

Gardenville – An AHS Vertical Flight Heritage Site

By Tommy H. Thomason

“Gardenville” was the Bell Aircraft facility where the first Bell helicopter was built and tested, first in ground runs and then in flight. When I joined Bell Helicopter in 1972, some of the handful of engineers assigned to Bell’s Gardenville were still there, among them Bart Kelley, who had become the Vice President of Engineering. To them, it was a near-mythic place.

In 1928, young Arthur M. Young decided to invent the helicopter. He progressed from research in libraries to experimenting with small models powered by rubber bands and electric motors. He eventually realized that some inherent stability was essential for a successful helicopter and focused his experimentation on that goal. His solution was the stabilizer bar (implemented on the model with a flywheel that also provided remote-control capability). By 1941, he was demonstrating the stability and precision of control of his final model by flying in and out of his barn and landing on a designated spot.

Young’s achievement was brought to the attention of Larry Bell, who had founded Bell Aircraft just a few years earlier (1935) in Buffalo, New York. Bell was very impressed by the demonstration he received and in late 1941 signed a contract with Young to build two full-size helicopters based on the flying model, using Bell’s facilities. Young’s assistant, Bartram Kelley, accompanied him to Buffalo. The Bell engineering department, however, was preoccupied with existing airplane

development and production, now that war had been declared. What’s more, Art’s approach to design, fabrication, and test was more like that of the Wright Brothers than the formal procedures of an airplane factory.

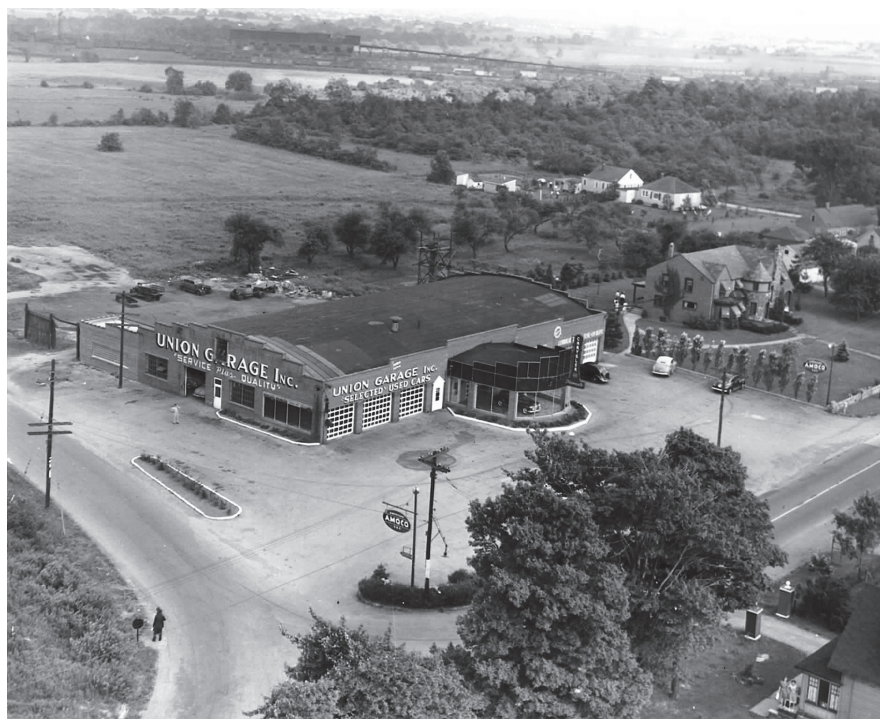
Young and Kelley therefore made arrangements to set up an offsite facility where formal drawings, manufacturing

time, according to Bart Kelley, did the workforce exceed 32 people.) There they set about scaling up Young’s model helicopter design and creating flight controls for a pilot, a feature that was not necessary for his remotely controlled model.

The interior of the facility was divided into five parts: a small office space; the

machine shop and assembly area, which occupied about half the building; a wood shop for making rotor blades; and a drafting room, later referred to as the “paper shop,” and a model shop in what had been the new-car display room.

In only six months, this small group created the first Model 30 and began tethered hover tests, flown by Art Young himself, in the parking area behind the garage. Six months after that, on June 26, 1943, Bell test pilot Floyd Carlson took Lady Genevieve, as it had been named, on its maiden flight around the adjacent meadow. By July, she was being flown at over 70 miles per hour (112 km/hr). In



Arthur Young, Bart Kelley, and a small contingent of Bell Aircraft employees utilized the former Union Garage in Cheektowaga, New York for the design, fabrication, assembly and flight test of the first Bell helicopters. Ground run and tethered flights were accomplished in the parking area in the rear of the building; the meadow beyond was used for flight tests.

documentation, rigid production control and procurement procedures, etc., were unnecessary. (This short-cut approach predated the now famous Lockheed “Skonkworks” by a year.) The venue was a former car dealership and garage in Cheektowaga, New York, 20 miles (32 km) south of Bell’s main plant north of Buffalo. It became known as Gardenville, after a hamlet just south of what would be the birthplace of the Bell helicopter.

Young, Kelley, and a small team of about 15 people, engineers and experienced shop workers moved to the facility on June 23, 1942. (At no

September, Carlson, now flying from a nearby airport, had begun to teach himself how to autorotate, gliding down without power and making a power-off landing.

The second helicopter was flown in late September 1943; one of the first passengers was Larry Bell. A series of public demonstrations followed, including the first flight in the western hemisphere inside a building, the Buffalo Armory, on May 10, 1944 and a flight demonstration at Buffalo’s Civil Stadium on July 4, 1944, where Carlson hovered the front wheel of a Model 30



The first helicopter was named Lady Genevieve. Here it is in a tethered hover being flown by Arthur Young. Once controllability was verified, the outriggers were removed and a wheeled landing gear installed, along with an outer shell on the sides of the cockpit and around the engine compartment and tail boom.



Bart Kelley, Arthur Young and Floyd Carlson had their picture taken in front of the second Bell helicopter, which featured an enclosed cabin and seating for two. It was subsequently used for at least two emergency missions that could only have been accomplished with a helicopter.

into the palm of Young's hand.

The Gardenville team then exceeded their remit by building a third helicopter that first flew on April 25, 1945. It had the best handling qualities to date and incorporated changes and features that would be the basis for the first Bell helicopter to receive civil certification, the Model 47. As a result of the need to transition from research to production, the helicopter group was relocated to the Bell main plant at Niagara Falls in June 1945. More than 6,000 Bell Model 47s would be built over the next four decades, with aircraft still operating today.

Although "Gardenville" was long

known at Bell Helicopter and among aviation historians as the birthplace of the Bell helicopter, over time the number of people who knew where it was has dwindled to a handful. Like Camelot, it was in danger of becoming a legend of no certain physical location.

The AHS International Vertical Flight Heritage Sites Program is intended to recognize and help preserve sites of the most noteworthy and significant contributions made in both the theory and practice of helicopter and other VTOL aircraft technology. AHS hopes to promote to the public the rich history of the worldwide vertical lift community through this program. In March 2014,

Gardenville was named as the third location to be recognized as an AHS Vertical Flight Heritage Site.

The original building at the corner of Union and Losson Roads in Cheektowaga has long since been replaced by a Rite-Aid Pharmacy. Benderson Development Corporation, which owns the surrounding property, has been very supportive of this commemorative effort and agreed to the placement of the large bronze plaque at the site.

The formal unveiling and dedication of the memorial plaque will be held on June 24, 2015 at the Niagara Aerospace Museum, which is located close to the original Bell plant at the Niagara Falls Airport. The following morning, the plaque will be erected at the "Gardenville Site" in Cheektowaga, New York, with local and state officials participating in the ceremony. The dedication will be 70 years to the day after the work of the Gardenville facility was completed, having been instrumental in evolving Art Young's successful toy into a practical helicopter for a myriad of uses.

About the Author

Tommy Thomason is a former aerospace executive with Bell Helicopter and Sikorsky Aircraft. In retirement, he writes books and monographs on U.S. Navy carrier-based aircraft history. (All photos by Bell Helicopter via Tracy Rozelle/ Paul Fardink.)



Although the Gardenville team was only formally authorized to build and test two helicopters, they went ahead and built a third based on their experience with the first two. It became the basis for Bell's Model 47, the first civil-certified helicopter.