Background on "Gardenville" Historic Site

**Significant Persons:**
- Arthur M. Young, Inventor and patent holder
- Bartram Kelley, Art Young’s assistant and future senior vice president, Bell Helicopter Textron, Inc
- Floyd Carlson, Bell test pilot and first to fly, untethered, the first Bell helicopter

**Dates of Significance:**
- 29 December 1942: Inventor Art Young makes the first tethered hops in the Model 30
- 26 June 1943: Bell Test Pilot Floyd Carlson makes the first untethered hover in the Model 30
- 10 May 1944: First indoor helicopter flight demonstration in the Western Hemisphere, Buffalo Armory
- 15 January 1945: Floyd Carlson ferries a doctor to the aid of a Bell test pilot who was injured as a result of an emergency bail out and snowbound in a farmhouse.
- 14 March 1945: Floyd Carlson rescues two fishermen from a crumbling ice flow in Lake Erie.
- 25 April 1945: First flight of the third Model 30, with improvements and features that presaged the production helicopter, the Model 47

**Design/Construction:** The Bell Model 30 was created by a small group of people, no more than 32 at one time, by scaling up Art Young’s successful model helicopter that he had successfully flown by remote control. The design of pilot’s flight controls was one feature that was not proven by the model and had to be created by the Bell team. The resulting helicopter flown only six months after the team began work at Gardenville (actually located in Cheektowaga, New York) and a follow-on production helicopter, the Model 47, was certified and in production less than four years from the establishment of the Gardenville facility.

**Information Potential:** Although “Gardenville” is well known at Bell Helicopter as the birthplace of the Bell helicopter and justly famous among a small group of aviation historians, over time the number of people who know where it was has dwindled to a handful. Like Camelot, it is in danger of becoming a legend of no certain physical location.

11. **Detail Summary of Site Significance**

In 1928, young Arthur M. Young decided to invent a helicopter. He progressed from research in libraries to the experimentation 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). His final model demonstrated precision of control by flying in and out of barn door and landing on a spot.

His successful demonstration was brought to the attention of Larry Bell, the founder of Bell Aircraft located in Buffalo, New York. Bell was very impressed by the demonstration and contracted with Young in 1941 to build two full-size helicopters based on the flying model and six times bigger. The Bell engineering department, however, was preoccupied with the development and production of airplanes and Young and his assistant Bartram Kelley, who had helped him with his model work as a boy, were not experienced enough with formal engineering design to guide them in any event.
The solution was the creation of an experimental shop in a former garage on Union Road in Cheektowaga, New York north of the hamlet of Gardenville, New York on 23 June 1942*. The interior 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. The back yard of the garage was used for the first tethered flights; a meadow behind the garage was the location for the first untethered flights.

At first the team consisted of only about 15 people, engineers and experienced shop workers. At no time, according to Bart Kelley, did the workforce exceed 32 people. In only six months, this small group created the first Model 30 and began tethered hover tests, flown by Art Young himself. Six months after that, on 26 June 1943, Bell test pilot Floyd Carlson took it on its maiden flight around the meadow behind the garage. By July, it was flying at over 70 miles per hour. In September, Carlson had begun to teach himself how to autorotate, gliding without power and make a power-off landing, flying from a nearby airport.

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 10 May 1944 and a flight demonstration at Buffalo’s Civil Stadium on 4 July 1944, where Floyd Carlson hovered the front wheel of a Model 30 into the palm of Art Young’s hand.

The Gardenville group then built a third helicopter, which first flew on 25 April 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 Bell 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.

* “Gardenville” predates the Lockheed “Skonworks” (later “Skunk Works”) that resulted in the P-80 Shooting Star by one year.

12. Maps of Site
2561 Union Road, Cheektowaga, New York
Union Garage, 1940 at Union Road and Losson Road

Present Day, Union Road and Losson Road
Floyd Carlson and Art Young demonstrating controllability

Rollout of the newly covered and painted Model 30
Flight Demonstration inside the Buffalo Armory

A Work in Progress, March 1944: Floyd Carlson at the controls with Art Young to his immediate right peering over his shoulder