NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

National Historic Landmark Nomination

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name: Wright Flyer III

other names/site number: Flyer III

2. Location

street & number: Carillon Park, 2001 South Patterson Blvd. ☐ not for publication

city, town: Dayton ☐ vicinity

state: Ohio code: OH county: Montgomery code: 113 zip code: 45407

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
☒ private	☐ building(s)		buildings
☐ public-local	☐ district		sites
☐ public-State	☐ site	1	structures
☐ public-Federal	☒ structure		objects
	☐ object	1	0 Total

Name of related multiple property listing: Wright Brothers-Associated Properties in the Dayton, Ohio, Area

Number of contributing resources previously listed in the National Register: 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☐ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of certifying official — Date

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☐ entered in the National Register.
☐ See continuation sheet.

☐ determined eligible for the National Register. ☐ See continuation sheet.

☐ determined not eligible for the National Register.

☐ removed from the National Register.

☐ other, (explain:) _____

Signature of the Keeper — Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
TRANSPORTATION: air-related	RECREATION AND CULTURE: museum

7. Description

Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
OTHER: Wright Flyer	foundation walls roof other cotton, muslin, wood, metal

Describe present and historic physical appearance.

This muslin-over-wood biplane, constructed in 1905, is one of three experimental flyers designed and built by the Wright brothers in their quest to develop a practical airplane. Weighing 710 pounds and standing 9 feet 5 1/8 inches tall and 28 feet long, the Flyer III carries a wing area of 503 square feet and a horizontal front rudder area of 83 square feet. It is powered by a twenty-horsepower modified automobile-type engine attached to twin pusher-type propellers.

The wings provided the central element of the entire airframe to which all other parts of the aircraft were linked. Composed of ash ribs attached to spruce spars and covered with high-grade untreated muslin, the wings functioned as a single unit, rigid enough to resist unwanted torsion or bending, yet resilient enough to provide the flexibility required for wing warping control. The biplane wings were linked together with cables to form a Pratt truss. The four-cylinder engine which had also been used for the 1904 Flyer II was mounted near the center of the lower wing. Both a one-gallon gasoline tank and the engine's radiator were clamped to one of the inboard wing struts. Power was provided to the propellers via a set of chains housed in protective guides. The right chain was crossed so that the propellers rotated in opposite directions, thereby avoiding the problem of torque. Two 8.5 foot pusher-type propellers extend from shafts behind the wings. The Wrights had designed these propellers to resist deformation by adding small angled surfaces to the trailing edges.

The pilot of the 1905 Flyer lay prone on the lower wing to the left of the engine with hips in a cradle harness which moved laterally connected to a system of wires that forced a helical twist in both wings. The double rudder, supported by rear spars connected to the wing unit, was operated by a lever located near the pilot's left hand. With his right hand, the pilot operated an upright lever

[X] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

☐ nationally ☐ statewide ☐ locally

Applicable National Register Criteria ☐A ☐B ☐C ☐D

National Historic Landmark Criteria: 1, 2, 4.

Criteria Considerations (Exceptions) ☐A ☐B ☐C ☐D ☐E ☐F ☐G

Areas of Significance (enter categories from instructions)

Transportation
Invention
Engineering

Period of Significance: 1905-1908

Significant Dates: 1905, 1908

Cultural Affiliation: n/a

Significant Person: Wright, Orville and Wilbur

Architect/Builder: Wright, Orville and Wilbur
Reconstruction: Wright, Orville

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

The Wright Flyer III is significant because it is the first airplane capable of sustained and controlled flight and suitable for practical application. The Wright brothers themselves, recognizing the significance of their 1905 machine, stated, "From the beginning the prime objective was to devise a machine of practical utility, rather than a useless and extravagant toy."[1] The flights at Kitty Hawk of the Flyer I on December 17, 1903, marked a step towards man's conquest of the air; the flights which occurred on that day in North Carolina were a step in the evolution of practical aeronautics. The flights of the 1905 Flyer III made the airplane a useful and practical invention for the world. It was with the Flyer III that the Wright brothers perfected the technique of flying and designed a powered airplane completely controllable by the pilot; able to bank, turn, circle and make figure eights; withstand repeated take-offs and landings; and remain airborne trouble free for more than half an hour.[2] The 1905 machine was also the first plane capable of performing the uses the Wrights envisioned for their invention: scouting in warfare, carrying mail to isolated places, exploring, and sport.[3] The Flyer III made the powered airplane a utilitarian invention and ushered

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[1]Wilbur Wright to August Post, 2 March 1906, in The Papers of Wilbur and Orville Wright: Including the Chanute-Wright Letters and Other Papers of Octave Chanute, 2 vols., ed. Marvin W. McFarland (New York: McGraw-Hill, 1953), 2:701.

[2]Charles H. Gibbs-Smith, "The World's First Practical Aeroplane," NCR World, Fourth Quarter, 1978, p. 18.

[3]Fred C. Kelly, The Wright Brothers: A Biography Authorized by Orville Wright (New York: Harcourt Brace, 1943, reprint ed., New York: Farrar, Straus and Young, 1950), p. 120.

☒ See continuation sheet

9. Major Bibliographical References

☒ See continuation sheet

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary location of additional data:

- ☐ State historic preservation office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☒ Other

Specify repository:

Carillon Historical Park, Dayton, Ohio

10. Geographical Data

Acreage of property less than one acre

UTM References

	Zone	Easting	Northing		Zone	Easting	Northing
A	16	739800	4401080	B			
C				D			

☐ See continuation sheet

Verbal Boundary Description

The boundary of the property is the physical structure of the plane, which is permanently stationed at Wright Hall, Carillon Historical Park, Dayton, Ohio.

☐ See continuation sheet

Boundary Justification

The significance property is the plane itself; its surroundings are not significant, and therefore not included in the nominated boundary.

☐ See continuation sheet

11. Form Prepared By

name/title Jill York O'Bright, Historian; David G. Richardson, Historian; and William S. Harlow, Historical Architect

organization National Park Service, Midwest Region date January 18, 1990

street & number 1709 Jackson Street telephone 402-221-3426

city or town Omaha state NE zip code 68102

that controlled the action of the twin elevators attached by forward spars 11.7 feet to the front end of the machine.

Today, the Wright Flyer III is on display in Wright Hall, a structure designed especially for the display of the plane, at Carillon Park, and is restored to its 1905 appearance. Prior to its restoration, the flyer was scattered in parts at Kitty Hawk, North Carolina, the Berkshire Museum in Pittsfield, Massachusetts, and in Orville Wright's Dayton, Ohio, laboratory. However, in 1947, under the patronage of Col. Edward Deeds and the supervision of Orville, the Flyer III was restored using the assembled original parts coupled with necessary replacement parts. Documentary and oral sources indicate the restored Flyer III retains about two-thirds of its original (i.e, 1905) fabric. The replacement fabric was obtained or fabricated by Orville Wright, and the Flyer was reassembled under his direct supervision.

in the age of the air. Therefore, the 1905 Wright Flyer III is nationally significant for the notable contribution it has made to America's history in the areas of transportation, invention, and engineering. The Flyer III is the work of a pair of masters and is intimately associated with the lives of the fathers of flight.

History

Prior to 1905, the Wrights had already experimented with a series of man-carrying gliders and powered airplanes in hopes of perfecting a practical flying machine. Each experiment brought the brothers closer to their goal. The flights at Kitty Hawk marked the biggest breakthrough in the development of a practical flying machine. The Flyer I of Kitty Hawk represented the world's first powered, sustained, and controlled flights, but the best flight lasted only 59 seconds and covered a distance of 852 feet.

Work with a 1904 Flyer yielded further improvements towards developing a machine of practical application, but the Flyer II of 1904, like the Flyer I of Kitty Hawk, experienced many accidents, and safe landings were rare.[4] The machine was not completely controllable, and long sustained flights were an exception (The longest flight time of the year was only five minutes, four seconds). Although the brothers were gaining experience and skill in flying, their machine remained unpractical.

Hence, the brothers pushed onward to make their plane a safe and useful discovery. As the Wrights wrote:

> The object of the 1905 experiments was to determine the cause and discover remedies for several obscure and somewhat rare difficulties which had been encountered in some of the 1904 flights, and which it was necessary to overcome before it would be safe to employ flyers for practical purposes. The experiments were made in a swampy meadow about eight miles east of Dayton, Ohio, and continued from June till the early days of October, when the impossibility of

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[4]Tom D. Crouch, "The 1905 Wright Flyer: A Machine of Practicality," Timeline, August-September 1985, p. 28.

longer maintaining privacy necessitated their discontinuance.[5]

On May 23, 1905, the Wrights began to construct the Flyer III, and by June 23, Orville had made the first flight with the 1905 machine.[6] However, during the first month of testing, the Flyer III showed no improvement in performance over the 1904 aircraft. The longest flight of the period was only 19.5 seconds and damages and accidents were daily occurrences.[7]

It was not until after the Flyer underwent some rebuilding and redesigning with the enlargement and repositioning of its elevator and rudder, the unlinking of the warp and rudder controls, and the addition of "Little Jokers" to the propeller tips, that the Flyer III emerged as the world's first practical airplane.[8] The changes greatly improved the pilot's control of the machine and enabled new flight records to be set. On October 5, 1905, Wilbur Wright made a flight of 24 and one-fifth miles, lasting over 39 minutes. By the year's end, the Flyer III had made a total of 50 flights with a total flying time of about 3 hours, 40 minutes.

The Wright brothers recognized the significance of their 1905 flights when compared to their flights of 1903 and 1904:

> In the past three years a total of one hundred and sixty flights have been made with our motor-driven flyers, and a total distance of almost exactly one hundred and sixty miles covered, an average of a mile to each flight, but until the machine had received its final improvements the flights were mostly short, as

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[5]Wright Brothers to Augustus Post, 2 March 1906, in Papers of Wright, ed. McFarland, 2:700.

[6]Arthur G. Renstrom, Wilbur and Orville Wright: A Chronology Commemorating the Hundredth Anniversary of the Birth of Orville Wright August 19, 1871 (Washington, D.C.: Library of Congress, 1975), p. 16.

[7]Crouch, "1905 Wright Flyer," p. 32.

[8]Renstrom, Chronology, p. 148.

is evidenced by the fact that the flight of October 5th was longer than the one hundred and five flights of the year 1904 together.[9]

The 1905 Flyer III was the culmination of nine years of experimenting and investigating into the possibility of human flight. After many trials and errors, improvements and changes, the Wright brothers had mastered the air with their Flyer III. As Wilbur wrote, "We are ready to begin considering what we will do with our baby now that we have it."[10]

For the next two and one-half years, the Wright brothers pursued the question of what to do with their now practical invention. In the meantime however, until the patent for the invention of the flying machine was secured, and a contract for the purchase of the Wright's knowledge and invention could be completed, the brothers would not fly, and the Flyer III was placed in storage.

In 1908, agreements were finally reached with both the United States Signal Corps and a French syndicate for the purchase of their invention upon the successful completion of several flight demonstrations. By May 6, 1908, the Wrights were back in the air with the Wright Flyer III. The plane was refitted with upright seating and a new control system and was shipped to Kitty Hawk where the brothers planned to conduct a series of practice flights before the contract demonstrations scheduled for later that year. From May 6 to May 14, the Wright brothers flew a total of 22 times with the 1905 machine.[11] On the last day of the flights, the Flyer III again made history, becoming the world's first airplane to

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[9]Wright Brothers to Augustus Post, 2 March 1906, in Papers of Wright, ed. McFarland, 2:701.

[10]Roger E. Bilstein, "The Airplane, the Wrights, and the American Public: Popular Attitudes Toward Aviation, 1900-1925," in The Wright Brothers: Heirs of Prometheus, ed. Richard P. Hallion (Washington, D.C.: Smithsonian Institution Press, 1978), p 42.

[11]Renstrom, Chronology, p. 27.

carry both a pilot and passenger.[12] Shortly after the completion of the 1908 practice flights, the Flyer III was dismantled.

However, 1908 did not mark the end of the Flyer III. In 1946, Col. E. A. Deeds, Chairman of National Cash Register and personal friend of Orville Wright, planned to build a historical park in Dayton devoted to the history of transportation. As the centerpiece for the exhibit, Colonel Deeds proposed the display of a Wright Flyer to represent the crowning achievement in the field of transportation. Colonel Deeds approached Orville about the exhibit and asked his assistance in choosing a Flyer for the park.

Originally Orville recommended the replication of the 1903 Flyer I. After further consideration, however, he urged Colonel Deeds to attempt to obtain the parts of the 1905 machine and to undertake its restoration.[13] Both Colonel Deeds and Orville became enthralled with the project and spent a great deal of time and energy to ensure the restoration's accuracy. As Colonel Deeds noted:

> Mr. Wright took an active part in the work that was done up to the time of his last illness and gave us all the technical information and measurements necessary to rebuild the plane.[14]

The first major step in the restoration was the securing of the original parts of the aircraft. A thorough search for parts was undertaken, and with the cooperation of Kitty Hawk residents and the Berkshire Museum in Pittsfield, Massachusetts, Orville assembled approximately sixty to eighty-five percent of the original 1905 parts.[15]

Under Orville's supervision and using drawings and sketches Orville

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[12]Ibid., p. 28.

[13]Crouch, "1905 Wright Flyer," p. 34.

[14]Dayton Herald, 25 February 1948.

[15]Carillon Park, The Wright Brothers (Dayton, Ohio: Carillon Park, n.d.), p. 17, and Dayton Journal, 25 February 1948.

prepared, Harvey Geyer, a former Wright Company employee, undertook the job of restoration. The plane was completed in 1950 and unveiled to the public in Wright Hall at Carillon Park in June.

The importance of the Wright Flyer III cannot be overemphasized. The 1905 machine was the last of three experimental planes built by the Wright brothers in their quest to create a practical flying machine. Each of the three experimental Wright Flyers was uniquely influential in the development of aviation. The 1903 Flyer I was the world's first successful aircraft and the 1904 Flyer II represented an accomplished transitional plane between the Flyers I and III. However, it was the Flyer III which was the first completely practical and controllable airplane. According to the prominent aviation historian Charles Gibbs-Smith, "With the Flyer III of 1905 the Wrights had now for all practical purposes conquered the air."[16]

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[16]Charles H. Gibbs-Smith, Aviation: An Historical Survey from its Origins to the End of World War II (London: Her Majesty's Stationery Office, 1970), p. 103.

Major Bibliographical References

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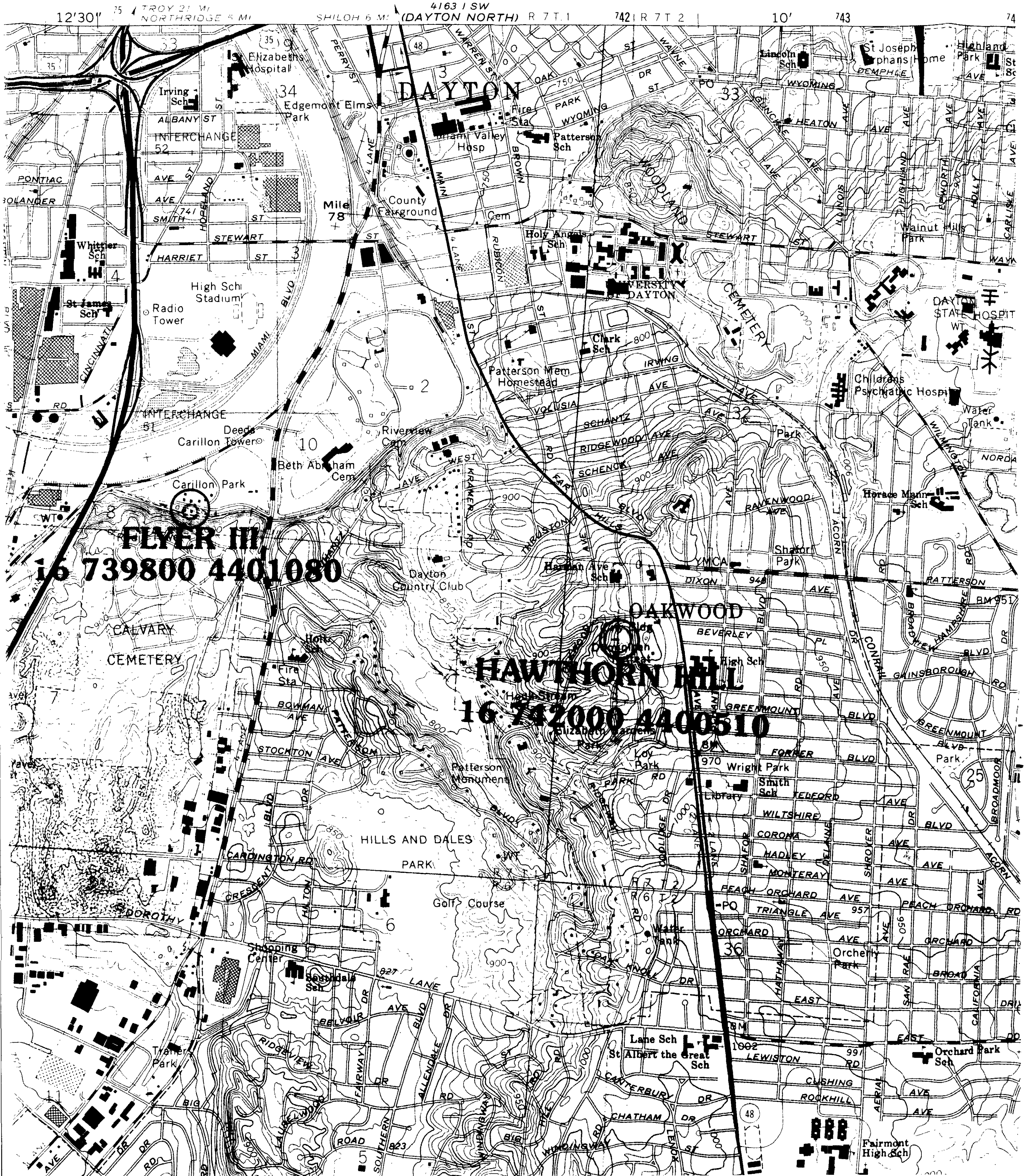
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DAYTON
Miami Valley Hosp
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Edgemont Elms Park
INTERCHANGE 52
County Fairground
UNIVERSITY OF DAYTON
WOODLAND CEMETERY
DAYTON STATE HOSPITAL
Childrens Psychiatric Hospital
High Sch Stadium
Radio Tower
INTERCHANGE 51
Deeds Carillon Tower
Carillon Park
Beth Abraham Cem
Riverview Cem
Patterson Mem Homestead
FLYER III
16 739800 4401080
Dayton Country Club
CALVARY CEMETERY
OAKWOOD
HAWTHORN HILL
16 742000 4400510
Patterson Monument
HILLS AND DALES PARK
Golf Course
Shopping Center
Southdale Sch
Wright Park
Library
Horace Mann Sch
Shafor Park
Orcherly Park
Lane Sch
St Albert the Great Sch
Orchard Park Sch
Fairmont High Sch
Lincoln Sch
St Joseph Orphans Home
Walnut Hills Park
Whittier Sch
St James Sch
Irving Sch
Holy Angels Sch
Clark Sch
Harman Ave Sch
Smith Sch
Trailer Park