipment - and to propose some fixes.

**U.S. National Transportation Safety Board, Safety Study, Commercial Emergency Medical Service Helicopter Operations, NTSB/SS-88/01.**

Prompted by the high number of accidents in the then rapidly expanding helicopter emergency medical services operations, the NTSB conducted and published this comprehensive report in 1988. Among the many issues addressed were Spatial Disorientation, Flight Duty

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## What Can You Do... (con't)

Times/Fatigue, Weather Minima, Aircraft Crashworthiness, Pilot Training, Program Competition, and Absent Management. The NTSB recommendations were closely noted by the FAA and the HEMS industry; resulting in a number of regulatory changes and industry practices. The effort was apparently successful as the HEMS safety record over the next few years improved significantly.

Well, more recently, too many HEMS accidents have once again drawn the attention of the industry, manufacturers, HAI, FAA, AAMS, NEMSPA, NTSB and AHS. The HEMS operators have not been alone. Other operations such as those in the Tour Industry, and Offshore/Gulf of Mexico have had their share of attention-attracting mishaps too.

Consequently, there has been a rush on the part of all of the above-mentioned groups to come to the rescue, and to fix this not-so-good situation. One can hardly keep up with the many recent White Papers, Notices, HBATs, Recommendations and Movements. Listed below are some of the more recent and significant.

**U.S. FAA**, Notice N8000.301 *Operational Risk Assessment Programs for Helicopter Emergency Medical Services*, 1 August, 2005.

**U.S. FAA**, *Advisory Circular 00-64, Air Medical Resource Management*, 22 September, 2005.

**U.S. FAA**, *Notice N8000.307, Special Emphasis Inspection Program for Helicopter Emergency Medical Services*, 27 September, 2005.

**AHS International**, *International Safety Symposium*, Montreal, Quebec, Canada, 26 September, 2005. A gathering of hundreds of individuals/groups who initiated yet another movement toward a goal of reducing the (vertical flight) industry accident rate by 80% within ten years.

**U.S. FAA**, *Handbook Bulletin for Air Transportation (HBAT) 06-01, Helicopter Emergency Medical Services OpSpec A021/A002 Revisions*, January 23, 2006

**U.S. FAA**, *Handbook Bulletin for Air Transportation (HBAT) 06-02, Helicopter Emergency Medical Services (HEMS) Loss of Control (LOC) and Controlled Flight into Terrain (CFIT) Accident Avoidance*, 23 January, 2006.

**U.S. NTSB**, *Safety Recommendation A-06-12 through -15, Emergency medical services aviation operations*, 7 February, 2006.

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At the moment these documents do not set regulatory requirements – they are generally advisory in nature. But, for those of you who are responsible for supervising your operations and safety, these documents collectively are a good checklist of various issues for you to consider in building/improving your safety management system.

It is difficult to criticize the intent of these publications and movements – everyone is concerned and interested in accident prevention. However, some of you may have legitimate arguments against the wisdom and practicality of specific issues.

While the FAA ponders the NTSB recommendations; while the AHS formulates what to do and how they will play in this group effort; while manufacturers develop new and improved technology; and while trainers come up with better programs to train pilots/mechanics/crewmen, time will pass. Months, perhaps years will go by before these issues are resolved, and you will continue to fly your aircraft and perform your missions.

In the meantime, while these recommendations take some specific form, what can YOU do to prevent an incident or accident in your operation? Because, let's face it, all of those studies, recommendations, proposed rules, and promises for better technology will do next to nothing to help you NOW. It is up to you to do whatever you can to protect yourself and your aircraft from harm. It really will always be that way even after any or all of those recommendations and improvements are incorporated.

But back to the issue at hand - What can you do, and what will you do to prevent an incident or accident in your operation?

### Can you review emergency procedures or limitations?

Of course you can. The Flight Manual is always there in the helicopter. All you need to do is take a few minutes and open it up.

When have you last computed a weight and balance on your aircraft? I think it would be safe to say that every helicopter pilot does an "informal weight and balance check" before every flight. One that includes a glance at the fuel load, a count

of the noses onboard, and a guess at the weight of anything anyone loads in the cabin or baggage compartment, followed by the memory of having a load like this once before and that turned out OK. The last part of the “informal weight and balance check” is performed by actually bringing the aircraft up into a hover. If you can get the skids off the ground without an excessive overtorque, and not hit the stops with the cyclic or pedals you figure you are good to go. But do you really know if you are overweight or near a CG Limit?

You can do a real weight and balance calculation without the help from anyone else. All you need to invest is some of your time and effort.

### **Can you send yourself to factory transition training?**

Probably not unless you have the financial resources to afford it. Most pilots who get this kind of training are allowed time away from the job, and have their tuition and expenses paid by their employer.

### **Can you develop your own Inadvertent Instrument Meteorological Condition (IIMC) Procedure?**

Sure. You can do that with your eyes closed while lying in bed. For a basic plan all you need to do is think about this a bit. You may decide that you will not struggle to regain visual contact with the ground, but will get on the instruments, climb/turn as necessary to avoid obstacles, call/confess, and ask for help in getting to where you can see the ground again. You may go so far as to select specific airports and

specific instrument approaches that you would want.

You can develop your own IIMC Procedure without the help from anyone else. All you need to invest is some of your time and effort.

### **Can you buy a new helicopter?**

Probably not unless you are one of the very few who can afford it. Most pilots who see the need for a new, more capable helicopter and equipment are fortunate if their employer can afford it.

### **Can you improve your preflight check?**

Unless your preflight checks are already perfect, you can certainly improve. You can do that the very next time you walk around your helicopter. How many sight-gages do you have on your aircraft? Do you look at every one of them before every flight? While you are reading this article you can make the decision to do just that on all of your future flights.

You can improve your preflight checks without the help from anyone else. All you need to invest is some of your time and effort.

### **Can you take one of the professional courses at the HAI HELI-EXPO?**

Yes you can if you can afford it. Most pilots who attend such training are allowed the time away from the job, and have their tuition and expenses paid by their employer.

### **Can you conduct periodic engine power assurance checks?**

Of course you can. The flight manual specifies the parameters

to observe, such as engine temperature, air temperature, torque and pressure altitude. The procedures are also stated in the flight manual and a chart provided to measure the engine performance.

You can conduct periodic power assurance checks without the help from anyone else. All you need to invest is some of your time and effort.

### **Can you take a helicopter on a personal fun flight such as a trip up into Canada to do some fishing?**

Unless you have your own helicopter, or your work takes you up there and allows some free time to wet a line, your company is not going to let you take one of its money-producing assets off into the woods for your pleasure. Go ahead, ask your boss. See what he says.



### **Can you learn what preventive maintenance actions you as a pilot are allowed to perform on an aircraft you own or operate?**

Yes indeed. FAR Part 43 is clear on the specific Preventive Maintenance tasks a pilot is authorized to do. It lists among other things, *the Replenishing of hydraulic fluid in the hydraulic reservoir, as well as Replacing bulbs, reflectors, and lenses of position and landing lights*. Of course, before you attempt to perform

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## What Can You Do... (con't)

any of the actions listed as Preventive Maintenance you should be sure you are authorized to do so, and you know how to do it.

You can learn what preventive maintenance actions you as a pilot are allowed to perform without the help from anyone else. All you need to invest is some of your time and effort. You may though need some help from a mechanic or another pilot to learn how to do specific actions.

You get the idea.

There are many things you can accomplish totally on your own. You can and must take care of yourself.

There are other things that may require help from someone else. But don't let that stop you from being the one who initiates the action to get those things done. You may be the one – and the only one - who can influence those who have the authority and the means to get things done that you cannot accomplish alone.



## Ski is Retiring!

As of 1 April, 2006, I, Jim Szymanski, will no longer be a full time Bell Employee. On a part time basis i will however continue to write and distribute the "Human A.D."

Rest assured that your e-mail or fax requests for subscription or address changes will be honored.

# There I Was...

## Seat Belt.

"I am an FAA Pilot Examiner. On the morning of September 21, 2002, I was conducting a practical test for an Initial Certificated Flight Instructor (CFI) in single engine airplanes. The applicant, eighteen years of age, was planning to use a Piper Lance, PA-32R for those maneuvers requiring a complex aircraft and a Piper PA-28 for the remaining maneuvers. He chose to fly the Lance first.

The test was being conducted at Malcolm McKinnon Airport (SSI) on Saint Simon Island, GA. The weather was good VFR with light winds.

The maneuver being evaluated when the accident occurred was a 180-degree power-off accuracy approach and landing. The practical test standards (PTS) had been changed in August 2003 to include this maneuver.

The applicant initiated the maneuver on the downwind leg in the traffic pattern when abeam the specified touchdown point by closing the throttle and then maneuvering the airplane to touchdown at or within 200 feet beyond the specified touchdown point.

Since this was a CFI practical test, the applicant was in the right seat. He wore a large wristwatch on his left arm. The trim wheel was located on the floor between the two front seats. The seat belt was an older design and was released by pulling the top of the seatbelt buckle device. My seatbelt buckle was on my right side between the two front seats. I have no memory of the impact

and have only recently been able to piece together events immediately prior to the pilot's loss of control of the airplane.

When turning base to final, the pilot overshot the final approach course, was low, and losing airspeed. He made a pitch trim adjustment and when he moved his left arm back to the controls, his wristwatch caught the release on my seatbelt and released it. While this is not an excuse, it is an explanation. When my seatbelt released, it was an almost involuntary reflex that diverted my attention from monitoring the flight to the released seatbelt, which had fallen to the floor. I remember reaching for the end to reconnect it. It was only a few seconds, but that was long enough.

During the few seconds of distraction, he entered an accelerated, cross-control stall. At that point I took the controls and attempted a recovery. We were about 200 feet or less above the ground and I did not have sufficient altitude for a full recovery but did manage a partial recovery and struck the ground more horizontal than vertical. The airplane had a T-tail design, which did not immediately benefit from the accelerated slipstream produced by the propeller. A conventional design may have been more recoverable.

The airplane struck the top of a tree about 25-35 feet high on very short final, crossed a highway, impacted the ground about 50 feet short of the runway and skidded about 50 feet

## Accounts sent to us by readers

onto the asphalt. (I hold the record for the shortest short-field landing at SSI). The impact sheared the left wing, the airplane spun and the right wing was sheared. Somewhere during impact, the door sheared. (The Lance has only one passenger door on the right side). Fuel from ruptured lines ignited and the airplane began to burn.

An interesting side note on the use of seatbelts. The pilot was wearing his seatbelt and was not injured.

On the other hand, I was unable to reconnect my seatbelt and was seriously injured. I was unconscious from the impact, had a severe head injury, crushed right wrist, a severe ankle dislocation (the EMT said it had been rotated 180 degrees), several broken ribs, a punctured lung, and burns on my face, left arm and leg. I spent five days in Intensive Care. Thanks to some good doctors, I'm OK now.

While I don't know any pilots who don't wear seatbelts, I do know people who make excuses for not wearing seatbelts in cars. I can never understand why an otherwise intelligent person would not take two seconds to connect a seatbelt which can make the difference between life and death.

Complacency may have also been a factor. After doing hundreds of these tests with uneventful results, it's certainly a possibility. In the 36 years I've been a pilot, I have never put a scratch on an airplane or helicopter.

A second side note. Had it not been for a very brave young man who witnessed the crash, I would not be here today. He went immediately to the wreckage and pulled me to safety. According to witness accounts, the cockpit was consumed by fire about 20 seconds later. The young man has received numerous awards to include the Carnegie Hero Fund Award."

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This story obviously tells us how seat belts can save lives. But it also points out the insidious nature of interruptions and distractions. When our attention is pulled away from whatever we are doing it may be necessary to IMMEDIATELY PRIORITIZE to determine what really needs to be done next. It may take only an instant to make a conscious decision to ignore something that pops up at the wrong time. There are lots of examples

that many of you have experienced or can understand.

### WHAT DO YOU DO WHEN:

- The pilot's door of your 206B pops ajar (because you didn't close it properly) while you are in your takeoff climbout?
- Someone calls you on the radio as you are hovering for touchdown on your landing platform?
- While cruising along solo you drop your Airport Directory and it falls to the floor just behind the pedals?

It is a reflexive reaction to correct/respond to something that begs for your attention. Allowing yourself to react reflexively may not be best. You have to decide what is the most important thing to address.

### EC120.

"Last year I was on a flight to carry one passenger from Nurnberg to Stuttgart. I acted as a safety pilot because the other guy was not allowed to fly single pilot. The weather was everything but VFR with low clouds and patches of fog. We shouldn't have, but we gave it a try and took off from a private heliport south of Nurnberg. Soon it was clear that it was getting worse. We were flying low level with very low visibility. I had a bad feeling, and a minute later we were IMC. We lost ground contact, and after a few seconds pulled collective to climb and to get out of the fog. Fortunately, after an awfully long time of seeing nothing we finally climbed out of the clouds.

I have no Instrument Rating, but I received IFR training during flight school in Fort Rucker. This certainly helped me to concentrate on the instruments and to keep the helicopter straight and level.

Since then I have decided that I will never take off under such conditions again. We were lucky. If this was a single pilot it might not have turned out so well.

My advice to other pilots: Please stay on the ground under such conditions. No one will blame you. After a crash they will."



# What is your Answer?

**Do you know of  
someone who has  
fallen asleep in the  
cockpit or cabin of  
a helicopter?  
Tell us about it.**



**Email your answer to:**

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

**or Mail them to:**

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## Q & Your Answers...

In the last issue we asked

***“Have you ever had an occasion where you had some difficulty in handling a downwind takeoff or landing?”***

**206L.**

**A** I fly sightseeing tours part-time out of the New York City heliports in a 206LIII. On certain days, takeoffs and landings can be rather challenging. Take the Wall Street Heliport for instance. This grand heliport is located on the southeastern tip of Manhattan Island where the waters of the East River flow under the entire facility. As with everything in New York City, it is a very large place and offers an almost 180 degree range of approach and departure routes, unimpeded by obstacles due to the large open area of river flowing past. However benign the location may look to the uninitiated, it has one dark secret. There are days when the wind blows out of the Northwest and when they do, it is usually a blustery day after a significant change in weather. These winds weave their way through the downtown street caverns, over the building ledges, out onto the piers of the heliport where they make the two windsocks swing wildly as they argue about the correct direction in which to point. Of course, there is no way to takeoff into these winds as skyscrapers block the route. The alternative is a compromise of epic proportions. Into these churning tailwinds we add a few other issues. For instance, high gross weight; the loss of ground effect that occurs when you leave the pier; and the sailboats, barges and pleasure craft out tooling around on the river.

A pilot must take all these factors into consideration and just before takeoff he gets to make the final decision as to the optimum direction for departure. This mental effort must result in a plan to minimize the downwind component and be well beyond effective-translational-lift before getting out over the water. And finally, a pilot must make sure the route is clear of boats in case he has to pop the floats and put it in the water after an engine failure, only to be run over by a barge. And now, a prayer: Thanks to

the 'powers that be', conservative thought processes and a reasonable amount of experience, I trust that these conditions will not bite any of us in the behind at any time in our careers.

I hope this has not been too long-winded – or down-winded.”

### **UH-1.**

“We were a flight of two taking our aircraft to the west coast – U.S. west coast that is. I was the junior aircraft commander in the trail helicopter. Our scheduled fuel stop was in El Paso, Texas. We had a crew of four aboard, our baggage, some aircraft loose equipment, and some other assorted boxes. We weren't terribly heavy, but we weren't empty either. The senior aircraft commander in the lead helicopter wanted to make us look good on arrival, so he asked me to get up close in a tight formation. Who he thought he would impress with that I don't know, but I did as told.

El Paso is somewhere around 4,000 feet above sea level and it was a hot summer day. The tower gave us a straight-in to the ramp, which we really didn't need because that gave us a nice little tail wind.

Suffice it to say that on short final we both had our hands full using lots of torque and lots of aft cyclic, with nervous pedals. Our tight formation broke down. I'm sure it was quite a show for anyone who bothered to watch.”

### **S-62.**

“I was to be the pilot to deliver Santa Claus to the kid's Christmas party. The plan was to have the kids assembled outside, on the south side of the hangar. I would be airborne, with Santa, two Elves and a crewman flying out of sight and sound well to the north of the hangar. When

everything was ready I would be radioed to come-on-in with Santa, swoop around the east side of the hangar and land on the ramp just to the south of the kids. This would have the aircraft facing the west and the open cabin door on the aircraft right side facing the kids. The only flaw in this plan was Mother Nature having a brisk wind out of the northeast that day. The kids had no idea of what was happening, but the other pilots watching from the ground knew from seeing my nose-up attitude that I was not having fun struggling to get the helo stopped.”

### **BO-105.**

“I was flying a BO-105 in the Gulf of Mexico. It was the last flight of the day and I was landing on the assigned platform to spend the night. It was windy so I did a normal approach into the wind and then repositioned the helicopter to the edge of the platform near the tie-down points. It was normal company policy to park the helicopter near the edge of the deck so if somebody else had to land, he'd have enough room to do it. Also I turned the helicopter around so the tail rotor would be away from the stairs going to the galley. This put the helicopter into a quartering tailwind. I struggled a little bit to hover and to land in the right spot. After landing, as soon as I moved the throttle levers to idle, the aircraft spun about 90 degrees to the left. The tail boom was now hanging over the edge of the deck, and a good portion of the heels of the skids too! I realized immediately what happened. I spooled up the engines very carefully to full rpm and repositioned the aircraft – this time I put in some right pedal as I was throttling back to idle.”





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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:

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**Volume 18 Number 1**

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