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The Maintenance Factor

What Goes On Behind the Hangar Door? Part 2

In this issue, the second and last part of "The Maintenance Factor – What Goes On Behind the Hangar Door?" is featured. A complete download of the full article is available on the www.heliprops.com website.

Self-Inflicted Stress

Self-Inflicted stress is the one element a mechanic and supervisor will have the most control over. In other words, they have the ability to manipulate those forces that can react negatively on their work performance.

The five major elements in self-inflicted stresses are drugs, fatigue, alcohol, tobacco, and hypoglycemia.

1. **Drugs** – The use of certain drugs and prescriptions can alter our body chemistry

resulting in a physical or psychological change in our behavior. Side affects of medication including over-the-counter medications can cause drowsiness, reduced concentration and reaction times including physical discomforts. We often over medicate thinking that more is better and seldom take the time to read the warning labels. Does "Do not operate equipment when using this product," sound familiar?

2. **Fatigue** – Fatigue is the state of feeling very tired, weary or sleepy resulting from insufficient sleep, prolonged mental or physical work, or extended periods of stress or anxiety. Boring or repetitive tasks can intensify feelings of fatigue. Fatigue can be described as either acute or chronic.

Acute fatigue results from short-term sleep loss or from short periods of heavy physical or mental work. The effects of acute fatigue are of short duration and usually can be reversed by sleep and relaxation.

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MEET THE AUTHOR



Joe Schmaltz retired from the US Army after 21 years. He served 6 years as a NCO and crew chief and 15 years as an officer and helicopter pilot. In the US Army he flew the Bell AH-1F and UH-1H. He is also retired from the Colorado Springs Police Department after serving 10 years as a police officer and pilot with the Helicopter Air Support unit flying the OH-58C. He holds a Certified Flight Instructor Rotorcraft, Private Pilot fixed wing and an Airframe & Powerplant Mechanic certificate. He started with Bell Helicopter in 2006 as Instructor Specialist at the Bell Helicopter Training Academy. Joe holds a Bachelor of Science degree in Aviation Administration from the University of North Dakota and a Master's degree in Aeronautical Science from Embry-Riddle Aeronautical University.

VOLUME 21 • NUMBER 1 • 2009

HumanAD

AIRWORTHINESS DIRECTIVE FOR HUMANS

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It's a Team Effort

When I think back of my early flying days in helicopters some thirty-eight years ago, there were a few times when “maintenance human factor errors” certainly made a difference in the outcome of the flight. One incident stands out in particular. My first job as a helicopter pilot was that of a U.S. Army Aviator.

To make a long story short, we were to “jump troops” out of our Chinook (CH-47A) helicopter all day. The first sortie went off without a problem. We landed the aircraft, refueled and looked things over in preparation for the next flight. As was the custom, one pilot inspected the lower half of the Chinook while the other pilot “pre-flighted” the top half.

For this second flight; it was my turn to climb up and inspect the top half which included checking both fore and aft rotors, pylons, combining gear box (c-box) and the segmented drive shafts. The drive shaft connects the forward and aft main rotor transmissions which are synchronized. The proper inspection of the drive shaft required the covers for each shaft be opened and the pilot visually look around the drive shaft for any problems.

Note: months earlier, I had been given a lesson on “drive shaft inspection” by one of the more senior and experienced flight engineers (not flying that day) on what to look for when inspecting the main rotor segmented drive shafts. He encouraged me to use my hands and feel around the drive shafts; not just visually inspect them. The bottom side of the drive shaft was normally out of visual inspection range. It made good sense to me and became a habit to visually inspect and feel all around the drive shafts.

This day, my top-side preflight paid off. On this second sortie preflight, my hands discovered a screwdriver that was wedged beneath the drive

shaft and out of sight to anyone. After two hours of jumping troops during the first flight, this wedged screwdriver had scored the shaft enough for helicopter to be grounded and the drive shaft to be scrapped. Since the main rotors are synched, a severed drive shaft would have caused the blades to strike on another and the helicopter crash.

Unsung Heroes

If there is credit to be given, it would go to that senior mechanic / flight engineer who taught me to how to properly preflight a Chinook's main drive shaft some 38 years ago. The cost of that mistake could have cost the lives of 33 troops and a crew of three. This was just one situation, but there are many instances where aircraft mechanics / electricians have personally saved me from having to exercise my emergency procedure skills, because they caught something before I took off which could have resulted in an emergency.

Most professional flight engineers, mechanics and electricians work tirelessly at maintaining their aircraft with an excellent work ethic. They realize there are lives and property at stake. So how should we thank people who usually do not want recognition? Most are true professionals that perform their jobs without seeking any attention. However, there comes a time when it is appropriate and just good sense to recognize and show appreciation to the “behind the scenes” maintainers that keep our businesses thriving and aircraft safely flying.

The FAA began giving certificates of recognition to FAA A & P mechanics for 50 years of continuous service via the “Charles Taylor Master Mechanic Award” in 1992. The award was named for Orville and Wilbur Wright's mechanic, perhaps the first “unsung hero in aviation.” Charles Taylor not only was the mechanic for the Wright Flyer, but he actually built the engine which powered the craft.

To be eligible for the award the mechanic must have been an FAA certified mechanic or repairman working on N-registered aircraft maintained under the federal aviation regulations for a minimum of 30 of the 50 years required. The remaining 20 years may be accepted if that individual served as an aircraft mechanic / repairman in the U.S. military. For more information and how to submit for the award read the FAA Advisory Circular, AC 65-26C Subject: Charles Taylor Master Mechanic Award.” U.S. operators can go to www.faa.gov/content/Awards/Default.aspx for more information or their local Flight Standards District Office (FSDO). Non-U.S. operators can check with their Civil Aviation Authorities for similar recognition programs for pilots and mechanics.

Pilots, Mechanics/Flight Engineers: Call for Stories

One of the most popular features over the years has been stories of readers describing situations they have encountered while flying. I invite you to submit your “story” or letter so others may learn from your experience or get a chuckle.

The HELIPROPS newsletter is expanding its scope to include mechanics and flight engineers. So, share your experiences. We learn from one another and you might have the answer or common experience someone is looking for.

Your Flight Safety Management Program

How Does It Measure Up?

The ultimate aim of any Flight Safety Management Plan at all levels within an organization is the reduction and elimination of costly accidents that directly affect the operational capability of any given company. Personnel and equipment losses, resulting from any accident, constitutes an unacceptable drain on the resources on which an organization depends for its existence.

A primary concern of a Flight Safety Management Program is not safety for safety's sake alone. It is recognized that there are certain inherent hazards in commercial helicopter flying which must sometimes be accepted in the interests of job accomplishment. However, recognition of these hazards does not dictate their blind acceptance; rather, the recognition of the risks should serve to indicate more exactly where the major flight safety preventative effort should be directed.

Experience has shown that the establishment of a Flight Safety Management Program is necessary to keep accident rates to a minimum low.

Because operational effectiveness and job accomplishment is the operator's prime responsibility, the burden for flight safety must, therefore, rest personally with him. Flight safety is thus a function of the operator's direction. The operator, in turn, because of the complexities of modern helicopters and the unusual environments in which it is capable of being worked, must rely on his executive, technical and administrative staffs for expert advice.

These supporting personnel also should become directly and very closely involved in all aspects of the Flight Safety Management Program. It follows then, that flight safety (accident prevention) is not the responsibility of one person alone; rather, every person connected in any way, however remotely, with the helicopter operation and must share in this responsibility. The manufacturer, parts suppliers, vendors, users and their related personnel, all contribute their own specialty to the end that accidents do not occur.

The causes of accidents originate in a variety of ways, such as an incorrect statement regarding the operational requirement, through design, testing, manufacturing and operating usages, and environments. Maintaining (or lack of maintaining) the helicopter properly, as well as flying techniques and knowledge are also contributing factors.

Other causes come from the training of air and ground crews and the operational risks which are inherent in the sometimes unusual conditions under which helicopters are asked to operate. The great majority, however, can be traced to human fallibility. In most cases this can be countered by higher professional standards in flying, servicing, planning, administration and staff work, and by maintaining a high morale; all of which are products of inspired leadership. It is, therefore, the supervisors at all levels who can do the most for flight safety. Furthermore, the operator is responsible for operational efficiency, so he must be responsible for the implementation of flight safety.

Experience has shown that the establishment of a Flight Safety Management Program is necessary to keep accident rates to a minimum low. Such a plan and its organization must be advisory and supported by the organization's leadership. Flight safety is a means of achieving operational efficiency and is not an end in itself.

To be most efficient and effective, a flight safety program must have an adequate system for reporting, investigating, collating, study and analysis, and a mechanism for the exchange of accident data. It must be able to advise on accident risks, seek potential causes, suggest remedial action and publicize accidents and their causes so that all may benefit from experience and experiences of the few. Thus, flight safety does not run against the operational aims of the operator, rather, it enhances the performance capability with a big plus – a built-in safety factor.

Ask yourself, "How does my organization stack up with regards to an effective Flight Safety Management Program?" If you don't have one, consider obtaining assistance from a professional safety management auditor or at least obtain a "generic SMS format designed so it may be adapted to your organization's structure, regardless of size. The next issue of HELIPROPS will feature such a format and will be soon available for download at: www.heliprops.com.

VOLUME 21 • NUMBER 1

Heliprops

Helicopter Professional Pilots Safety Program

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, mechanics 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
817.280.3688, fax 817.278.3688
or the Comment/Feedback link at: www.heliprops.com

RELEASE STATEMENT: For photos or written submissions, please include a brief statement releasing your material to Bell Helicopter for use in the Human AD newsletter.

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Accounts from our Readers

Fail Safe

By Lloyd D. Knight



We all learned from that, about following the Flight Manual procedures and not applying our own 'overkill' additional actions.

What's Your Story?

If you have an account that you would like to share with other *HumanAD* readers, please send them to:

Bell Helicopter Textron Inc.

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It has been my experience over many years that often pilots do not understand the principle of 'fail safe' design, as it applies to the electrical/electronic control of aircraft operating systems. To illustrate this, I will describe in layperson terms the operation of the hydraulic, boosted control system in the Bell 205, and an incident that almost had a nasty outcome.

Because of the heavy forces needed to control the rotor system, a transmission driven hydraulic pump supplies pressure to servos that reduce the stick loads experienced by the pilot. In the case of total hydraulic failure the helicopter can still be flown, albeit with some difficulty. Because hovering at max gross weight in this condition might be virtually impossible, a run-on landing would be required.

A more difficult failure may occur when one hydraulic servo fails, but the others continue to work. This means that the controls are boosted in some parts of their movement, but not in others. Such a failure could easily result in an aircraft that is un-flyable by the average pilot. So Bell provides a switch that allows the pilot to disable/override (turn off) the hydraulic system. When this happens, the pilot still has to contend with a hydraulic failure and OFF condition like a total hydraulic failure. However, all the stick forces are equally high, and the aircraft is still flyable.

The hydraulic override system is "fail safe". This means that an electrical circuit holds the hydraulic system in an "override" condition. So, with the hydraulic system switch in the ON position, the circuits are de-energised. If the electrical system fails, the control linkages will continue to be boosted, regardless of the position of the hydraulic "override" switch. This prevents loss of the aircraft electrical system from also causing a hydraulic systems failure.

I was returning from an offshore sortie one day when the pilot of another aircraft called out on the radio, in a highly agitated voice that he was losing control. He said the hydraulics kept cutting in and out and the aircraft was rolling and pitching violently. There was real panic in his voice and I could hear his passengers shouting in the background. Another pilot called, 'Switch off the hydraulics.' He responded with, 'I've switched OFF the hydraulics, AND pulled the circuit breaker, I think we're going in.' I called out as calmly as I could, 'Leave the switch in the OFF position and push the circuit breaker back in.'

After a minute's silence he came back with, 'I did that and I have control back with no hydraulics.' What he had done was negate the override system by de-energising it, which was the same as turning the hydraulic system back on. He proceeded back to base and made a run-on landing on the flight strip beside the runway.

Of course this demonstrated his lack of knowledge of the aircraft systems. We all learned from that, about following the Flight Manual procedures and not applying our own 'overkill' additional actions.

This override system applies in most single-system configurations. The bottom line is:

'KNOW YOUR AIRCRAFT'.

Preventing the Loss of your Airman Certificate Privileges

The Federal Aviation Administration (FAA) issued new regulations regarding the duration of pilot certificates, flight engineer certificates, mechanic certificates, and aircraft dispatcher certificates. FAR 61.19 states that the holder of a paper pilot certificate issued under this part may not exercise the privileges of that paper certificate after March 31, 2010. FAR 63.15 states that the holder of a paper flight engineer certificate may not exercise the privileges of that paper certificate after March 31, 2013. FAR 65.15 states that the holder of a paper mechanic or a paper aircraft dispatcher certificate may not exercise the privilege of that paper certificate after March 31, 2013.

You can replace your airmen paper certificate(s) with a new plastic credit card size airmen certificate by logging on to: www.faa.gov and clicking on "Replace a License Certificate" under "Pilots" on the right side of the page. Then click on "Login to" and select "Request an Account" at the bottom of the page that comes up. Follow the instructions to obtain a new plastic certificate. Each certificate will cost \$2.00, which you will pay with a credit card online. You may also, at the same time, if your certificate number is the same as your social security number, request that your social security number be removed as your certificate number.

The International Civil Aviation Organization (ICAO), of which the United States is a member, issued a requirement that as of March 5, 2008, all private, commercial or ATPs, as well as flight engineers, operating internationally as required crewmembers of an airplane or helicopter have an airman certificate with an endorsement of language proficiency. In the case of persons holding a U.S. airman certificate, the language proficiency endorsement will state "English Proficient." U. S. airmen certificate holders have until March 5, 2009, to comply with the ICAO Language Proficiency airman certificate endorsement requirements. After March 5, 2009, U. S. airmen certificate holders may not operate internationally without this endorsement.

If you replace your airmen certificate as described above, the "English Proficient" endorsement will be added to your certificate automatically because the ability to read, speak, write, and understand English is already a U.S. regulatory requirement. The FAA Registry began issuing all new certificates with this endorsement on February 11, 2008.

If you do not have access to a computer, you may mail your request to:

Federal Aviation Administration
Airmen Certification Branch, AFS-760
P.O. Box 25082
Oklahoma City, OK 73125-0082

Include a signed, written request stating your name, date and place of birth, social security number, and/or certificate number, your current address, and the reason you need a replacement. You must include a check or money order for \$2.00 (U.S. funds), made payable to FAA for each certificate you are requesting.

Even if you are not currently exercising your airman privileges, you worked very hard to obtain them. Please take a little time to retain those privileges by requesting replacement certificates.

HumanAD Snap Shots



U.S. Air Force CV-22



A Fort Worth, Texas Police patrol unit apprehends a suspect on the bank of the Trinity River after a quick aerial chase using the department's "Air One" helicopter, a Bell Jet Ranger.

The Maintenance Factor Continued . . .

Chronic fatigue is more long term. It is a debilitating and complex disorder characterized by profound fatigue that is not improved by bed rest and may be worsened by physical or mental activity. Those suffering from chronic fatigue may require medical attention.

Management can play a crucial role in reducing fatigue through proper scheduling of shifts and rotations. Also, properly monitoring the overtime work and controlling additional duties or assigned tasks in order to avoid over burdening the individual. Team building is an excellent approach to reducing stress.

3. **Alcohol** – A chemical depressant that impairs the individual's judgment, perception, reaction time and coordination. When a person drinks alcohol, the alcohol is absorbed by the stomach, enters the bloodstream, and goes to all the tissues. The effects of alcohol are dependent on a variety of factors, including a person's size, weight, age and sex, as well as the amount of food and alcohol consumed.

The effects of alcohol on human functions continues long after the chemical dissipates from the body. Hangovers occur after large amounts of alcohol are consumed. A hangover consists of headaches, nausea, thirst, dizziness and fatigue. The consumption of alcohol should be stopped early enough to allow the body to dissipate the blood alcohol content with no residual effects prior to going to work.

4. **Tobacco** – The negative effects of smoking tobacco such as lung cancer, heart disease and emphysema is well documented and commonly known. Smoking tobacco also subjects the body to higher levels of carbon monoxide which cause a form of hypoxia. Hypoxia is a condition where there is a deficiency of oxygen delivered at the tissue level. Hypemic hypoxia occurs when the capacity of the blood to transport oxygen is reduced. Carbon monoxide has an affinity for hemoglobin over 200 times

that of oxygen. Consequently, a hemoglobin molecule attaches itself to carbon monoxide over oxygen thereby reducing the amount of oxygen delivered to the tissues. The hazard here is that tobacco will restrict blood flow to the eye and thus reduce vision. This is especially hazardous to someone working a night shift or in areas of limited light levels.

5. **Hypoglycemia** – Hypoglycemia, also called low blood glucose or low blood sugar, occurs when blood glucose drops below normal levels. Hypoglycemia can happen suddenly. It is usually mild and can be treated quickly and easily by eating or drinking a small amount of glucose-rich food. If left untreated, hypoglycemia can get worse and cause confusion, clumsiness or fainting. Severe hypoglycemia can lead to seizures, coma and even death. Corrective action is simply a proper diet.

Remember the mechanic and their management can have a significant impact on those stresses. Unfortunately, they are often intertwined and accepted as part of a normal daily cycle where the connection between "the stress" and "the negative impact" on the mechanic are seldom made and subsequently overlooked.

Environmental Stress

Environmental Stress is a negative response to human performance brought on by difficult working conditions, facilities, equipment and managerial pressure.

Throughout the years, aircraft maintenance has been performed in many types of conditions and environments. Mechanics have conducted inspections in dimly lighted hangars and performed major repairs in well constructed hangars. Then, from climate controlled facilities to a flight line unprotected from the elements.

The ability of the body to adapt to each situation will not remain constant with each person. The effects of a deteriorated physical or emotional state can be compounded if the environment where the mechanic must operate is not user friendly.

Poorly designed or organized facilities decrease the mechanic's tolerance to external stresses such as noise, temperature, lighting and humidity. Poor conditions will greatly increase the potential for a human error related incident or accident.

Just as human factors engineering has designed the cockpit to be user friendly for the flight crew, so must the maintenance facility be designed around the needs of the maintenance team. The facility should be an extension of the mechanic's tool box. The layout of the facility should be organized in a task-oriented fashion to reduce the external stresses of the mechanic.

Whether the task is to perform a major inspection or a simple repair, the facility must be constructed with the work in mind. Airframe inspections should be conducted in a well lighted bay with adequate work space and clear access for support equipment. Receptacles for power should be easily reached, such as compressed air and electrical outlets capable of providing the required voltage. The floor should be painted in a nonporous substance and in a light color to improve visibility and enhance the clean up of spills. The bay should be away from the main hangar door to protect the aircraft and maintenance crews from outside elements when the door is periodically opened.

Component repair should be conducted in specifically designed shops away from the main stream of activity on the hangar floor. They must be well ventilated, insulated, lighted and equipped with the proper safety and warning devices. The floor of the component repair shop should be constructed of non-conductive and malleable material to prevent electrical shock, reduce foot injury

and enhance the clean up of spills.

Management must be careful not to over task the capabilities of the mechanic in order to meet production demands. The temptation is to push the envelope when profit margins hang in the balance. This can cause undue stress on the maintenance crew. Aggressive work schedules can rapidly degrade productivity through fatigue and eventually result in “physical burn-out”. Management can conduct a task analysis to determine the following requirements: amount of time to perform a task, personnel and equipment, support shops and repair parts required to be on hand.

Armed with this information you can systematically plan a major task without interruption, choke points or redundant effort. This all helps to reduce the stress imposed on the mechanic’s environment. In addition, a system of job rotation will help to lessen the impact of monotony and boredom associated with repetitive tasks and inspection, not to mention increasing the skill level of each employee.

In summary, management must understand the needs of the maintenance personnel in order to provide the proper facilities, equipment, procedures, leadership and training necessary to reduce the negative impact of environmental stress.

Safety Suggestions

In conclusion, I would like to offer some safety suggestions that might help you with reducing the possibility of human factors related errors.

Procedures:

- Periodically review documented Standard Operating Procedures (SOP) and ensure they are updated, accessible, consistent and realistic to your operation.
- Ensure tasks and procedures are standardized, trained and enforced.

Risk management:

- Using the accident formula, evaluate recurring and routine tasks to identify areas where human error could exist and institute corrective procedures.
- Train supervisors and employees to recognize and report work hazards.

Path of Least Resistance:

- People are much like water or electricity; they often follow the path of least resistance. Use your understanding of human factors to develop procedures that make the path of least resistance safe and error resistant.

Tools, equipment and facilities:

- Inspect tools and ground support equipment for calibration and serviceability. Remove from service and repair any faulty items. Ensure safety devices such lockout pins, protective clothing, eye and ear protection are available, marked and used.
- Ensure facilities are environmentally controlled and organized to be user friendly to the maintenance team.

Supervision and Communications:

- Supervisors must be proactive to ensure that proper procedures are followed. Conduct shift handover meetings. Be knowledgeable of stress related symptoms and provide feedback to management and the maintenance team.
- Establish procedures that disseminate information especially where procedures have changed or where an error has occurred repeatedly on a task.

Training:

- Introduce crew resource management for maintenance personnel and other support personnel who deal with maintenance.

- Establish a training program for all new equipment. Institute a certification and / or rectification program for employees on equipment and hazardous operations.

Incident / Accident reporting:

- Establish a procedure to report any mishap or accident.
- Follow-up on all reports, evaluate cause and apply corrective actions.
- Review incident with maintenance personnel as to cause and corrective action taken. Ask for the maintenance team input or create a safety counsel.

The benefits of understanding human factors and applying procedures to reduce its negative affects on human behavior are:

- safer working conditions lead to increased morale
- decrease Workman Compensation Claims
- improved employee attendance
- increase profits
- increase productivity
- decrease costly non-injury type accidents
- decrease liability due to improved safety record
- decrease insurance premiums
- improve customer confidence and satisfaction
- enhances teamwork and develops confidence in management

Conclusion

The focus of applying Human Factors and Stress Related Behavior towards aviation maintenance has historically received little attention. Accident investigators are uncovering causation factors that encompass the human factors philosophy. They are discovering that accidents are often a result of a series of complex events happening in a predictable sequence. It is only through our understanding of these events that we can identify the problems and apply a corrective action.



BELL HELICOPTER AWARD PROGRAMS

Many Bell pilots and operators have requested information on what type of Bell Helicopter wings and safety awards are available to them. There are two ways to obtain recognition for pilots who fly Bell helicopters. The first recognition is a Pilot Safety Award issued on the basis of safe flying hours in Bells. The second is a wings award based on the pilot's flight hours in Bell helicopters. It is possible for a pilot to obtain both awards.

Bell Flight Time Wings Award

The second recognition is for a pilot's flight time in Bell Helicopters. The Bell Training Academy issues this Certificate of Achievement and a Wings Lapel Pin in the following flight time hours:

- 1,000 hrs.** plain wings pin + certificate
- 5,000 hrs.** 5,000 hr. wings pin + certificate
- 10,000 hrs.** 10,000 hr. wings pin + certificate
- 15,000 hrs.** 15,000 hr. wings + certificate
- 20,000 hrs.** 20,000 hr. wings + certificate

Example: If a person had 6,500 hours in Bells he would receive a 5,000 hour pin, although the certificate would read 6,500 hours. Their next opportunity for a higher hour level pin would be at the 10,000 hour level.

For the hour level recognition to be awarded, the pilot (or company) must provide the following: Name of pilot as they would like it printed on a certificate, a verified flight time in Bells by either the Chief Pilot or a Company Administrative Official. In the case of an individual pilot making the request, a signed copy of the page in the pilot's log book that verifies the hour level for the wings requested.

Mail or email the information (including copy of documentation) to Rosalind Larmer at: rlarmer@bellhelicopter.textron.com, Bell Helicopter Textron Inc., P.O. Box 482, Rosalind Larmer, Dept. 9S, Bldg. 61, Fort Worth, TX 76101 USA

Pilot Safety Award

Recognizing an individual pilot for flying safely is far too rare. Most pilots only hear of mistakes made by another pilot in an accident. Bell provides a Pilot Safety Award certificate for hours flown without an accident in a Bell helicopter. This can be achieved in either military or commercial aircraft. The award is given in thousand hour increments to recognize those pilots with a proven commitment and history of safe flying. To apply for this recognition certificate, please send a request letter from the chief pilot, CEO, military commander, or other individual who can confirm how many accident-free flight hours you have flown in Bell helicopters. If you are an individual pilot/owner, you can write the statement yourself. Let us know how you would like the name to appear on the certificate. If you want to include a military rank, you need to indicate that.

The award is maintained through the Bell's Flight Safety Department within Bell Engineering; Lee Roskop (ldroskop@bellhelicopter.textron.com) is the Bell point of contact. His mailing address is: Bell Helicopter Textron Inc., Attn: Lee Roskop, Dept. 81, Group 60, P.O. Box 482, Fort Worth, TX 76101 USA

The pilot's name and safe flight hours are posted on Bell's Flight Safety web page www.heliprops.com. Follow the link to the Heliprops Pilot Safety Award Program.



Significant Achievement

Veteran helicopter pilot Terry Ault (L) receives a Certificate of Recognition from the Bell Training Academy's Director, Trey Wade (R), with Bell Senior Flight Instructor Robert Craigo observing (C). The certificate was presented to Terry upon his retirement from a helicopter career that spanned 41 years as an electronic news gathering pilot and a U.S. Army Aviator. He trained with the Bell Training Academy every year for 30 years.

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