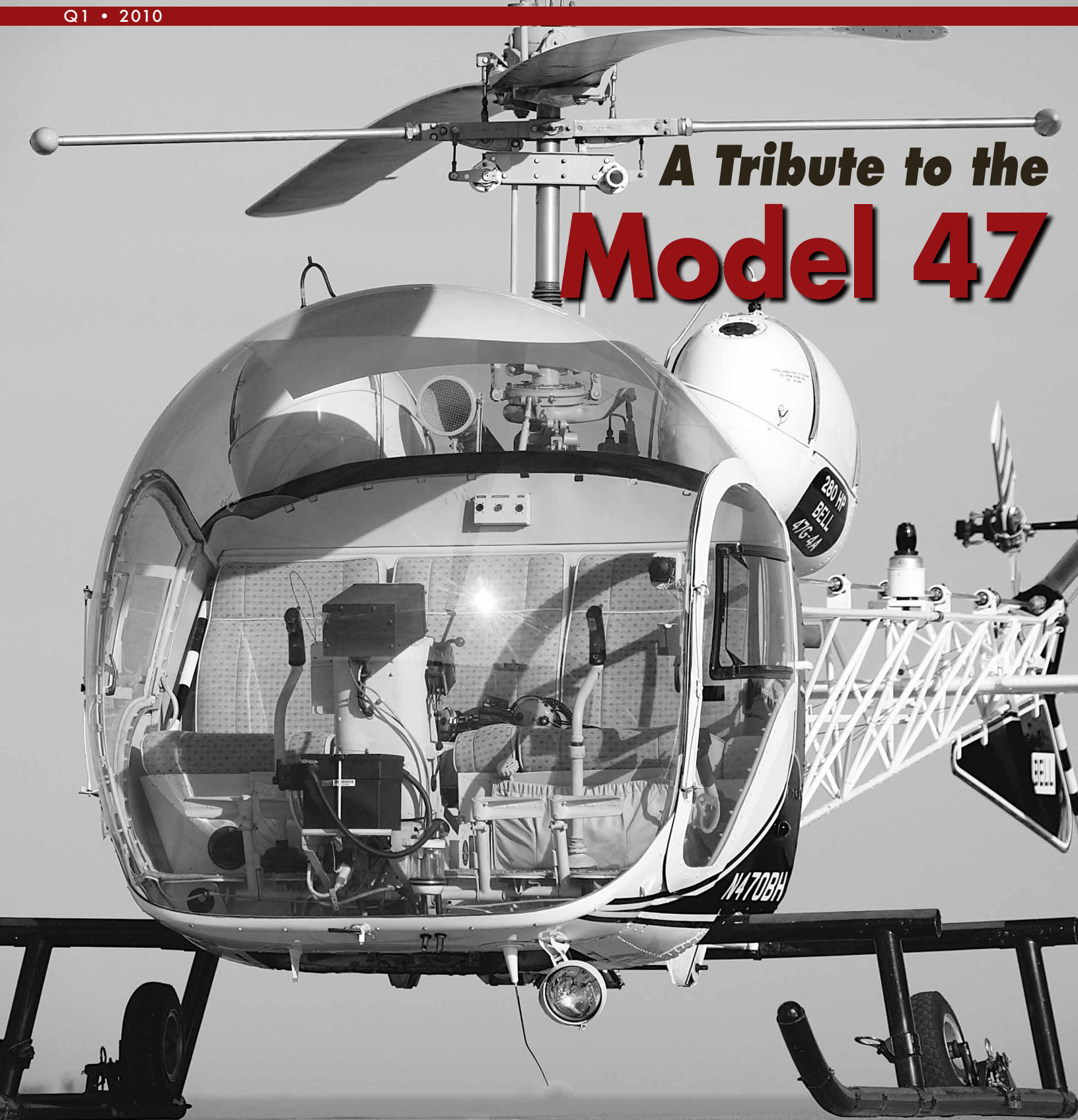


RotorBreeze

Q1 • 2010

A Tribute to the Model 47





A Message from John Garrison

– Chairman & CEO
Bell Helicopter Textron

Bell Helicopter employs many of the world's finest individuals. They are proud of the work we do and passionate about the products we design, build, test and support.

For many of you, this is your first message from me. For others, this is one in a series of messages we have shared. To all of you, whether an old friend or a new face, let me begin by saying how thrilled, honored and humbled I am to be leading this legendary company.

Bell Helicopter employs many of the world's finest individuals. They are proud of the work we do and passionate about the products we design, build, test and support. More importantly, they are dedicated and committed to supporting you in the critical missions that you perform with your aircraft day in and day out.

I spent many of my first days at Bell reaching out to you, our customers—talking and, more importantly, listening in an effort to understand the challenges each of you face and how Bell can better support you on your missions.

Your comments were both motivating and reaffirming. I assure you we will continue with our improvement efforts and streamline our business, strengthening our ability to execute on our commitments and be more responsive to your needs.

Despite the challenges, this past year was an exciting one for Bell Helicopter. We achieved certification of the 429 light, twin-engine helicopter from Transport Canada, the FAA and the European Aviation Safety Agency. We also received approval as an EASA Part 147 Maintenance Training Organization, satisfying a critical need for our customer base. We streamlined our processes for producing helicopters and providing parts to support them. In close collaboration with Bell, our Customer Service Facilities continued to improve their support of you. In fact, as a result of our performance, Professional Pilot and Aviation International News have recognized Bell as the industry leader in customer support year after year.

On top of that, the V-22 entered the fight with the U.S. Marine Corps in Afghanistan and the U.S. Air Force Special Operations Command in the Iraq theater and the Marines deployed the newest version of the Huey, the UH-1Y, against pirates along East Africa's coast and our foes in Afghanistan.

Each of these major accomplishments would not have happened without the

relentless devotion and teamwork of all Bell employees.

This year, we will continue to focus on fielding products and services that bring greater value to you in the completion of your missions. We will upgrade and expand our service capabilities globally. We will streamline our operations, systems and processes to make Bell even more responsive and cost competitive. We will build on our longstanding leadership in customer service, redefining "best-in-class"

We at Bell understand the importance of maintaining a strong customer orientation and we are dedicated to your success. Much of this year will be spent listening to, and understanding, your missions and objectives so we can better anticipate your future needs and requirements.

In reflection, I am proud of the accomplishments the Bell team has made. I recognize we face many challenges in the months ahead. I am confident that the Bell team is up to that challenge and am excited to continue our partnership as we carry on our mission to change the way the world flies.

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The helicopter industry displayed considerable resolve during one of the most economically challenging years on record. There is no disputing that flight hours trended downward, but there is optimism emerging. Please allow me to recap some of the points raised in last year's article and provide you a window on Bell's customer service plans for 2010 and beyond.

Especially in the times we find ourselves in, it is critical that a company focuses on its strengths and its competitiveness. Bell is taking a firm grip on its core strengths in helicopter reliability, productivity and customer service, while improving its operating efficiencies to ultimately lower life cycle cost. The following is a summary of our progress toward this goal and our plan forward in the coming year.

Bell has made progress on cost containment and managed to improve on our promise to cap the annual spares price at a set target. The promise was made in last year's article to hold the 2010 spares price increase within a range of 3-5%. Announced in a separate letter mailed in December, Bell has improved on this goal by limiting the increase to a flat 2.5% across the board. We still have a challenge to address on this key objective, but we take some solace in this achievement.

Bell recently aligned all of its affiliate companies within Customer Support and Services (CSS) under my leadership. This alignment provides consolidation of our businesses under distinct value streams and allows us to provide a more comprehensive, market-priced service focus with clear lines of responsibility and accountability. You will hear more on this realignment as the year progresses.

Legacy ship program management is an area of major responsibility for me and my team. Bell's legacy installed base is extensive and must also be supported. As outlined in last year's letter, a dedicated legacy spares department was created in 2009 to address the procurement process. This new department is not only sourcing vendors, it is rationalizing which parts are no longer considered core for Bell manufacturing and will ultimately be outsourced. The next development will be a more robust legacy parts obsolescence management process. Bell is also working with industry to develop ship upgrades that increase mission capabilities.

Last year I stated that no model would be left behind, including the Bell 47. For that reason, it was important that we launched our more inclusive industry alliance strategy with the first Bell helicopter produced. Bell recently announced the sale of the Bell 47 Type Certificate to Scott's Helicopter Services, a Bell-approved Customer Service Facility (CSF) located in Minnesota. We recognized that the market segment this venerable aircraft served was unique, and that the most responsive, cost-effective solution was to transfer ownership to the incumbent market leader. Bell will forever be associated with the Bell 47 helicopter; in fact, we still own and operate a model 47G4A at the Bell Training Academy. Bell will work with Scott's closely during this transition and we will continue to monitor their progress. After all, the "Scott's-Bell 47" still has our name emblazoned on the product.

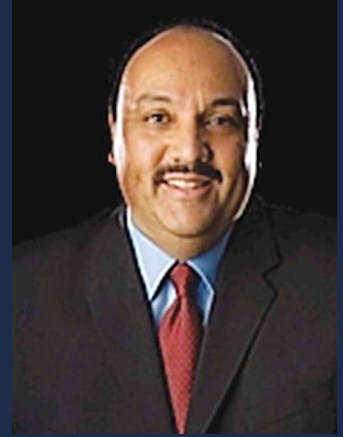
Let me emphasize that selling aircraft type certificates will not be the norm. Bell will utilize its OEM capabilities, its affiliates and its independent allies (eg. CSFs) to lead the way in all aspects of customer support and helicopter upgrade development. As a point of interest, the 206B JetRanger will no longer be in production by Q1 2010. This is a product where Bell will be laser focused. Again, we will work with industry to obtain market intelligence, determine next steps, develop initiatives and partner accordingly.

Bell also believes that commercial customers will require performance-based contracts that guarantee negotiated levels of aircraft/mission readiness. Although this is a major requirement for U.S. military customers, there has not been a groundswell in the commercial market... yet. The entry-level or baseline version of such a concept is a guaranteed hourly rate Parts Plan program that is priced according to calculated direct maintenance cost (DMC) level; such as the Drivetrain & Rotors Parts Plan that we will offer on the new Bell 429. Using our core strength in spares and maintenance, repair, and overhaul (MRO), combined with the capabilities of our network of affiliates, Bell will become more aggressive in this service area.

Finally, the following is a general summary of additional initiatives we have implemented or accomplished in 2009:

- Integrating our affiliate network to provide more comprehensive, market-priced services to the worldwide customer base
- Developing industry alliances for helicopter upgrades/STC development, and licensed/PMA spares production. As stated earlier, we want to increase the productivity and mission capability of Bell aircraft. We will look to our affiliates and third parties for solutions
- Leveraging Bell's Achievement Ranking System (BARS) program for CSFs, which has improved engagement with our network and will ultimately raise service quality levels. This process has also surfaced our premier CSFs which have been anointed Platinum-level status
- Leveraging the CSF Advisory Board to drive product and service improvements
- Developing a new Aircraft-On-Ground (AOG) order policy to better control prioritization of spares ordering
- Completed the roll-out of all Bell commercial technical manuals in electronic format through www.bellhelicopter.com
- Stood up all logistics data products in support of the fielding of the Bell 429

I trust this article provides you a general idea of what we have accomplished in 2009 and where we are heading in 2010. If there is one message I would like for you to take from this letter it would be that Bell is listening to our customers and our partners and that we are prepared to implement the needed changes to provide a beneficial impact on operators and end users alike. We have our work cut out for us this year. The CSS team is fully engaged and committed to our ensuring our customer's success. I look forward to sharing our progress as the year unfolds. Thank you for your business and your loyalty to our products.



Customer Support & Services Update

By Danny Maldonado,
Sr. Vice President,
Customer Support & Services

Bell is taking a firm grip on its core strengths in helicopter reliability, productivity and customer service, while improving its operating efficiencies to ultimately lower life cycle cost.



Model 30 Ship #1 with modified landing gear.

The Past and Future of the Model 47

By Warren Moseley, Legacy Fleet Program Manager



Bell Helicopter is pleased to announce another significant development in support of our out-of-production aircraft fleet. Bell has transitioned all aspects of spares support, technical support and continued airworthiness for the FAA type certificated Model 47 helicopter series (H-1, 2H1 and 2H3). The new owner of the Model 47 type certificate is Scott's Helicopters in Le Sueur, Minn. USA.

This may come as a surprise to many of you, as this model is the world's first civil-certified helicopter and the first production helicopter designed and manufactured by Bell. It was not a decision that was taken lightly, but one that was in the best interest of serving the Model 47 customers and keeping the aircraft viable. We are confident that this decision will provide the cost-effective spares support that operators have been demanding over the years.

The Model 47 roots go back to the original three prototype Model 30 helicopters build in a Gardenville, N.Y. manufacturing garage.

These helicopters were designed and built as part of deal between Larry Bell and Arthur Young. Bell was a believer in the concept of vertical flight and provided Young with the resources to build a working prototype. The first Model 30 made its initial tethered flights in December 1942. The helicopter utilized a 32-foot rotor disk and was powered by a Franklin 160-hp air-cooled engine. The initial Model 30 flights were made with an extended landing gear design and did not exceed one foot in height.

The second Model 30 employed an enclosed cabin and was used extensively for demonstration flights and exhibition. In early 1945, the U.S. Coast Guard called Bell and requested the use of one of the helicopters to rescue four fishermen stranded two miles out on an unstable and crumbling ice pack in Lake Erie. Bell pilot Floyd Carlson flew ship #2 out to the stranded fishermen and rescued them by hovering just above the thin ice, allowing the fishermen to pull themselves on board. For this rescue, Carlson received the Treasury Department Silver Medal and undoubtedly planted the seeds for future helicopter missions.

The third Model 30 was not originally planned (the agreement between Bell and Young was for two prototypes) but was built to correct some of the things the team had learned from the previous two prototypes. In this helicopter, all of the design concepts used from the fixed-wing world were removed and the design focused on what was the best method for helicopter application. Ship #3 had a four-wheeled landing gear arrangement, an improved instrument panel of pedestal design and an open, tubular tailboom. This model proved to have the best flying qualities of the three machines.

The open cockpit was soon remedied when Arthur Young came up with an idea to take a large sheet of heated plexiglas and mold it into the shape of a bubble. This bubble design gave the pilot and passengers an unprecedented view while protecting them from wind and the elements. This design feature is what gives the Model 47 its distinctive feature to this day.

The first Model 47 rolled out of a factory in Niagara, N.Y. on Dec. 8, 1945. At this time, the Civil Aeronautics Administration (later to become the FAA) had no basis for certification for helicopters, so Bell and the CAA worked together on establishing the requirements for creating a civil certification. The culmination of their efforts resulted in the civil certification of the Model 47 on March 8, 1946.

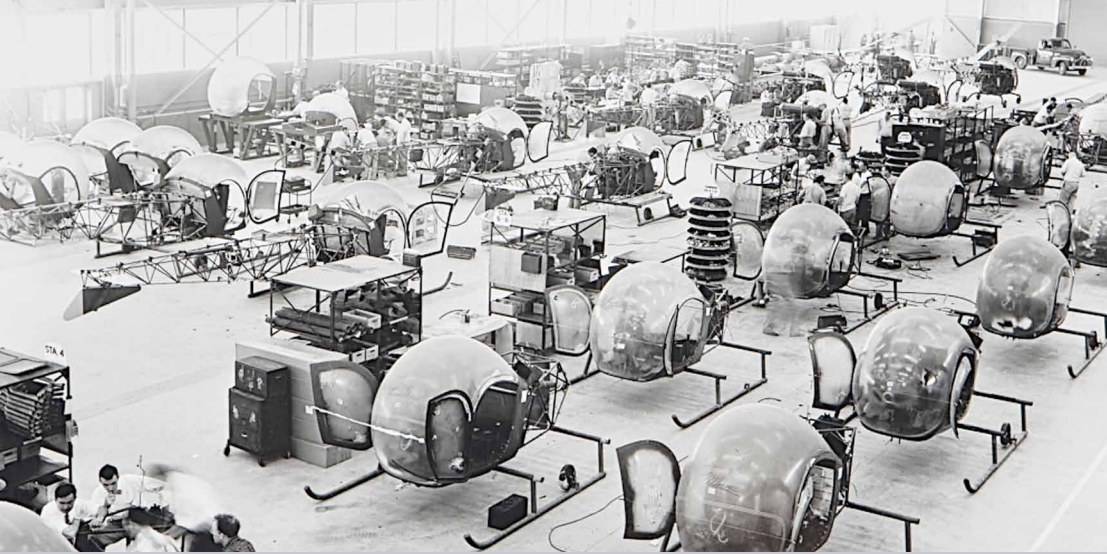
Prior to its civil certification, the Model 47 entered service with the U.S. Army Air Force designated as the YR-13 (later referred to the Sioux). Although the U.S. military operated more than 20 variants of the Model 47 over the years, the most recognized was the model that served during the Korean War, the H-13D and H-13E. Following



Several members of the Gardenville group take a ride on the third Model 30 to test its weight-lifting capabilities. Piloting the aircraft is Joe Mashman. Inventor Arthur Young faces the camera behind the seated passengers.

TIMELINE OF THE MODEL 47 – From 1943 to 1973

| | | | | | | | | | | | |
|------------------|--|-----------------|--|-----------------|---|-----------------|--|------------------|---|------------------|---|
| June 1943 | First unteathered flight of Model 30 (Ship #1) | Dec 1945 | First Model 47 rolls out of Niagra Falls | Mar 1946 | Model 47 receives world's first commercial helicopter license | Dec 1946 | First delivery of Model 47A to U.S. Army | Sept 1947 | Ten Model 47s used to crop dust for locusts in Argentina – first agricultural application | Late 1948 | Bell Aircraft establishes Gulf of Mexico offshore operation – later sold to Robert L. Suggs (to become PHI) |
|------------------|--|-----------------|--|-----------------|---|-----------------|--|------------------|---|------------------|---|



The Bell Model 47 assembly line in Hurst, Texas during the Korean War.

After 27 years of production with more than 20 different models and over 5,000 total units produced, one could easily say the Model 47 transformed rotary-wing aviation and created uses and missions never envisioned by its creators.

Photos Courtesy of Bell archives.



The Bell 47 H-13

North Korea's invasion of South Korea in 1950, the single largest demand for this relatively new product was created. Fitted with medical evacuation stretchers on each skid and a plastic cover to protect the patient, the helicopter had a new role: supporting the Mobile Army Surgical Hospitals (MASH units) as an emergency evacuation vehicle.

The helicopter's ability to get wounded soldiers to these mobile hospitals in minutes instead of hours greatly increased the chances for survival for many of the wounded service men. It is estimated that 25,000 wounded soldiers and Korean civilians were evacuated using the Model 47. Through this difficult time one could say the need for helicopters was cemented into our future.

In addition to Bell's Texas facilities, commercial Model 47s were produced under license by Agusta in Italy, Kawasaki Heavy Industries in Japan and Westland Aircraft in the U.K. Some of these aircraft were even produced under license after Bell ceased production in 1973. The most popular of these was the Model 47G series introduced in the early 1950s. The G-series can be identified by its full bubble canopy, two individual saddle fuel tanks, an open tail boom structure and skid-type landing gear. The last of these models to be built was the G-5. Bell's attempted to create a luxury version of the Model 47 with the 47H and 47J models. The 47H had a full cowling around the powerplant and drive system, a monocoque tailboom and an enclosed cabin for three seats. The 47J was of similar design, but was of a four-seat configuration. The model built under license by Kawasaki (KH-4) differed from the 47J in that it had an open tail boom structure with two individual saddle tanks. Some of the KH-4s are still in operation today in Australia.

After 27 years of production with more than 20 different models and over 5,000 total units produced, one could easily say the Model 47 transformed rotary-wing aviation and created uses and missions never envisioned by its creators. Even today, the Model 47 remains an extremely viable aircraft, one many operators say has the ability to perform specific missions better than any current available offering from any manufacturer.

Bell will continue to align itself with both Scott's and the Model 47 for as long as customers want to fly, and every effort will be made to make this transition as seamless as possible. After type certificate transfer, the Model 47 will be re-titled the "Scott's - Bell 47." Bell is proud to be associated with Scott's Helicopters and we will continue to work closely with Scott's during and after the transition. This moment is somewhat bittersweet for Bell due to the historical nature of this product. But we know that Scott's brings a wealth of knowledge, experience and passion to this endeavor. Bell strongly believes that this approach will bring new life to this helicopter, and that another 50 years of productive flying is entirely possible.

There will undoubtedly be many questions and details to address as we move forward. You can expect additional communications on this subject directly from Scott's Helicopters and Bell over the next few months.



The Bell 47H



The Bell 47G

Welcome to the future of the Scott's - Bell 47.

TIMELINE OF THE MODEL 47 – From 1943 to 1973

| | |
|-------------------|--|
| 1950 | Model 47D-1 flies over the Alps |
| Jan 1951 | Model 47D production begins at Globe Facility in Saginaw, TX to meet the Korean War demand |
| May 1951 | Groundbreaking of the new Fort Worth manufacturing facility in Hurst, TX |
| Sept 1952 | Model 47D-1 flies nonstop from Hurst, TX to Niagra Falls (1,217 miles) |
| Dec 1952 | 416 Model 47s built at Bell in one year |
| April 1953 | 1,000th Bell Helicopter rolls off the production line |
| 1973 | Production of the Model 47 ends |



The BA609 VMSIL

By Diane Culwell, *Engineering Knowledge Management and Communication Specialist* and Ashley Oldham, *Engineering Communications Intern*



The Vehicle Management System Integration Lab (VMSIL) is located at the Bell Helicopter Flight Research facility in Arlington, Texas. The lab is a unique piece of Bell Helicopter that plays a large role in flight safety—especially for the BA609.

The VMSIL combines an iron-bird representation of the BA609 VMS with an aircraft flight simulation host computer. The VMSIL supports the development of the hardware and software associated with the individual systems that make up the VMS, allowing the VMS equipment to operate in a closed-loop manner by integrating a high fidelity mathematical model of the aircraft flight characteristics. The VMS functionality includes the flight control system, avionics system, hydraulics system and actuation, aircraft electrical power generation and cockpit controls, sensors and electromechanical force-feel systems.

Actuator positions are sensed and fed into the math model equations of motion. Aircraft state variables are outputted from the math model and fed back into the flight control computers through sensor models. As a result, the math model can compute the aircraft response to simulated failure conditions.

The VMSIL also provides pilot-in-the-loop control capability. Pilots can “fly”

the VMSIL by operating the controls in the BA609 cockpit rig. The cockpit rig includes the fixed controls, grips, control position transducers, force-feel system and trim actuators installed in a cockpit structure with dual seats. Control inputs from the pilot are fed directly from the control transducers to the flight control computers (FCC) which command the hydraulic actuators. Aircraft state information from the math model is fed back to the flight displays and out-the-window visual system. Pilot-in-the loop VMSIL testing is used to evaluate the fully integrated system performance, flight control system (FCS) failure transients, cockpit cueing, pilot recovery capability and safe flight capability in degraded modes.



Aircraft Flight Simulator

“Primary and secondary failure mode testing that could not be safely accomplished on the real aircraft can be performed in the VMSIL with the flight control software, display, engine controls and pilot controls,” says Ken Krueger, staff engineer.

One of the unique and most useful aspects of the VMSIL is the ability to have all of the VMS components interconnected in the lab for complete system integration tests. The VMSIL allows for rigorous development of complex, highly integrated flight systems, reduction in program and product costs through exhaustive systems testing prior to flight, early identification of issues that might otherwise go undetected from open-loop tests and stand alone simulation and the reduction of the risks with evaluation of failure modes in flight.

The BA609 continues its successful flight test program with two prototypes flying – one in Texas and one in Italy. Flight testing continues to focus on completing envelope expansion in all flight modes including airplane, vertical take-off and landing and conversion. Approximately 75 percent of developmental flight test points have been completed and the aircraft has successfully demonstrated operation at 275 knots and 25,000 feet.

Flying Smarter with Condition-Based Maintenance

By Catherine Ferrie, Manager, Technology IRAD/CRAD Programs and Brian Mesing, Manager, Integrated Logistics Support



Imagine a future where your laptop ties you into the mind of your helicopter – it speaks her language – it is your translator. How is she doing today? And well before every flight, you already know what needs to be checked, what needs to be serviced and what you need to plan for in the next 30, 60, 90 days. But this is not based on a predefined schedule, a “one size fits all” maintenance plan. This is an individually tailored maintenance plan specifically for YOUR aircraft. For the way YOU fly.

Just how “futuristic” is this? Well, in the automotive industry, this maintenance concept is becoming standard. Gone are the days of the “required” calendar-based oil changes and regular tune-ups. Vehicles today tell us when it’s time to change fluids, monitor tire pressures, and can even send vehicle health data back to the manufacturer automatically. Advanced sensors and computer algorithms tell vehicle owners when to perform preventive maintenance based on the actual condition of their vehicles. In many instances, the manufacturer can inform the owner that maintenance will be needed well before the vehicle exhibits any symptoms to the driver. This allows the owner to schedule maintenance at their convenience, rather than calling for a tow truck after a breakdown. So, why not have this capability on your helicopter?

We agree. Bell Helicopter is actively engaged in the development of the smart technologies needed to make this type of proactive approach to maintenance, commonly known as Condition-Based Maintenance (CBM), a reality for our customers. The foundation of the CBM philosophy is the ability for operators to perform maintenance based only on the evidence of need (which is forecasted by analyzing data collected from aircraft sensors), not based on a predefined schedule that may or may not fit the way YOU fly. This innovative maintenance philosophy focuses on delivering reduced maintenance costs and increased aircraft operational availability which translates into a safer, more efficient helicopter operation.

Bell is investing in, and partnering on, a variety of CBM initiatives. In October 2007, the U.S. Army Aviation Applied Technology Directorate (AATD) initiated a three-year program with Bell to develop and demonstrate an integrated set of diagnostic, prognostic and system health assessment technologies to enable transition to a CBM-based philosophy. Specifically, the program is developing an integrated set of dual use technologies that will enable:

- reduction of inspections and preventative maintenance
- expansion of serviceability criteria
- extension of service-life limits or time between overhaul, and
- prediction of failure with sufficient fidelity to allow scheduling of what would otherwise be unscheduled maintenance.

The technologies developed as a part of this program will cover all major aircraft systems: propulsion, drive systems/mechanical components, electrical power/wiring, structures, rotors/dynamic components, and flight controls/hydraulics. The result of the program is a mix of technologies that can transition

to fielded and future aircraft in an Integrated Vehicle Health Management solution.

Another example of Bell’s commitment to a CBM philosophy is illustrated in the recently certified Bell 429. Many inspections that were traditionally based on the calendar or flight hours have been replaced by event- based inspections. There is no scheduled engine oil change interval, and a kit to monitor vibration of engine and drive system components is currently in development.

Additionally, Bell is working on technologies that support the implementation of Integrated Vehicle Health Management. Imagine being able to scan a component and instantly have all of that part’s associated data available at your fingertips as well as having your helicopter tell you what components (by part number and serial number) are installed. How much time and money could this save you? In the Bell vision, radio frequency identification (RFID) will be used to provide this type of real-time aircraft configuration management and maintenance time reduction.



Graphic by Ross Turley

Finally, all of these enabling technologies will be tied together through a robust, simple, and portable user interface. This will come in the form of a software suite designed to allow operators and maintainers to interact with the aircraft in ways never before seen in the rotorcraft industry. Residing on a rugged tablet PC known as a portable maintenance aid, this will use 3D visualization techniques and wireless technology to enable rapid troubleshooting, simplified parts management, just-in-time training and even a real-time link with the OEM – meaning technical support is just a mouse click away!

Bell is committed to the CBM vision and to our customers, who stand to benefit greatly from it. Our goal has always been simple: provide you with the best technology in the world to keep you flying, and with Integrated Vehicle Health Management, you will not only be flying but you’ll be flying smarter.



Bell 429 Training – Enhanced by Technology

By Connie Springer, Senior Training Specialist, *Bell Helicopter Training Academy*

With the introduction of the new Bell 429, the Bell Helicopter Training Academy chose to use technology tools to enhance the learning experience for our students. Comprehensive training content, combining graphics, animations and text, has been



assembled into a Learning Content Management System (LCMS) database and compiled into separate training courses for pilots, maintainers and electricians. The LCMS allows training personnel to generate each course in the form of a student

handout, instructor guide and interactive presentation to ensure a consistent experience in the classroom.

The various Bell 429 courses have been integrated into the Academy's Learning Management System (LMS), a database that holds all Academy training materials and gives instructors immediate access to the 429 training presentations. The LMS also enables students to take assessments via computer, scoring results automatically to allow instructors to provide individualized attention to students needing additional help.

Electronic classrooms at the Academy further enhance presentation capabilities for instructors and students. Each student has a computer that is connected to the instructor computer through software that allows the instructor to show the presentation projected at the front of the classroom on student screens simultaneously. The software also allows the instructor to turn the student computers on or off, provide or deny student access to the Internet or other applications and monitor or assume

control of each student's computer activity from the instructor station.

To further enhance the engaging classroom experience, the Academy will provide additional Bell 429 training devices onsite. For maintenance trainees, a full-sized Composite Maintenance Trainer (CMT), using a prototype aircraft that has been modified for training, will offer the advantage of hands-on training. In addition, real aircraft parts in the classroom will allow trainees to view and manipulate actual parts during the classroom instruction.



For pilot trainees, an Advanced Flight Training Device (FTD) will be constructed to Level 7 FAA Certification. This non-motion device will include a high-definition, direct-projection visual system and a tuned vibration system to increase realism of the simulated flight. After demonstrating procedural proficiency in the simulator, trainee pilots will have an opportunity to fly the Bell 429 to complete their flight training experience.

The Bell 429 training suite will capitalize on the legacy of the Bell Training Academy's exemplary instructor staff by providing new methodologies and tools. By combining instructor expertise with this advanced instructional support, the Academy will provide Bell 429 students with the finest training experience possible.

Bell Helicopter Training Academy Receives EASA Part 147 Maintenance Training Organizational Approval

The Bell Helicopter Training Academy has received European Aviation Safety Agency (EASA) Part 147 Maintenance Training Organization Approval. Therefore, the Academy is approved to provide EASA B1.3 training on the Bell 427 (PWC PW207D). Additional B1.3 and B2 courses will be added shortly.

For a complete schedule of all courses, please visit www.bellhelicopter.com/en/training or call 1-800-368-2355 or contact the Academy Administration directly at BTAdmin@bellhelicopter.textron.com.



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The Evolution of Aircraft Record-Keeping

By Elizabeth Howard, Training Manager, SkyBOOKS



As an aircraft owner, you understand the value of your aircraft records. The thought of lost or destroyed records has motivated many owners to invest in electronic record-keeping systems. Just as past aviation errors have fostered the evolution of flight, aviation record-keeping errors have helped electric record-keeping programs to evolve. You have heard it time and again: operator error is the largest human factor in aviation. SkyBOOKS utilizes three strategies to manage human error in our electronic record-keeping program: Error reduction, error capturing and error tolerance.

Error Reduction

Electronic programs reduce the human factor from maintenance tracking. SkyBOOKS loads all maintenance required by the maintenance manual chapters 4, 5, and 12 or AAIP. Our quality department has reviewed and approved each aircraft template. Many operators have created their own electronic record-keeping system that is tailored to meet their unique needs and is usually very affordable. Unfortunately, the chances of an error are high considering thousands of data entries were recorded by a single human. Even though the chances are that the person loading the data and creating the homemade electronic record-keeping system is the most knowledgeable, this person is nevertheless human.

SkyBOOKS reduces errors by continually designing out any potential for errors. Each SkyBOOKS screen has been designed and approved by a group of pilots, mechanics, and quality control professionals. As a result, you shouldn't have to change your vocabulary or memorize a complex system to efficiently track your maintenance.

Error reduction can also be achieved by proper training. SkyBOOKS step-by-step tutorials allow its users to watch a narrated scenario for the screen they are currently viewing. Each SkyBOOKS account has a personal account representative who is available 24/7.

Error Capturing

SkyBOOKS captures many human errors during the document verification process. Customers are often surprised to find that they have been tracking life-limited components as on-condition or at an incorrect interval. They are disappointed that their previous electronic record-keeping system was not tracking a mandatory inspection. At the same time, they are grateful the error was captured before it was discovered by the FAA (and before they spent thousands of dollars replacing a component that still had 800 hours before retirement).

Error Tolerance

Finally, error tolerance is accepting that humans do make mistakes. With this acceptance, an electronic record-keeping system should be designed so that a single human entry cannot cause the program to fail completely. Users have the capability to correct nearly every entry made.

Screen shots from the SkyBOOKS user-friendly system



The Five Most Common Errors Captured:

1. Tracking components with incorrect hour intervals
2. Tracking life-limited components as on-condition
3. Not tracking mandatory inspections
4. Not tracking an overhaul item
5. Not tracking repetitive inspection for an airworthiness directive (AD)

The Top Five Reasons for Record-Keeping Errors:

1. New part numbers may have different tracking intervals
2. Missed maintenance manual revision
3. Confusing ADs
4. Modifications added or eliminated an inspection requirement
5. Misinterpretation of Continuous Airworthiness requirements

Just as aircraft mishaps can lead to evolutions in aviation, our findings help evolve how we manage aviation records. No record-keeping system can completely eliminate the human factor, but we can learn to reduce the errors through constant evolution. Here at SkyBOOKS, we avoid using the common term "That's the way it's always been done." Maybe that is why Bell's electronic record-keeping system ranked so high for maintenance tracking programs in the AIN 2009 Product Support Survey.

If you are interested in getting more information on SkyBOOKS and its record-keeping capabilities, please contact Nicole Pischke at (904) 741-0535 or npishke@skybooks.com.



Bell Announces the Formation of a Legacy Spares Management Organization

By Peter Rue, Director, Legacy Spares



Bell has a loyal customer base with a desire to keep their current Bell aircraft flying for as long as possible. The challenge to Bell in supporting these aircraft is as the legacy fleet shrinks, the demand for spare parts become less frequent and therefore results in longer lead times and higher part costs, while presenting other unique challenges to both the internal and

external supply chains.

To better understand these challenges and better support our customers, Bell Helicopter has created a new team, the Legacy Spares Management organization to provide dedicated support for out-of-production or legacy commercial spare parts. For this team, the term "legacy" refers to aircraft that are no longer in production and do not share common parts with aircraft that are currently manufactured on one of Bell's production lines.

In these challenging times, there are many priorities competing for limited resources and unfortunately as a result commercial legacy spare parts, with infrequent demand, do not always receive the support that is needed. Bell's leadership has recognized the need for a highly dedicated organization that is focused on supporting Bell customers flying legacy aircraft.

Established in late 2009 and lead by Peter Rue, director of Legacy Spares Management (LSM), the organization's primary focus is to support the commercial legacy spare business efficiently and effectively. Integrated with Bell's Customer Support and Service (CSS) group, the LSM team is able to provide customers with effective procurement strategies that are aligned with those of CSS.

The LSM includes dedicated buying and sourcing teams to focus on the unique requirements created with the procurement of legacy spare parts. With streamlined commercial oriented processes reducing buying complexities and shortening lead times, the buying organization will leverage the expertise and experience of Bell's sister company Cessna Aircraft.

In concert with the buying team, a sourcing team will focus on establishing a differentiated legacy spares supply base for a more manageable and responsive supply base. Using their existing Bell manufacturing expertise, the sourcing team serves as a rapid response team to support supplier technical questions and potential issues encountered while building parts.

Commercial Legacy Spares Management is designed with the overall benefit of the customer in mind. Through streamlined processes and a more cost-competitive structure, Bell and LSM are committed to faster response times and more competitive part prices that will enable our customers to keep their helicopters flying for many years to come.

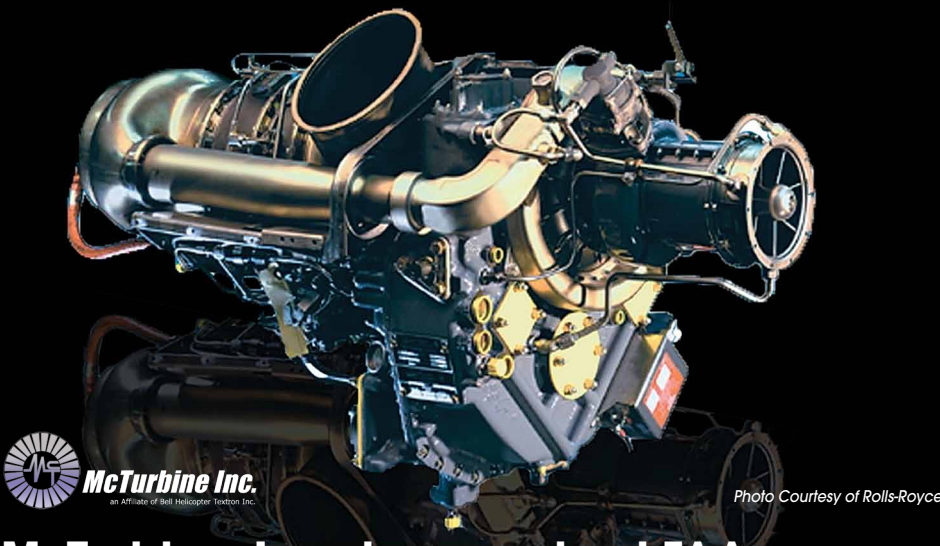


Photo Courtesy of Rolls-Royce

McTurbine, Inc. has received FAA approval to perform MRO services for the Rolls-Royce 250 Series II and Series IV helicopter turbine engines.

For more information, contact Dave Stout, RR250 Program Manager at 361-851-1290 or dave.stout@mcturbine.com.

**A Friendly Reminder to ...
Bell 206L
Customers
Affected by
ASB206L-09-159**

Revision A of the subject bulletin recently released offers a maximum of \$1,000.00 credit reimbursement for x-ray and freight costs. This credit is applicable for affected blades x-rayed per Part III of the bulletin since July 27, 2009 and for affected blades to be x-rayed per Part III. Customers are invited to review the warranty statement for conditions on page 6 of 20 of ASB206L-09-159 Rev A.



Bell's Amsterdam Supply Center Takes on Cessna AOG Orders Benefits Europe, Middle East and Africa Customers

Aircraft on the ground (AOG) for need of a part can turn into crisis situation for any operator, whether that aircraft is a helicopter or an airplane. To improve response time to Citation operators in Europe, Africa, and the Middle East, Bell Helicopter and Cessna recently teamed to leverage the benefits of the Bell Amsterdam Supply Center location and expertise in processing spare parts orders.

Earlier this year Bell and Cessna agreed on a plan to stock Cessna parts most often needed to support AOGs in these regions. Bell is now stocking approximately 3,200 Cessna new parts and rotatable or exchange part numbers at the Bell facility in Amsterdam, The Netherlands. Having these parts in Amsterdam allows Cessna to more rapidly respond to our regional customers needs, getting parts in their hands, in some cases more than 24 hours sooner. Customers continue to place their orders as before through normal channels and billing will remain the same. The major difference, parts are often received days earlier than before – time that can mean all the difference to flight operations and mission success. According to Mark Paolucci, Cessna senior vice president, Customer Service, "This new process (for stocking and filling Cessna parts) is completely transparent to the customer; what they do see is their aircraft operational again, and much quicker than in the past."

At the Amsterdam Supply Center, warehouse staff picks, packs, handles customs paperwork, and creates the shipping air way bills necessary to compete an AOG request. As the volume of activity is expected to be within acceptable levels, no noticeable affect is expected on Bell's ability to respond to helicopter spares demands. Bell Helicopter customers can expect the same level of service they currently experience with the supply center. With a foundation of experience and expertise in the Amsterdam Supply Center staff, Bell, Cessna and our combined regional customers benefit from this collaborative effort. Paolucci sums it up this way, "We chose Bell's Amsterdam Distribution group for their experience in aerospace, their leadership in customer service and the synergies afforded by working with another Textron company."



Bell Helicopter's Canadian Supply Center Expands Offerings

Bell's Canadian Supply Center now provides Honeywell T53 engine spare parts and accessories in Canada. Customers may place orders for these Honeywell parts directly with their supply center account manager using their existing Bell spares accounts.

Through a distribution agreement with McTurbine, Inc., a Honeywell approved independent service center, the Canadian Supply Center is now a one-stop supplier for all Canadian customers' needs.



Information Update — Commercial

By Jim Dawson, Supervisor, Commercial Technical Publications

To continuously increase customer satisfaction, Commercial Technical Publications is moving forward to improve the content, quality and access to documentation. The number one departmental goal for 2010 is to further update our documentation to provide the most current, accurate and user-friendly information. Primary emphasis will be on Maintenance Manuals, Illustrated Parts Breakdown Manuals, and Component Repair and Overhaul Manuals.

In addition to updating our documentation, Commercial Technical Publications will continue to incorporate additional features and functionality into the Electronic Publications Web site at www.bellhelicopter.net and into our DVDs.

Who is Commercial Technical Publications

Located at the Bell production facility in Mirabel, Quebec, Canada, Commercial Technical Publications includes approximately 30 employees and is responsible for all documentation associated with the operation, maintenance and repair of the commercial fleet. In total, this equates to the upkeep of approximately 1,500 existing documents or 150,000 individual pages, as well as the creation of all new documentation.

The individual documentation types created and updated are:

- Flight Manuals (FM)
- Flight Manual Supplements (FMS)
- Manufacturer's Data (MD)
- Operator's Handbooks (OH)
- Maintenance Manuals (MM)
- Maintenance and Overhaul (M&O) Manuals
- Maintenance Manual Supplements (MMS)
- Illustrated Parts Breakdown (IPB) Manuals
- Illustrated Parts Breakdown - Supplements (IPB-S)
- Component Repair and Overhaul (CR&O) Manuals
- Component Maintenance Manuals (CMM)
- Component Repair and Overhaul - Vendor (CR&O-V) Manuals
- Component Maintenance Manuals - Vendor (CMM-V)
- All Standard Practices Manual (BHT-ALL-SPM)
- Electrical Standard Practices Manual (BHT-ELEC-SPM)
- Structural Repair Manuals (SRM)
- Service Instructions (SI)
- Installation Instructions (II)
- Special Tools Illustrated Parts Breakdown (BHT-SPECTOOL-IPB) Manual
- Corrosion Control Guide (CSSD-PSE-87-001)
- Chafing Control Guide (CSSD-PSE-90-001)
- Temporary Revisions (TR)

Working closely with Commercial Technical Publications, Product Support Engineering (PSE) looks after the creation and upkeep of the following documents:

- Alert Service Bulletins (ASB)
- Technical Bulletins (TB)
- Operational Safety Notices (OSN)
- General Operational Safety Notices (OSN GEN)

- Information Letters (IL)
- General Information Letters (IL GEN)

Product Support Engineering also is responsible for:

- Maintaining the documentation on the Electronic Publications Web site at www.bellhelicopter.net
- Managing user subscriptions and access to the Web site
- Compiling and creating DVDs
- Maintaining the Revision Status Listing
- Printing paper copy documentation and reproduction of DVDs for distribution and shelf stock
- Assisting the Commercial Publications Distribution Center in Fort Worth with customer inquiries, order requests, and subscriptions for paper documentation and DVDs

About Electronic Publications

Bell Helicopter is committed to its Web service and DVD products and would like all customers to take advantage of and use these services and products to the maximum extent possible. With over 6,000 users accessing the site, an average of over 15,000 visitors and over 2 million hits each month, Bell believes the Web service and DVD products have proven themselves as viable tools for our customers.

The electronic publications available at www.bellhelicopter.net and on DVD currently include the 204B, 205A1, 205B, 206A/B Series, 206L Series, 212, 214 Series, 222 Series, 230, 407, 412, 427, 429 and 430 models.

Benefits of using electronic publications include:

- Worldwide availability of electronic documentation via the Internet
- A Bell-approved source for up-to-date documentation, meeting regulatory requirements for documentation accessibility, and revision status
- Instantaneous Web updates concurrent with revision release
- E-mail notification of Web updates automatically sent to each registered user
- Ability to download, print and insert the latest revisions into your manuals
- Remote location availability of electronic documentation via DVD

Please refer to the Information Letter GEN-06-106 for additional information on Web service and DVD products.

How to Obtain A Web Subscription

Please feel free to take advantage of this service and register online by accessing www.bellhelicopter.net. A "New User" link is provided on the lower right-hand side of the "Welcome" page to access the registration screen.

- Registration currently includes a free Web subscription service to bona-fide Bell Helicopter owners, operators, and maintainers, as well as to regulatory agencies and Bell-approved customer support facilities

Technical Publications



- Access will be provided for models that are owned, operated, or maintained
- Multiple users are allowed access to the site at the same time. Companies/agencies are only required to register once and then have the ability to share the User ID and Password information with as many employees as desired
- Registration ensures that Bell has all the required information to supply a User ID and Password for Web access to publications
- This information also allows Bell to notify subscribers of updates to the Web site via e-mail

How to Obtain A DVD Subscription

All existing customers who receive Bell's free paper copy documentation will also receive free DVDs and updates for the helicopter models they operate. Distribution of DVDs will occur automatically and will be shipped to the same address used for paper copy distribution. Please contact Commercial Technical Publications if a DVD is not received.

Unless otherwise specified, one DVD is provided for every set of paper copy documentation currently received. In accordance with the Terms of Use statement associated with the DVD, the content may be viewed directly from the DVD, or downloaded for viewing on multiple computers within a given company.

DVD updates are currently distributed twice a year on average and improvements will be made to this existing service by migrating to a quarterly distribution cycle on most models during 2010.

For those customers who do not receive free paper copy documentation and wish to purchase DVDs, please contact the Commercial Publications Distribution Center at 817-280-2584 or via e-mail at publications@bellhelicopter.textron.com.

Release of Documentation

With the goal of providing customers with the latest released documentation as quickly as possible, the Web site will always be the first location to be updated with applicable model information, followed by distribution of paper copy updates, and periodic releases of DVDs.

The Web site at www.bellhelicopter.net is always the most up-to-date source of information available and the Revision Status Listing will be updated in sync with the Web site.

Worldwide customer receipt of paper copy updates lag behind Web site releases, to improve on this, customers have the ability to download, print, and insert the latest revisions into their manuals if desired. This may be accomplished by accessing www.bellhelicopter.net and opening the "Latest Revisions" folder, which is located at the top of the "Table of Contents" selection for each model. This additional option to update paper manuals is designed as a significant benefit; Commercial Technical Publications is always looking at additional ways to expedite the receipt of paper copy updates and DVDs.

When Purchasing a Used Helicopter or Having a Change of Address

To ensure the most current fleet information, address and contact information is on file, please let Commercial Technical Publications know of any changes via e-mail at publications@bellhelicopter.textron.com or by using the Helicopter Sales Notice page, which is available in the front matter of each technical manual. This allows Bell to update the distribution database and ensures all required documentation is delivered to the required location in a timely manner. A notification will also be sent to the local Customer Service Representative (CSR) and Product Support Engineering (PSE) with any changes for seamless support and service.

Helping Us Improve the Manuals

Commercial Technical Publications would like to thank all Bell customers for providing with the team with customer feedback information. This feedback is very important, is always welcome, and allows the team to improve the quality of Bell's manuals with each revision.

Please use the Customer Feedback page available in the front matter of each technical manual or feel free to submit feedback via e-mail at:

pselight@bellhelicopter.textron.com
pseinter@bellhelicopter.textron.com
psemedium@bellhelicopter.textron.com

Product Support Engineering will review the feedback and provide the information to Commercial Technical Publications for incorporation into the manuals.

Helping Protect the Environment

For those customers currently using the Electronic Publications web site at www.bellhelicopter.net to access all required information and no longer require receipt of paper copy documentation, please contact publications@bellhelicopter.textron.com. Doing so will update the profile in the distribution database to cancel paper shipments.

As each type of document is managed individually within the database, special request can be made to eliminate the shipment of certain paper copy documents while continuing to ship others required for operation. Anything that can be done to help protect the environment is greatly appreciated.

Additional Information

This information update will continue in the next release of RotorBreeze and where the topic of "Possibilities and Ideas for the Future" will be discussed.

For additional information concerning Commercial Technical Publications, or to share suggestions or comments on any of the topics covered in this article, please feel free to send a note to:

jdawson2@bellhelicopter.textron.com
Phone: 450-971-6500 x3681
Fax: 450-433-0272

Attention Honeywell T53 Engine Operators: Airworthiness Directive Presents Options to Alleviate Additional Inspections

On Aug. 25, AD2009-15-13 Honeywell International Inc., formerly AlliedSignal and Textron-Lycoming, took effect for the following engines: T5313B, T5317A, T5317A-1, T5317B and T5317BCV turboshaft engines with combustion chamber housing (CCH) part numbers 1-130-610-05, 1-130-610-12 and 1-130-610-17 installed. This AD applies to, but is not limited to, engines installed on the Bell 205 and 210 Series and Kaman K-1200 helicopters.

This directive stems from cracks in the CCH on eight separate instances, two of which resulted in an engine shutdown during flight. This AD addresses detecting the cracks in the CCH prior to any resulting rupture, thus loss of engine power and damage to the helicopter.

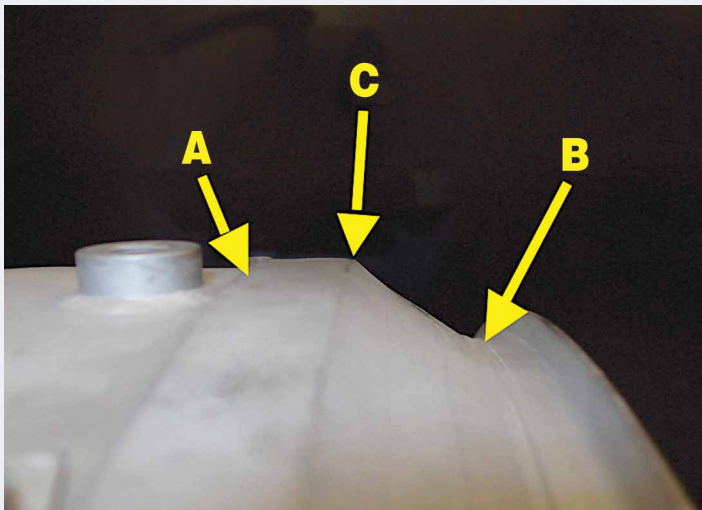


Figure 1: Crack potential is common in the location indicated by point C. Inspection should be performed on the entire area between points A and B. **NOTE:** Weld repairs are not allowed in this area.

Initial and Repetitive Visual Inspection

Within 50 hours time-in-service (TIS) after Aug. 25, a visual inspection of the area between points A and B (Figure 1) around the entire housing circumference of CCH Part Nos. 1-130-610-05 and 1-130-610-12 for weld repairs and cracks. If cracks are detected, replace the CCH before further flight. If weld repairs are detected, replace the CCH within 100 hours TIS after visual inspection.

Visual inspection for cracks should be continued every 50 hours TIS. At any time cracks are detected, replace the CCH before flight. Additional guidance can be found in the Honeywell International Inc. Alert Service Bulletin T53-A0142, Revision 1, and dated Sept. 14, 2006.

Initial and Repetitive Ultrasonic Inspection

For CCH Part Nos. 1-130-610-05 and 1-130-610-12, an ultrasonic inspection must be performed within 500 hours TIS or the next hot section inspection, whichever occurs first, but should not exceed six months after the effective date of this AD.

For CCH Part No. 1-130-610-17, ultrasonic inspection must be performed upon the first engine overhaul, but is not to exceed 5,000 hours or 11,000 cycles.

Repetitive ultrasonic inspections must take place within every 1,200 flights, defined as the cumulative number of landings, since the last inspection or within every 200 flights, if the ultrasonic resulted in findings. For additional guidance, refer to Honeywell International Inc. SB No. T53-0144, Revision 4, dated March 31, 2008.

How can you avoid the repetitive inspections? By the installation of CCH Part No. 1-130-610-19 or 1-130-610R16, or an FAA approved equivalent part. By doing so, the required inspections are terminated as described in this AD.

For details regarding this or other T53 service bulletins during overhaul, repair, or in the field, please contact Honeywell at (800) 601-3099.

New Management for PSE Light Helicopters



Alain Laflamme, new PSE
Manager for Light Helicopters

Following the retirement of Pierre St-Georges, Alain Laflamme has been named the new Product Support Engineering Manager for Light Helicopters. Laflamme has served as a Product Support Engineering (PSE) Representative for medium helicopters for the last 12 years. He will lead the PSE Light Helicopter group in maintaining the fleet of more than 7000 light commercial helicopters.

Requests for technical assistance should be sent to the group using one of the following methods:

Toll-Free: 1-800-243-6407

Tel: (450) 971-6407

Fax: (450) 433-0272

pselight@bellhelicopter.textron.com

However, to reach Alain directly, please contact him at alaflamme@bellhelicopter.textron.com.



New Bell 212 Helicopter Vibration Monitoring System Saves Time and Money by Monitoring the Health of Your Bell 212 Aircraft between Regularly Scheduled Maintenance Intervals

In Dec. 2009, Aeronautical Accessories, Inc. received Canadian certification of the Bell 212 Helicopter Vibration Monitoring System (BHVM); US FAA certification pending approval. This system is a drive-train health monitoring system intended to improve overall health and usage monitoring between regularly scheduled or routine maintenance as required by the Bell 212 Maintenance Manual (BHT-212 MM).

The BHVM assists in maintenance-related vibration functions such as main rotor track and balancing, tail rotor balancing, and main input drive shaft balancing. It allows easy monitoring of the main rotor system, tail rotor drive system, engine gearbox, and combining gearbox. This kit also provides diagnostic information to allow for vibration related track and balance of blades. While the BHVM system can be used for main and tail rotor dynamic track and balance in accordance with inspections and component overhaul schedules as called out in the BHT-212 MM, Chapter 5, and the rotor tracking and balancing instructions in Chapter 18 of the BHT-212 MM, the system does not change the inspection or overhaul schedule as called out in the maintenance manual.

With more than 400 Bell 212's in operation globally, this product has generated a lot of interest by operators. Early detection of vibration related defects can save hundreds of thousands of dollars to the operator by avoiding costly unscheduled repairs and overhauls and also greatly enhances the safety and feeling of security for the crew and passengers.

Aeronautical Accessories, Inc. is always looking for ways to improve the usefulness and function of helicopters and helicopter parts. Whether the mission is transporting workers to and from oil rigs, homeland defense, law enforcement, EMS, SARS, forestry, utility, or corporate use Aeronautical Accessories is working to develop products to make your mission safer and more productive.



Destroyed Aircraft

The following Bell aircraft have been recently reported as destroyed by various official aviation accident investigation authorities:

| MODEL | SERIAL NUMBER | REGISTRATION |
|------------------|---------------|--------------|
| 206A | 606 | VH-AAL |
| 206B | 358 | VH-CSH |
| 206B | 2817 | N261BH |
| 206B | 3777 | D-HJET |
| 206B | 4129 | VT-DAP |
| | | |
| 206L1 | 45251 | N211EL |
| 206L1 | 45421 | N593AE |
| 206L1 | 45544 | N90AE |
| | | |
| 206L3 | 51253 | N6184D |
| 206L3 | 51287 | D-HOPY |
| 206L3 | 51432 | P2-HBG |
| | | |
| 206L4 | 52130 | VT-SPA |
| | | |
| 430 | 49065 | VT-REO |
| | | |
| 47G4A | 7736 | D-HAPP |
| 47-Soloy | 6603 | VH-RTK |
| | | |
| OH-58A (surplus) | 42029 | N901SF |
| | | |
| UH-1B (surplus) | 598 | N50330 |

Bell Helicopter Textron, Inc. furnishes this information as a service to our customers, the FAA and Transport Canada. Bell does not represent that this constitutes a list of all of its aircraft which have been destroyed, but only those aircraft on which it has recently received final reports from various official accident investigation authorities.



What happened to 2009? It was certainly a busy year for the Customer Service Facilities (CSF) Support team. And 2010 looks to be just as busy.

The BARS (Bell Achievement Ranking System) Audit process continues to drive network-wide improvement. The 2009 audit cycle was wrapped up in November and the audit results have been released to each Customer Service Facility. The results show that the CSFs are diligently working to improve their level of service to our valued customers. Please join me in congratulating the following CSFs for reaching Platinum level:

- **Air Asia Company Ltd.** (Taiwan)
- **Alpine Aerotech Ltd.** (Kelowna, British Columbia)
- **Arrow Aviation Co. LLC** (Broussard, Louisiana)
- **Avialta Helicopter Maintenance Ltd.** (St. Albert, Alberta)
- **Eagle Copters Maintenance Ltd.** (Calgary, Alberta)
- **Fuji Heavy Industries Ltd.** (Tochigi, Japan)
- **Motorflug Baden-Baden** (Rheinmuenster, Germany)
- **Northwest Helicopters LLC** (Olympia, Washington)
- **Patria Helicopters AB** (Stockholm, Sweden)
- **Rotorcraft Support, Inc.** (Van Nuys, California)
- **Sikorsky Aircraft Australia Ltd. DBA Sikorsky Helitech** (Queensland, Australia)
- **Uniflight, LLC** (Grand Prairie, Texas)

Last February, Bell Helicopter recognized six Platinum-level CSFs for the 2008 audit cycle at HAI Heli-Expo 2009. We have highlighted each of these outstanding service centers throughout 2009 in *RotorBreeze*. This quarter, we are focusing on the final two Platinum CSFs – Rotorcraft Support Inc. of Van Nuys, Calif. and Uniflight LLC of Grand Prairie, Texas.

Rotorcraft Support, Inc.



Rotorcraft Support, Inc.

RSI, a full-service FAA/EASA-approved helicopter maintenance facility, was established at the Van Nuys Airport in 1986 by Phillip G. DiFiore. RSI became a Bell CSF in 1990, specializing in Bell 47 and 206 field maintenance and component repair and overhaul. Since that time, RSI has expanded its approved services to include additional models and the structural repair capabilities for Bell light-, intermediate-, and medium-category aircraft. RSI maintains a 24,000-square-foot facility with 52 employees, 25 of which are technical staff.



RSI has experienced growth in helicopter refurbishment and, as such, has invested in capabilities to support this line of work. RSI has extensive avionics capabilities, offering installation, repair and upgrades as part of their FAA approval. RSI's design and integration of customized avionics panels utilizes state-of-the-art equipment, including a CAD-operated panel cutter. RSI is an experienced structural repair facility, having added a Bell medium-category tailboom fixture in 2008. This capability complements their Bell 206A-, B- and L-series fuselage and tailboom structural repair fixtures. Rotorcraft Support is an active member of the Airborne Law Enforcement Association and supports law enforcement agencies across California and other regions as necessary.

Rotorcraft Support possesses extensive non-destructive testing capability, with a Level III technician and Level II non-destructive inspector on staff. The NDT staff provides a comprehensive range of services, both mobile and in-house. RSI's capabilities include ultrasonic, radiography, liquid fluorescent penetrant, eddy current, magnetic particle, and borescope/visual inspections. Additionally, Rotorcraft Support holds the Supplemental Type Certificate to replace nickel-cadmium (Ni-Cad) batteries with the Concorde sealed lead-acid battery for the Bell 407 and 430.

Rotorcraft Support "maintains a wide variety of parts on hand as well as an extensive exchange pool offering AOG service, quick turnaround time and excellent customer service."

Rotorcraft Support, Inc., Van Nuys Airport, 16425 Hart Street, Van Nuys, Calif. USA, 91406, 818.997.7667.

www.rotorcraftsupport.com

Uniflight LLC



Uniflight LLC was founded in 1982 by Freelon "D" and Betty Tullos as a specialty CSF focusing on component repair and overhaul and providing Bell spares to its customers. Mr. Tullos has extensive rotorcraft experience, having previously served as head of Heli-Dyne.



In 1998, Uniflight was purchased by Mr. Greg A'slinger. Mr. A'slinger relocated Uniflight to its current 22,000-square-foot headquarters at the Grand Prairie Municipal Airport in October 2000. Uniflight soon expanded from their "specialty" CSF status into a full service CSF, adding field maintenance capability to their list of approved services and additional aircraft to their FAA Part 145 certificate.

Most recently, Uniflight was recapitalized in March 2008 in a transaction sponsored by Hawke Capital. This was followed by Mr. James Loffin joining the company in January 2009 as president and COO.

The service operation of Uniflight involves the operations manager overseeing a staff of 13 full-time and two part-time mechanics. Uniflight is approved for field maintenance and component repair and overhaul for Bell light, intermediate, and medium aircraft. In addition to their Bell-approved services, Uniflight is approved to offer services such as performing inspections and repairs of airframes and engines; installation of approved kits, electronic news-gathering equipment, forestry and medical configurations, and weight and balance, refurbishment and aircraft management. Uniflight also offers full avionics capabilities for most helicopters and light to medium fixed-wing aircraft.

Uniflight has "developed a reputation for more than three decades of prompt and professional support of government and commercial helicopters."

Uniflight LLC, Grand Prairie Municipal Airport, 3108 S. Great Southwest Parkway #11N, Grand Prairie, Texas USA 75052, 972.623.3444.

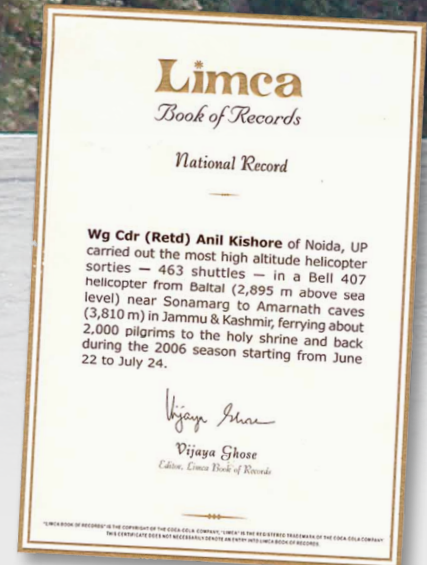
www.uniflight.com

Record Holder Flies a Bell 407



Retired Wing Commander Anil Kishore of Noida in the Uttar Pradesh state in India has the national record in the Limca Book of Records for carrying out the most high-altitude helicopter sorties – 463 shuttles – in a Bell 407. This record was achieved between June 22, 2006 and July 24, 2006. Kishore was ferrying passengers from Baltal to Amarnath Caves in Jammu and Kashmir.

He began flying for the Indian Air Force in 1967, where he served for 28 years. He currently flies for Pawan Hans Helicopters Ltd.



Mexican Air Force Opens New Helicopter Training Center

By Joaquin Alatorre, CSS Development Manager



The inauguration of President Felipe Calderon in January 2007 brought changes to the Mexican fight on drugs. The role of drug eradication was transferred from the Attorney General's Office (Procuraduría General de la Republica) to the Mexican Air Force (Fuerza Aérea Mexicana, or FAM). With this new responsibility, 50 Bell Helicopter 206s were transferred between the organizations along with a portion of the maintenance base at Guadalajara International Airport. With the addition of the aircraft, two new units were formed, Special Operations Air Squadrons (Escuadróns Aéreos de Operaciones Especiales) 214 and 215, with bases in Culiacán, Sinaloa and Pie de Cuesta, Guerrero, respectively.

Along with this new responsibility, FAM was faced with a demand for additional military helicopter pilots to handle the volume of missions. On Feb. 1, the Helicopter Training Center was created to more effectively meet this demand. The new center is at the Air Force Academy (Colegio del Aire) at Zapopan, Jalisco.

The training center has 23 Bell 206B3s in utility configuration for use as rotary-wing trainers. Currently, the center has the capacity to train 60 rotary-wing pilot candidates in an intensive curriculum that includes more than 220 flight hours per pilot. The training covers basic flight, emergency procedures, mountainous terrain flight, formation flying, instrument and night flight and 25 hours of simulator training. To date, the center has completed more than 6,000 flight hours of pilot training.

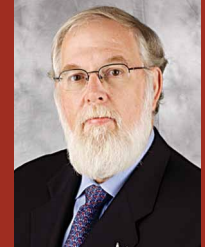
A new 1000-square-meter (10,765-square-foot) hangar became operational Aug. 17 to house the training center's helicopters as well as administrative offices, a stockroom, shops and flight simulators.

With the new training center, the Mexican Air Force will be able to meet the ever-growing number of missions and demands imposed on it, as well as more effectively wage the fight on drug trafficking and production.



TC vs. STC

By Greg Johnson, Customer Support Representative



Bell Helicopter Customer Support frequently receives requests and questions from operators about supplemental type certificates (STCs). As the original equipment manufacturers (OEMs), Bell Helicopter and Bell Helicopter Textron Canada, Ltd. are type certificate holders for the Bell aircraft models shown below. We felt an explanation of these certifications might help operators understand the purpose and limitations.

Type Certificate

According to the FAA, a type certificate (TC) is a formal description of the aircraft, engine or propeller. The TC lists limitations and information required for type design certification including airspeed, weight, and thrust limits, etc. A type certificate is awarded by aviation regulating bodies to an aerospace manufacturer after it has been established that the particular type design of a civil aircraft, engine, or propeller has fulfilled the regulating bodies' current prevailing airworthiness requirements for the safe conduct of flights under all normally conceivable conditions. (Military types are usually exempted.) Type certificates are normally issued for airframes, engines and propellers. The civil aviation authority of a given country (such as the FAA, Transport Canada and European Aviation Safety Agency) has similar documents that are established after the aircraft, engine or propeller is certified. The FAA calls these documents type certificate data sheets or TCDS.

FAA type certificates can be downloaded at:

http://www.airweb.faa.gov/Regulatory_and_Guidance_Library/rGMakeModel.nsf/MainFrame?OpenFrameSet

Transport Canada type certificates can be downloaded at:

http://www.tc.gc.ca/aviation/applications/nico-celn/en/adv_search.asp?x_lang=e

| TYPE CERTIFICATE DATA SHEETS AND SPECIFICATIONS | | | |
|--|------------------------------|---------------------|---------------|
| ALPHABETICAL INDEX | | | |
| Aircraft Listing | | | |
| Type Certificate Holder and Model Number | TC Approval # and Revision # | Certification Basis | Volume Number |
| BELL HELICOPTER TEXTRON | | | |
| 47J, 47J-2, 47J-2A, 47K | 2H1, Rev. 13 | CAR 6 | IV |
| 47G-2A, 47G-2A-1, 47G-3, 47G-3B, 47G-3B-1, 47G-3B-2, 47G-3B-2A | 2H3, Rev. 19 | CAR 6 | IV |
| 47G-4, 47G-4A, 47G-5, 47G-5A | H-1, Rev. 41 | CAR 6 | IV |
| 47B, 47B3, 47D, 47D1, 47E, 47G, 47G-2, 47H-1 | H105W, Rev. 6 | FAR 29 | IV |
| 2145T | H15W, Rev. 22 | CAR 4 | IV |
| 204B, 205A, 205A-1, 205B, 210 | H45W, Rev. 27 | FAR 29 | IV |
| 212, 412, 412CF, 412EP | H65W, Rev. 4 | FAR 29 | IV |
| 214B, 214B-1 | LTC-21, Rev. 3 | CAR 9 | VI |
| BELL HELICOPTER TEXTRON (CANADA) | | | |
| 206, 206A, 206A-1 (OH-58A), 206B, 206B-1, 206L, 206L-1, 206L-3, 206L-4 | H25W, Rev. 42 | CAR 6 | IV |
| 407 | H95W, Rev. 15 | FAR 29 | IV |
| 222, 222B, 222U, 230, 430 | R00001RC, Rev. 4 | FAR 27 | IV |
| 427 | | | |

Supplemental Type Certificate

An STC is a document issued by the airworthiness authority approving a product that modifies the aircraft, engine, or propeller type design. The STC defines the product design change, states how the modification affects the existing type design, lists serial number effectivity and provides instructions for continued airworthiness. It also identifies the certification basis, listing specific regulatory compliance for the design change. Information contained in the certification basis is helpful for those applicants proposing subsequent product modifications and evaluating certification basis compatibility with other STC modifications.

The STC process provides a means for additions, omissions or alterations to the aircraft's certified layout, built-in equipment, airframe or engines. The scope of an STC can be extremely narrow

or broad. It could include minor modifications to passenger cabin items, installed instruments or major modifications to include alternate engine installations.

STCs are applied because either the type certificate holder's refusal (frequently due to economics) or inability to meet some owners' requirements. STCs are frequently raised for out-of-production aircraft conversions to fit new roles. Before STCs are issued, procedures similar to type certificate changes are followed, likely including thorough flight tests. STCs belong to the STC holder and are generally more restrictive than type certificate changes.

| Summary of Federal Aviation Administration Supplemental Type Certificates | | | |
|---|-----------------------|---------------------------------------|--|
| Bell Helicopter Textron | | | |
| Aircraft Model TC Number | STC Number STC Status | Description | STC Holder |
| The OEM (Bell or Bell Canada) is not the holder of the STC. The holder is always another company that develops, handles the certification process, manufactures and is responsible for installation documentation and continued airworthiness instructions. | | | |
| Example: | | | |
| Summary of Federal Aviation Administration Supplemental Type Certificates | | | |
| Bell Helicopter Textron | | | |
| Aircraft Model TC Number | STC Number STC Status | Description | STC Holder |
| 412, 412CF, 412EP, H45W | SA0001234 | Installation of a prop wash detector. | Acme Widgets & Gadgets, Inc. 123 Widget Road Somewhere, US Anywhere U.S.A. |

FAQs (Frequently Asked Questions):

Q1. What is Bell's opinion of the STC for the installation of an XYZ radar altimeter in a Bell 212?

A1. Bell did not develop the STC and therefore has no opinion about the installation. Bell suggests that the customer contact the holder of the STC.

Q2. Will Bell assist me (third party) in getting approval for a STC?

A2. As the airframe OEM, Bell does not normally get involved in the certification process for STCs. However, Bell is willing, on a case-by-case basis, to assist in the development of an STC on a contractual basis by providing intellectual property or engineering data.

Q3. Do I need to complete the FAA Form 337 process for the installation of a STC or Bell Service Instruction (SI) or Installation Instruction (II)?

A3. Bell recommends that the customer contact their local airworthiness authority to verify the certification requirements for these installations.

Service Installation Instructions

Service Instructions and Installation Instructions are a combination of the installation instructions, the parts catalog and instructions for continued airworthiness for equipment or kits that are added to the basic airframe. These kits are installed during aircraft manufacture by Bell, later by customizing shops or by the customer. Both of these instructions are FAA- or Transport Canada-approved documents and are similar to an STC that is issued to parties other than the OEM (Bell).

Bell recommends that owners and operators check the Bell online technical library to ensure they have the latest revisions to the Flight Manual, Maintenance Manual and Illustrated Parts Catalog.

Direct Maintenance Cost Projections for 2010

Bell's 2010 annual price increase for spare parts used on in-production aircraft establishes an overall increase of 2.5%. Within the Direct Maintenance Cost (DMC) calculations, this increase primarily affects the costs associated with life-limited parts, parts estimated for overhaul of components and on-condition components. The labor estimate remains at \$80.00 per hour and fuel cost is adjusted from \$3.00 per gallon in 2009 to \$4.00 per gallon in 2010.

Over the course of a year, Bell receives a large amount of requests for cost estimates with different labor rates or fuel costs from those that are published. In an effort to more accurately predict the DMC for a particular region, Bell will, in the future, publish estimates that exclude actual fuel-per-gallon costs and labor-per-hour rates. What will be presented are the maintenance man-hour-per-flight-hour estimates and the actual gallons-per-hour fuel-burn rates for each particular model. It will be the operators' choice to provide their own costs for these two variables and establish a more customized estimate of their DMCs. The new estimating format is anticipated in mid-2010.

Bell Helicopter Textron Inc. 2010 Direct Maintenance Cost Estimates + Fuel ⁽³⁾

| | 206L4 | 407 | 412 |
|--------------------------------------|-----------------|-----------------|-------------------|
| Fuel and Lubricants | | | |
| Fuel (1) | 152.00 | 184.00 | 452.00 |
| Lubricants (3% of fuel costs) | 4.56 | 5.52 | 13.56 |
| Fuel & Lubr. Sub Total | \$156.56 | \$189.52 | \$465.56 |
| Labor (2) | | | |
| Inspection | 26.46 | 13.17 | 38.08 |
| Overhaul | 7.21 | 9.63 | 8.40 |
| Unscheduled and On-Condition | 27.90 | 66.25 | 46.43 |
| Labor Sub Total | \$61.57 | \$89.05 | \$92.91 |
| <i>MMH/FH</i> | 0.77 | 1.12 | 1.18 |
| Parts | | | |
| Inspection | 1.51 | 4.11 | 11.72 |
| Retirement Parts | 67.23 | 91.23 | 122.05 |
| Overhaul | 29.64 | 59.55 | 53.38 |
| Unscheduled and On-Condition | 73.48 | 84.35 | 210.58 |
| Part Sub Total | \$171.86 | \$239.24 | \$397.73 |
| Airframe Sub Total | \$389.99 | \$517.81 | \$956.20 |
| Powerplant Direct Maintenance | | | |
| Direct Maintenance Costs (4) | 69.85 | 85.00 | 273.34 |
| Line Maintenance Labor | 5.33 | 5.33 | 27.20 |
| Powerplant Sub Total | \$75.18 | \$90.33 | \$300.54 |
| Total Average Cost per FH | \$465.17 | \$608.14 | \$1,256.74 |

- Notes: (1) Fuel costs calculated at US \$4.00 per gallon.
 (2) Labor costs calculated at \$80 per maintenance man-hour.
 (3) Basic VFR helicopter.
 (4) Engine DMC represents total costs of maintenance including overhauls, accessory maintenance, unscheduled maintenance and accruals for scheduled maintenance and life limited parts.

Norwegian Bell 412s Celebrate 100,000 Hours in the Air



The Norwegian Air Force's fleet of Bell 412s celebrated a milestone 100,000 flight hours in late 2009. Eirik Stueland, second in command of 339 Squadron at Bardufoss, a seasoned pilot with over 2,000 hours on the Bell 412 said, "I flew my first trip with the Bell 412 in October 1998. It was an extreme sense of having control of such a responsive and maneuverable machine. The machine has no advanced computer aids or autopilot. All elements must be made and kept by the pilot, and navigation is taking place mainly by means of good maps and a stable operating system. It has proven itself good in most missions we conduct, in a diversity of widely varying and sometimes extreme, climatic conditions in both home and abroad. From a purely pilot-perspective, the 412 is the most versatile machine I have flown."

The Norwegian Air Force fleet includes eighteen Bell 412s each with flying hours ranging between 4,500 hours to 7,000 hours. "The Bell helicopters do not have a limit on how many total hours they can fly as it is with the Lynx. Bell helicopters have some components that have a limit on the number of hours they can be used, but as long as these are changed, these helicopters have a long life," said Major Bjørnar Strøm, of the helicopter office of Norway's Defense Logistics Organization.

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Bell Helicopter 2010 M&O Conference Schedule

- July 27-28 Jakarta, Indonesia
- August 2-3 Sydney, Australia
- August 5-6 Caloundra, Australia
- Mid September Johannesburg, South Africa
- October 25-26 Sacramento, California
- November 8-9 Ottawa, Ontario
- November 15-16 Fort Lauderdale, Florida

For more information, please contact your Customer Support Representative or Leslie Ferry at laferry@bellhelicopter.textron.com.

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