Bell Helicopter
A Textron Company

Rotorbreeze®

February 2003 • Vol. 52 No. 1

What's Inside...

A message from

John Murphey

Chairman & CEO
Bell Helicopter
Textron

As we approach the end of one year and the beginning of a new one, it is a time for reflection and thanksgiving. Reflection on the events that have shaped our lives over the past year and thanksgiving for the people that have filled our lives with hope and happiness.

This past year has been a good one for Bell customers and Bell. Our company is as strong as it has ever been and the commitment to meet our customers' requirements with improved products and services is understood by every person at Bell Helicopter.

Promises that we made last year to improve product performance and quality are being realized. Model 407 and 412 sales are strong because these helicopters are delivering great value to our customers. The 206 series continues to have demand in both the new and used markets because of its proven reliability. Bell's leadership in Product Support continues to lead the industry thanks to our worldwide network of service centers and the professionalism of Bell's Customer Service Representatives and Product Support Engineers that are available day and night to help our customers meet their missions.

Planning teams are actively engaged in identifying customer requirements for the next generation of helicopters. We will spend the next several months making sure we know what our customers want in mission performance and affordability. Then we will be developing plans to deliver what is needed to the marketplace. You can expect to hear more about this at HAI.

On the military side of our business, the V-22 is being produced at the rate of one per month as it undergoes further testing by the Navy/Marine Corps. That testing is proceeding as planned and providing the data that will verify that Tiltrotor technology is safe and effective. The H-1 Program for the Marines has five aircraft in Navy/Marine test and is proving the effectiveness and affordability of these newest attack and utility helicopters. Funding to begin full rate production for both the V-22 and H-1 are included in the U.S. Government's FY 04 funding plans. The U.S. Coast Guard has also selected the Bell Eagle Eye UAV Tiltrotor and the AB139 for its Deepwater Project.

Of course, the success of our company depends on our customers and their confidence in our people, our technology and our promise to continue to deliver the outstanding service and products that has made Bell the industry leader over the last 50+ years. We have earned that confidence in the past and we will continue to earn it as we move forward to meet the needs our customers expect in both products and supporting services.

I am thankful for the team of people we have at Bell who believe in our company and our customers and put both above personal ambitions. I am thankful for the men and women who work each and every day to serve our customers with products and services that serve your mission requirements. Most of all, I am thankful for the thousands of customers who know that anyone can sell you a helicopter but what you get when you buy a Bell is an entire company that will be there to support you for the next 50 years.

HAI HELI-EXPO 2003
DALLAS, TEXAS
FEBRUARY 9-11

ROTORBREEZE is a quarterly publication of Bell Helicopter Textron Inc., a subsidiary of Textron Inc., P.O. Box 482, Fort Worth, TX 76101.
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The newsletter is distributed free of charge to persons associated with the helicopter industry.

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INTERVIEW

Always Looking Forward and Upward

RICK ROSENJACK *was named Senior Vice President of Bell's Commercial Business Unit on October 21, 2002. He joined Bell in July 2000 after spending 16 years with Textron Aerostructures, and was most recently Vice President of Procurement and Materials Management for Bell.*

This interview offers a perspective of his first seven weeks in the position and his leadership plans for the Commercial Business Unit at Bell.

Rotorbreeze: *Congratulations on being selected to lead this organization. Now that you have had a couple of months to assess the situation, what is your impression?*

Rosenjack: First, thanks for offering your congratulations. I am truly honored to be leading this organization and I couldn't think of a better place to be … at a more opportunistic time. My first impression? We have a lot of great people… extraordinary talent throughout all ranks of leadership … we have a lot of great products that are proven in the field… and we have a lot of loyal customers who appreciate our products, customer service, and responsiveness.

Rotorbreeze: *You mention "opportunistic time;" why do you think that this is an opportunistic time for Bell, and, more specifically, for you in your new position?*

Rosenjack: Bell is a different company than in years past. The management team assembled by John Murphey is stronger and more focused on the business operatives than in the past 10 years that I have worked with Bell… as a supplier and as an employee. We are taking dramatic steps toward reducing our overhead … down $40M from 2001 to year-end 2002 … and focusing heavily on improved efficiency internally… and global sourcing externally. Also, we are getting great support from Textron as a strong supporter of Bell and our business plan.

Rotorbreeze: *What about you? In the CBU position?*

Rosenjack: Opportunity abounds… particularly in product cost reduction, new product development, and organizational clarity … getting the right people in the right places to achieve optimal results. We need a stronger program management organization and process … and we have already begun to see improvement there. We also have lowered the overhead in the CBU approximately $18M in 2002 while achieving significant improvements in our 407 and expanding our service offerings to our customers. More focus on these items in 2003 … including strategic sourcing, globalization, and Textron Six Sigma… will improve our competitiveness.

"Internally, we will continue to strengthen our team … with leaders and team members who are customer focused … always."

Rotorbreeze: *Can you expand on Textron Six Sigma?*

Rosenjack: Textron has embraced the six sigma problem solving concept in a unique and creative way … combining LEAN, Six Sigma, and Design For Six Sigma (DFSS) to reduce waste, reduce variability, and drive growth and innovation, respectively. Textron is the only corporation that I know that has done this … and together, the result is a powerful set of tools and techniques that we are using at Bell to realize major operational, financial, and cultural benefits. We now have a full year of its application across Bell and are starting to see projects closing out and benefits rolling in. We will continue to focus heavily on this in 2003.

Rotorbreeze: *You mentioned new product development earlier and now growth and innovation. Does Bell have something in the works for commercial application?*

Rosenjack: We are always developing new technology. Testing is going really well with the V-22 and the BA609 commercial tiltrotor recently experienced successful ground runs … but we have also achieved some super advanced design successes with our new AH-1Y and AH-1Z military helicopters. We will be leveraging our experience and some of the technology from the Y and Z in our next commercial development program. We really want to do this program right so we are currently conducting technology trade studies and talking with customers to determine what they really want. You will hear more about this at HAI where we will have kiosks set up for customers to provide their input into the design. One of our top priorities is to strengthen our commercial products through product line renewal. It has to be customer-driven … and we will be using DFSS to add discipline and rigor to the process.

Rotorbreeze: *Thinking about 2001… with 9/11, and the market downturn in 2002, what is your view of the future?*

Rosenjack: I am always looking forward… and only want to dwell in the past long enough to capture lessons learned to help us move forward. 2001 was a tough year for Bell, but it is over … and we are still strong. We declared 2002 a year of stabilization … to regain our focus and drive results… and we were successful in achieving our objectives. We had a good year.

Regarding the market, we have seen a recent resurgence in demand… particularly for the 412 and the 407 … as well as the 206. We've made a lot of changes to make the 407 a world-class helicopter and customer orders are showing confidence in the product… with unit sales up 35% in 2002 vis-à-vis 2001. We are also seeing strong demand for our Huey II around the world.

There is also increased interest in Homeland Security. The September 11 tragedy has unfortunately increased interest in helicopters for police departments and fire departments … and we are proud that Bell plays an important role with these agencies in helping them with their mission. We know there is a lot of opportunity here for Bell and we are all anxious to see how the new Department of Homeland Security launches its organization. We want to be poised and ready to support against terrorism, border patrol issues, illegal drug trafficking, and the like.

Continued on page 15

And Then the Rains Came . . .

THE CZECH POLICE AVIATION DEPARTMENT
ABOVE AND BEYOND THE CALL OF DUTY

By Alan Moffatt
Director, European
Sales and Marketing

By the middle of the first week of August 2002, governments throughout north central Europe were beginning to become concerned about impending weather. Extended forecasts indicated that significant rainfall was on the way. As the days progressed, the forecasts grew progressively worse. And then, on the night of August 11–12, the rains finally came – and came with a vengeance. Beginning on 12 August 2002, six regions of the Czech Republic, including parts of the historic center of the Czech capital city of Prague, were submerged under water as a result of the most severe flooding since 1890. After long-lasting heavy rains, the Vltava River peaked at 24.4 feet above flood stage the night of 14 August and continued at or above flood stage through 29 August. The flooding forced the evacuation of over 200,000 people across the region and left 13 people dead.

But the death toll in the Prague area would have been substantially higher if it had not been for the heroic and selfless actions of the crews of the Czech Police Aviation Department, who flew rescue, surveillance and law enforcement missions almost nonstop during this 18-day period. Operating in all kinds of weather conditions and often putting themselves and their helicopters at extreme risk, the Czech Police Aviation Department rescued 102 people from certain death, including eight individuals saved in extremely high-risk night rescues conducted by searchlight in torrential rains and swollen rivers.

Czech Police Aviation detachments were called to full alert status beginning Sunday morning, 11 August as detailed weather and rainfall forecasts began to firm up. The Czech Police activated five of their six Bell 412 medium twin helicopters, as well as one of the police's two BO-105s. By nightfall on Sunday, all of the Czech Police's helicopter aviation assets were on alert and were fully staffed with primary and backup helicopter crews from the Czech Police Aviation Department, as well as additional rescue specialists from the Czech Police's Quick Reaction and Pursuit Unit and Fire Brigade units from throughout the Czech Republic.

Monday morning, 12 August arrived in the Czech Republic accompanied by extremely heavy rains, poor visibility (150m), and very low ceilings (30m and below). By mid-morning, the ceiling and visibility had

improved enough to permit helicopter rescue operations to commence, and the first Czech Police rescue missions were launched by about 11:00 a.m. local time. Over the next 18 days, and often operating in marginal weather conditions during the most critical period of the flooding, the crews of the Czech Police Aviation Department flew 179 flight hours in 444 operational sorties.

In addition to the 102 lives saved as a direct result of the Czech Police Aviation Department's professional and tireless rescue operations during these historic floods, the Aviation Department was instrumental in preventing uncalculated additional loss of life and substantial property damage by bringing under control or destroying a number of ships and barges which were being swept downriver by the surging floodwaters. Working with the Czech Police's Quick Reaction and Pursuit Unit, the Czech Police Aviation Department flew many extremely hazardous daytime and nighttime missions to insert officers and explosive experts onto the decks of vessels which were out of control in the rushing waters, and in every case were able to ensure that the vessels were secured to the riverbanks or sunk before they could destroy critical bridges downstream.

Bell Helicopter Textron and its employees extend heartfelt thanks and congratulations to all the members of the Czech Police Aviation Department, as well as to all the agencies and personnel throughout the Czech Republic who put their lives on the line in this time of dire emergency. And Bell Helicopter is especially proud that the Bell 412 helicopters operated by the Czech Police played such a crucial role in these rescue efforts.

(More photos on next page.)

And Then the Rains Came . . .

(Continued from previous page)

Czech Police 412 long-line rescue during Czech flooding.

Barges adrift in Vltava River, Czech Republic, August 2002

Flood Damage along Vltava River, Czech Republic, August 2002

"Into the Night"

A DIFFERENT NVG PERSPECTIVE

By Sandy Kinkade, RN, MSN
EMS Market Segment Manager

One of the many benefits of my job is having the opportunity to gain insight into the many facets of safely operating a helicopter. As a flight nurse for 14 years, safety was a term we preached among ourselves on a regular basis. When I think back to the mid-80s when I first started flying, I get a sick feeling about how often EMS programs were pushing the envelope (and unfortunately still do). The fatal-accident rate was astronomical, especially considering how many were 100% related to poor decision-making skills. I never felt unsafe, but sometimes ignorance is a good thing. In my first program, we flew in the mountains at night, and from my seat, visibility seemed unlimited. At my second program, mountains were not much of a concern, but miles of dark, forested terrain was. Well, little did I know how truly limited our nighttime vision actually was.

"Little did I know how truly limited our nighttime vision actually was."

About three months ago Cornelius "Mac" McMillan and Scott Baxter offered to take me on my first NVG flight. After a briefing, I joined them in the 412 for my first flight. The goggles are Litton model M949. The first thing I noticed when I flipped the goggles into position was how lit up the sky was with aircraft! Granted, most of them were not significant to our area, but I had no idea how many airplanes are flying within a relatively small radius. We departed the Bell Training Academy and headed for downtown Fort Worth. Even with the amount of ambient light around a heavily populated city, there was no distortion and so many potential obstructions on the ground were clearly visible (power lines, towers, mail boxes, etc.). We headed back to Bell and did two passes along the infamous "River Run" which was an amazing experience under goggles.

Back to earth at Bell, Mac and I went to the Jet Ranger with a spider-illuminated cockpit courtesy of Texas Aviation Services (Texas Aviation holds an STC for the NVG cockpit for the 206 B/L and 407 model). Now it was time for the real experience since riding up front offered a whole new perspective. We immediately headed for the dark zones around Bell to let me see how effective NVG can be for those missions requiring night flying in confined spaces (EMS and Airborne Law Enforcement, for example).

Mac put the Jet Ranger through a number of maneuvers one would easily face during an EMS mission. During a steep approach in a confined area with no ambient light, I could easily distinguish trees and power lines, including those small, thin anchor lines. Those programs flying in desolate areas will often find themselves in situations where the scene is not accessible to rescue vehicles. This does not mean the area is free from obstructions though. Having the ability to clearly see potential hazards would significantly increase the margin of safety in this type scenario.

"Why not add an additional safety feature such as [Night Vision Goggles] to your repertoire to increase the safety margin to walk away from an in-flight emergency?"

I asked the crash rescue personnel to turn on their overheads and bright lights on their rescue vehicle. During the approach, I looked directly at the bright lights the whole way to the ground. There was a slight halo noticed which immediately cleared when I looked away. We landed approximately 50 feet away, nose to nose from the rescue rig. Not once did the goggles lose the ability to visualize the area.

We then did several auto-rotations to the ground. The first time I removed the goggles to experience the auto-rotation under with what would be the current scenario faced by the majority of air medical providers in the United States. Granted, I am not a pilot so have no actual experience of performing this maneuver. But then again, how many pilots actually have the opportunity to practice full auto-rotations to the ground during nighttime operations? Without the goggles, it was difficult to gauge the distance to the landing area, let alone determine if there were any potential hazards in the approach path. We flew several more times under goggles, and the difference was indescribable. Mac did approaches with the landing lights turned on and off to demonstrate the new line of goggles' ability to maintain their effectiveness despite additional lighting in the immediate area.

When we returned to Bell Helicopter, I kept asking myself several questions: Why not add an additional safety feature such

Continued on page 13

There I wuz...

By Don Maguire,
Manager PSE Light

Reminiscing about the Bell 47!

Normally, when I am offered the privilege of submitting an article for *Rotorbreeze*, I take on the challenge with a desire to pass on technical hints or pearls of wisdom learned by association with my respected colleagues within the honored engineering team of Bell Helicopter. This time, considering some recent experiences and the flooding back of memories from the depth of my psyche, I felt it appropriate to merely share some historical thoughts.

It is a sobering thought indeed to suddenly realize that one has arrived at the threshold of senior citizenship in our industry. Some might otherwise suggest senior senility in this same revered industry, but that is a subject for another day. As the realization sinks in that rather lengthy Bell 47 experience results in placement among those referred to as graybeards, one may feel very old, even though the memories remain so fresh. In any case, please consider this writer as one of those unashamed to state my unequivocal devotion to the Bell 47, and one who recalls with pride the memories, experiences and lessons learned through the years of maintenance, overhaul and flight time exposure to this venerable aircraft.

"Those who revere the Bell 47 for all its strengths claim to this day ... what the Bell 47 does well, no other helicopter even remotely challenges."

It is with great delight that I accepted the honor to represent Bell Helicopter as a member of the Bell 47 Helicopter Association. I had the pleasure to share in a most enjoyable and rewarding weekend with many Bell 47 conferees attending the Rotor Fest Helicopter Air Show and Fly-In held at West Chester, PA in October 2002. This event awoke a flood of recollection as the sounds, smells and sights rekindled my fondness for what many regard as one of the best helicopters ever invented by man, and of which more than 1000 remain active to this day.

Those who revere the Bell 47 for all its strengths claim to this day that what the Bell 47 does well, no other helicopter even remotely challenges. What an unfortunate circumstance that took the Bell 47 out of production, the victim of labor-intensive manufacture, ever-escalating costs and apparent loss of interest. I have no doubt that in the event of a sound business case, and with a global perspective toward manufacturing sources, the Bell 47 could again be a viable product and sell today, not only capitalizing on nostalgia, but also continuing to out-perform other helicopters in its operations niche.

As one who still speaks "Bell 47" although not as fluently as in the past, I recall with great fondness some of my early experiences. I readily admit that if I had realized 30+ years ago the importance of those early experiences, I would surely have paid more attention! There is a note of advice in this to our younger colleagues and co-workers, if you intend to make this wonderful industry your lifetime career, pay attention, and continue to improve your skills. It may not be possible to estimate just how much you might benefit in the future from what you are learning now!

Finding the wind, *what?* In those heady days with piston engines producing limited power, the most productive and safest Bell 47 pilots knew how to identify the slightest wind and use it to the maximum possible advantage. One of the strengths of the Bell 47 was its ability to enable the pilot to locate and use the wind as a benefit. The procedure for this task is called "finding the wind." I shall never forget my most memorable flying experience as I learned one procedure to find the wind.

Continued on page 14

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"Into the Night" *(Continued from page 7)*

as NVG to your repertoire to increase the safety margin to walk away from an in-flight emergency? How can you put a value on something like the lives of the crew and passengers? Why hasn't NVG technology become more popular, if not required in the EMS and Airborne Law Enforcement mission profile where night flying is routine? These may seem like naïve questions in times of budget control, but they should not be perceived as such. As the movie line says, "... We have the technology." Why are the end users not being more insistent on requiring NVG for all nighttime missions? If you speak to our international neighbors, the United States falls way behind in embracing this technology.

"It seems logical that the aviation industry should also move forward as new, improved technology is made available..."

My goal in writing this article is to offer the perspective from someone who spent 11 years in the back of a helicopter taking care of more than 2000 patients during that time. I have seen medical technology evolve over the years to allow EMS providers in the field to intervene in ways never imagined. It seems logical that the aviation industry should also move forward as new, improved technology is made available to not only improve the pilot's capability to perform their mission, but that will increase the chance of survival from an unexpected event that occurs during the flight, or on approach to the many unsecured landing zones utilized by the EMS and ALE industry.

Keep in Touch!

If you have had a change of address or wish to have your name added to or deleted from the Rotorbreeze distribution list, please notify the editor, Michael Dewey, at:

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DESTROYED AIRCRAFT

During the calendar year 2002 Bell Helicopter aircraft identification data plates have been returned to Bell, were subsequently destroyed and documented as such. The serial numbers have been retired. Additionally, Bell has recommended to the certification offices of the FAA and Transport Canada that the aircraft serial numbers be removed from the applicable type certificate data sheets.

Model	Serial Number
205A-1	30309
206B	2002, 2205, 2209, 2383, 2411, 2417, 2490, 2548, 2552, 3399
206L-1	45237
206L-3	51090, 51240, 51272
222	47017
407	53041, 53297
412	36214
UH-1D/UH-1H	4032, 4077, 5341, 5704, 9113

The following Bell Helicopter aircraft were reported by official aviation investigation authorities as destroyed in 2002. Based upon that finding, Bell has recommended to the certification offices of the FAA and Transport Canada that the aircraft serial numbers be removed from the applicable type certificate data sheets.

Model	Serial Number
47G	673
47G2	1275
47G4	3158, 3355
206B	611, 681, 866, 1015, 1426, 1569, 2203, 2366, 2461, 2820, 3281, 3750, 4239, 4323
206L	45065
206L-1	45589
206L-3	51429, 51367
212	30625, 30645, 30706
407	53055, 53356
430	49038
UH-1F	7095
UH-1H (military surplus)	4530, 5717

It is very important that owners and operators understand the significance of an aircraft officially reported by an accident investigation authority as destroyed, or where the aircraft data plate has been destroyed. Bell Helicopter furnishes listings of destroyed aircraft and destroyed data plates as a service to customers, the FAA and Transport Canada and worldwide certification authorities. Bell does not represent that these lists constitute all of the aircraft or data plates that have been destroyed. Listed are only those aircraft where Bell has recently received final reports from official accident investigation authorities describing the aircraft as destroyed or where Bell has destroyed the aircraft identification plate as requested by others.

Reminiscing about the Bell 47

(Continued from page 8)

The day dawned cool with temperature about 25° F and overcast. Our training airfield was about 1800 feet ASL and the surrounding hills peaked at 7–8000 feet. The previous day, in ground school, my instructor briefed the airflow dynamics and flight characteristics the pilot may anticipate while flying in the mountains. As we prepared for the day's training flight, my highly experienced and very intimidating (my reaction, not his personality) instructor stated, "Today is a great day for finding the wind." I managed to rustle up my most impressive neophyte pilot's voice and said, "huh?"

My instructor, Dick (in case he sees this article) explained that it is easy to find the 15-knot wind, but the 3- to 5-knot wind can kill you if your approach is poorly planned. Off we launched in a turbo-charged Bell 47G-3B-1, to find, and land into, the wind with no external visual indicator above the tree line at elevations of 6,500-8,000 feet. In this task, the Bell 47 truly shines.

The procedure, simply stated, is to fly the aircraft in a reconnaissance pattern, in trim, at 45 mph indicated, in a very disciplined manner. The pilot maintains a precise altitude as he circles the intended landing zone (LZ), in this case on a mountain peak with a flat LZ adequate to accommodate the skid gear. As the pilot circles the LZ, he is challenged to maintain precisely 45-mph airspeed, the precise altitude of the LZ and a circular pattern as regular as possible, with a constant radius from the LZ. There's the rub; in any air movement at all, while maintaining the other flight conditions, the circular pattern will become elongated, thereby identifying the wind direction.

As the helicopter turns into wind, beginning the circular pattern, the aircraft will demonstrate a solid, comfortable "feel." The pilot is then tasked with accurately monitoring his groundspeed. As the pilot turns around the upwind side of the LZ, maintaining constant airspeed and altitude, the moving air mass will result in the flight path "crowding" the LZ, a significant indication. Subsequently, as the pilot turns toward the downwind portion of the pattern, the aircraft will demonstrate a decidedly "mushy" feel, will tend to settle and the airspeed will tend to drop. As the pilot increases power to maintain his constant airspeed, the ideal circular pattern will become elongated downwind of the LZ. Again, the pilot constantly monitors his groundspeed as he turns on a base leg, rounding the LZ to verify his observations, repeating the pattern if necessary and ultimately performing a non-landing approach to confirm the suitability of the LZ.

"... If you intend to make this wonderful industry your lifetime career, pay attention, and continue to improve your skills."

So, what are the "finding the wind" checks identified so well by the Bell 47? The aircraft feels solid, comfortable, and uses least power when into wind at 45 mph. The upwind leg crowds the LZ. The downwind leg uses more power, the aircraft tends to settle, and the ground speed is higher than the into-wind leg by a factor of two times the wind speed. Finally, the downwind elongation is parallel to the wind direction. These combinations of flight characteristics can be used in any helicopter to identify the wind direction, and aid in promoting disciplined flight, Try it sometime.

Back to our training experience, after finding the wind in no uncertain terms, we landed and Dick asked me to stroll upwind, away from the helicopter as much as the LZ would permit, and confirm the wind direction. I was truly astounded to find the wind so light that only by turning one's cheek slowly from side to side did a slight cooling feel actually identify the wind direction and velocity, which Dick estimated to be .5 mph or less.

Having successfully found the wind, we continued the training to reinforce and practice the technique, discussing the finer points after each pinnacle landing. You can imagine my complete feeling of satisfaction later after one final practice, my highly experienced and intimidating instructor remained silent after the landing, then looked in my direction and said, "That's exactly how I would have done it. This session is done; fly me home." The experience this neophyte pilot learned in a Bell 47G-3B-1, at the hand of a very experienced instructor-pilot that day, served me well through my entire flying career and I hope contributed to an accident-free record. Thanks to the venerable Bell 47!

THE BELL 47 LIVES!!!

About a year ago, a group of Bell 47 devotees decided to breathe new life into their fledgling organization that had been ticking along slowly for some time, but not really growing in size, profile or activity level. Under the leadership of newly elected Director, Mr. Joey Rhodes, the organization approached Bell Helicopter for concurrence to use the moniker "Bell 47 Helicopter Association" and with concurrence achieved, the newly energized organization was formed.

With the objective of promoting the Bell 47, and building on the existing nostalgia, safety in flight operations and maintenance have become cornerstones of the organization mandate. One of the first official events undertaken by the new leadership was to organize a Bell 47 fly-in and air show in Ventura, California in April 2000. This well-attended activity, organized by Danny Rodriguez, Director of the association's West Coast Operations, was unabashedly Bell 47 only, no brand X helicopters were invited.

The Bell 47 Helicopter Association (Bell 47 HA) is a non-profit organization that is seeking official accreditation as such, and wishes to stimulate interest in the Bell 47, and share knowledge, and experiences.

Bell 47 aficionados everywhere are invited to obtain more information by contacting www.bell47helicopterassociation.org and also to drop by the Bell Helicopter Textron static display at Heli-Expo 03 in Dallas, Texas. The Bell 47 HA is staffing a small kiosk adjacent to the Bell Helicopter display and will happily exchange Bell 47 anecdotes, share information and invite new members to join. Look for the Bell 47 G-4 on display and for the smiling faces of the Bell 47 HA executives on site.

Interview with Rick Rosenjack

(Continued from page 3)

Rotorbreeze: *Looking forward, as you say, to 2003, what do you see as the key areas of focus for you and your team?*

Rosenjack: Internally, we will continue to strengthen our team … with leaders and team members who are customer focused … always. People who focus on *how we can* versus *why we can't*. Leaders who find ways to work with *what we have* versus *what we don't have* and who will strive hard to achieve what we need to be successful both financially and in our customer's eyes. I know that much of our success as leaders comes from the team that we have on the field … and I am fortunate to have a strong team of "A" players who will take us forward. We will continue to build and staff this team with the best people available.

We want to continue to provide the best customer support that the industry has to offer and build off of our successful association with Edwards and Associates who brings such a great package of accessories, quality customizing, and service … both to Bell and to customers.

Using the earlier theme about 2002 as a year of stabilization … 2003 will be all about continued progress … progress in improving our service levels to our fielded fleet customers, progress in our process to earn new customers, progress in our new product development plan, and progress in creating a great work environment for our world-class employees.

"Anyone can be great for a day or a year. The people and companies who ultimately succeed are the ones who know that success is a long-term commitment."

Rotorbreeze: *Thank you for your time. Any last words?*

Rosenjack: Thank you … and let me just reiterate what I said when we started this … I am honored to have this position and am committed to giving everything that I have to improve Bell and provide improved service and product offerings to our customers.

I have been on the road a lot in the last seven weeks … doing more listening than talking … to understand from our customer's perspective how Bell is doing and what we can do to serve them better. This will be invaluable to me going forward as we implement the goals that I outlined above. I know that the best ideas for product improvement come from the people who build our products and the people who buy and operate our products. I am thankful to our customers for their commitment to Bell … and I am thankful to our employees who have a wonderful "customers first" attitude.

We have to build off of our success in 2002. Persistence, more than anything else, keeps us great. Anyone can be great for a day or a year. The people and companies who ultimately succeed are the ones who know that success is a long-term commitment. There is more to buying a helicopter than flying a helicopter … and our customers know that when they buy from Bell, they are buying the company … that we will provide them the best support available … long after the sale is done. My best wishes to all for a refreshing and successful year.

WORLD'S FIRST COMMERCIAL TILTROTOR BEGINS GROUND RUNS IN TEXAS

Bell/Agusta Aerospace Company, Arlington, Texas, December 6, 2002 — The Bell/Agusta 609, jointly developed by Bell Helicopter, a Textron company and by Agusta, an AgustaWestland company, began its first ground runs today in preparation for first flight. Ground runs for the world's first commercially available tiltrotor are being conducted at Bell's Flight Research Center, Arlington, Texas.

The BA609 will undergo 40 to 50 hours of aircraft ground run testing prior to its first flight. During this process all of the aircraft systems will be tested and thoroughly checked. Changes will be made if required. No date has been set yet for the first flight.

"Today is a new benchmark date in aviation history," declared Bell Helicopter's Chairman and CEO John Murphey, adding, "with 70 orders from 40 customers in 18 countries, there is no doubt the BA609 will revolutionize air transportation."

"This success confirms Bell/Agusta leading position in the vertical-lift technology," added AgustaWestland's CEO Amedeo Caporaletti.

With its rotors in the vertical position, the tiltrotor is able to take off, land and hover like a traditional helicopter. When the rotors are tilted forward to the horizontal position, the aircraft is able to fly with the high speed and range of a turboprop fixed-wing airplane. The transition from helicopter mode to airplane mode takes 20 seconds, as does the transition from airplane mode to helicopter mode. This versatile capability enables the BA609 to fly with twice the speed and range of conventional helicopters.

The BA609, a six- to nine-passenger aircraft, is expected to be certified by the FAA in 2007 with first deliveries to begin immediately following. Bell/Agusta will produce a total of four prototype tiltrotor aircraft for flight-testing. Final assembly for production aircraft will take place at Bell's Amarillo, Texas, facility with another assembly line to be established at the Agusta plant in Italy. Fuji Heavy Industries of Japan has the contract to build all of the production fuselages for the BA609. All parts and components for both lines will come from the exact same source yielding aircraft that will be identical whether assembled in Italy or Texas.

Headquarters for the Bell/Agusta Aerospace Company is located at Alliance Airport in Fort Worth, Texas. BA609 customer training will be conducted at this location, which will also serve as a delivery center. The BA609 will cruise at 275 knots with a maximum unrefueled range of 750 nautical miles, 1,000 nautical miles with auxiliary fuel tanks. The aircraft in standard configuration is fully pressurized and de-iced.

AB139 *Begins U.S. Certification Flying*

Bell/Agusta Aerospace Company, Fort Worth, Texas, December 20, 2002 — The AB139 medium twin-engine helicopter, one of Texas-based Bell/Agusta Aerospace Company's two products, arrived in the United States of America on December 16, 2002. Equipped with Honeywell's Primus Epic integrated control and display system, this aircraft, #3, will continue certification testing at Honeywell's facilities at Phoenix, Arizona this month.

The arrival in the United States of this AB139 for the testing program represents an important milestone in the aircraft's development and manufacturing process. The presence of the AB139 in the Dallas-Fort Worth metroplex area confirms its solid Texas connection. Bell, Agusta and BAAC senior officials have all stated that the AB139 will be manufactured in Texas as well as in Italy.

The AB139 is a product of the Bell/Agusta Aerospace Company that was formed out of a joint venture between Bell and Agusta. Beyond the Bell and Honeywell participation in the AB139, a host of other North American suppliers including Pratt and Whitney contribute to the product. With the addition of specialized equipment required by U.S. law enforcement and medical evacuation operators the U.S. industry participation is a major element in the AB139 program.

With numerous orders already placed for the AB139, FAA certification is expected in 2003 and initial deliveries will be made soon after to civil and commercial customers. Current orders have established a two-year backlog for the aircraft.

While the AB139 did fly at the Farnborough Air Show in July 2002, this is the first time it has flown in the United States. BAAC officials view this as an opportunity for potential U.S. customers to physically view the aircraft as it moves through the certification program.

The AB139 was recently selected by Integrated Coast Guard Systems (ICGS), a joint venture established by Lockheed Martin and Northrop Grumman, as the VRS (VTOL Recovery and Surveillance Aircraft) solution for the U.S. Coast Guard's Deepwater program. In addition to the USCG, a number of U.S. government agencies are showing a keen interest in this new state-of-the-art medium twin-engine helicopter that brings new levels of speed, comfort, reserve power and space for crew, passengers and survivors alike. These features make the AB139 ideally suited for law enforcement operations whether overland or at sea, as does its fully integrated Honeywell Primus Epic System cockpit and display providing for either single- or dual-pilot IFR operations.

Bell Helicopter, a Textron Company, and Agusta, an AgustaWestland company, have successfully collaborated on a variety of products, combining their unique skills when they formed Bell/Agusta Aerospace Company. This joint venture brought together the two companies' unmatched technological, marketing, sales and after sales support assets. The significant design, development and production synergies thus created are bringing to the world both the BA609 tiltrotor and the AB139 medium twin-engine helicopter. Assembly for the AB139 will initially be undertaken in Italy at Agusta's Vergiate plant, near Milan, prior to the establishment of a Bell AB139 assembly facility in Texas, which will be coupled with support, spares distribution and training for customers in the United States.

MAINTENANCE CONFERENCES (MC)

By Billy Felton,
Manager PSE-Mil-214

Bell Helicopter's primary goal for Product Support Engineering is to disseminate current maintenance-related information to those individuals who are involved with the daily maintenance of Bell Helicopters. Traveling to various locations throughout the globe presenting maintenance conferences has proved to be the best way to achieve this goal. During 2002 we conducted several domestic and international maintenance conferences that were attended by more than 2200 maintainers. Bell Helicopter has received very positive and constructive comments on each of these conferences. To improve the attendance at these conferences we would like to provide as much advance notification as possible to allow operators time to plan for attendance at these conferences.

Bell Helicopter Product Support is pleased to announce the Maintenance Conferences Schedule for 2003. These conferences are scheduled to occur at seven sites in the United States and Canada and three international locations. We are pleased to invite you to these conferences and encourage you to attend the one nearest you. Please refer to the schedule to determine which conference you may attend. As the year goes on, invitations will be sent to you asking you to RSVP if you will be able to attend. For this reason it is important that your local Customer Support Representative has your current mailing address/e-mail/fax number so that we will be able to contact you.

The agenda of each conference is molded around the fleet of Bell Helicopters in the geographic location. An example would be, maintenance data for the model 47 would only be presented at conferences where model 47 helicopters are being operated. This is a very good reason to RSVP to your invitation; so that all required models will be covered. Once the models of the fleet are determined, the agenda is created that includes Bulletins that have been released by Bell Helicopter in the last 12 months, those that will be released in the next few months, field problems that are being investigated and the status of those investigations, as related to each model presentation. Normally each model helicopter is followed by the applicable Engine Vendor presentation. Also included are: presentations covering Bell Helicopter Spare Parts, Warranty information, Component Overhaul capabilities, Edwards and Associates, Aeronautical Accessories, and Rotor Blades Inc. Additionally other vendors are encouraged to participate, such as Smith Industries with a RADS presentation. Each session is followed by a Question and Answer period where individual operators are invited to request specific information on a subject related to their operations.

Bell Helicopter provides these conferences at no charge, Operators/Maintainers are only required to provide transportation and expenses for those that are planning to attend. The atmosphere is intended to be relaxed and comfortable to optimize the exchange of information and ensure the enjoyment of all that attend. Please plan to join us at one of our 2003 Maintenance Conferences.

DOMESTIC MAINTENANCE CONFERENCES – 2003

Location	City	Date
Pacific Northwest	Portland, OR & Stockton, CA	January
North Central USA	St. Paul, MN	March
Gulf of Mexico	Lafayette, LA	March
South Central USA	San Antonio, TX	March
Western Canada	Vancouver, BC	April
Eastern Canada	Montreal, Quebec	October

INTERNATIONAL MAINTENANCE CONFERENCES – 2003

South Africa	Johannesburg, South Africa	May
Europe	Amsterdam, The Netherlands	May
Middle East	Dubai, UAE	May

DOC's INCREASE SLIGHTLY FOR 2003

By Dick Dodge, ISS
Regional Sales Manager

There are no real surprises in this year's forecast for operating costs on Bell's current production fleet. Our recently announced spare parts price increase accounts for most of the increase. The engine manufacturers' estimates for 2003 also added slightly to the increase.

Point number one – The Bell 427 estimate is the Increased Gross Weight Kit option. This kit increases the estimate $4.50 per flight hour with the addition of RIN life limits on the landing gear cross-tubes and a life limit on the Main Rotor Shear bearings.

Point number two – This year I deleted the Bell 212 estimate from my table as it looks like that model will discontinue production. I will have an estimate available for that model and can provide it on request.

Next year should reveal improvements to the Bell 407 cost profiles as our lead-the-fleet program demonstrates the reliability of our drive train components. We hope to report TBO extensions by this time next year that will deliver cost reductions in the overhaul department!

As I do each year, let me remind you of my assumptions on my estimates and restate my willingness to help you if you need any information on operating costs.

I continue to use $1.50 per U.S. gallon due to the range of fuel prices around the world with various operating environments. Adjust the fuel cost estimate based on your particular situation. Labor is calculated using $50 per maintenance man-hour. That is the cost to actually perform the maintenance tasks – "touch time." The estimate also assumes a basic VFR aircraft with no optional equipment installed.

Please feel free to contact me anytime at my email address: ddodge@bellhelicopter.textron.com or by phone at 817.280.3542.

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2003 Direct Operating Cost Estimates

	206B3	206L4	407 (4)	427 (5)	430	412
Fuel and Lubricants						
Fuel (1)	42.00	57.00	69.00	103.50	132.00	169.50
Lubricants (3% of fuel costs)	1.26	1.71	2.07	3.11	3.96	5.09
Fuel & Lubr. Sub Total	**$43.26**	**$58.71**	**$71.07**	**$106.61**	**$135.96**	**$174.59**
Labor (2)						
Inspection	14.98	14.17	11.03(4)	22.20	17.65	23.80
Overhaul	5.15	4.98	5.10	5.26	3.14	5.25
Unscheduled and On-Condition	17.69	17.76	37.74	33.40	37.65	33.09
Labor Sub Total	**$37.82**	**$36.91**	**$53.87**	**$60.86**	**$58.44**	**$62.14**
MMH/FH	*0.76*	*0.74*	*1.08*	*1.22*	*1.17*	*1.24*
Parts						
Inspection	2.41	2.55	1.54(4)	2.82	0.98	8.50
Retirement Parts	33.21	49.79	55.08	85.84	73.10	89.18
Overhaul	17.36	18.50	30.62	32.27	13.71	35.70
Unscheduled and On-Condition	29.98	53.21	78.08	82.72	93.26	170.27
Part Sub Total	**$82.96**	**$124.05**	**$165.32**	**$203.65**	**$181.05**	**$303.65**
Airframe Sub Total	**$120.78**	**$160.96**	**$219.19**	**$264.51**	**$239.49**	**$365.79**
Powerplant Direct Maintenance						
Overhaul Including Accessories	48.67	52.65	63.80	123.20	134.86	193.05
Line Maintenance	3.00	3.00	3.00	5.50	6.00	16.75
Powerplant Sub Total	**$51.67**	**$55.65**	**$66.80**	**$128.70**	**$140.86**	**$209.80**
Total Average Cost per FH	**$215.71**	**$275.32**	**$357.06**	**$499.82**	**$516.31**	**$750.18**

Notes: (1) Fuel costs calculated at U.S. $1.50 per U.S. gallon.
(2) Labor costs calculated at $50 per maintenance man-hour.
(3) Basic VFR helicopter.
(4) Bell 407s operating under FAA rules add $7.70 to labor costs for inspections.
(5) Increased Gross Weight Kit adds $4.50 per FH.

December 2002

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ABOUT THE FRONT COVER...

In 1965 the New Zealand Government purchased 13 Bell 47G (Sioux) helicopters to fulfill the role of light observation helicopter (LOH) and as a platform for Royal New Zealand Air Force (RNZAF) basic helicopter training. Operational training over the first decade was primarily based on a low-threat environment in a guerrilla warfare situation. In this environment, the Sioux provided an adequate observation platform. However, since the mid 1970s the role of the light observation helicopter has change significantly, largely due to the proliferation of high-threat weapons. There were proposals to have the Sioux re-roled for aero-scout operations, and there have been calls for the aircrafts replacement as far back as the early 1980s. The Sioux continues to serve the RNZAF into its 38th year. Since introduction, the RNZAF has used the helicopter throughout New Zealand, and in a range of exercises and associated activities in Australia, and Fiji. The five remaining RNZAF helicopters pictured represent the only active duty military force of Model 47 helicopters in the world.