

ENVIRONMENTAL AWARDS

88th Air Base Wing, Civil Engineer Directorate, Environmental Branch, Wright-Patterson AFB / Cultural Resources Management - Installation

INTRODUCTION

Wright-Patterson Air Force Base: *the birthplace, home, and future of aerospace.*

Wright-Patterson Air Force Base (AFB) is located in southwestern Ohio, east of the city of Dayton, and covers 8,145 acres, making it one of the largest and most organizationally complex bases in the United States Air Force (USAF). Wright-Patterson is steeped in tradition and has been a leader in military aviation since the Wright brothers completed their historic flights in 1905 at Huffman Prairie Flying Field. Wright-Patterson AFB has a number of missions critical to national defense, including development and acquisition of all existing and future aircraft weapon systems for the Air Force managed by Aeronautical Systems Center (ASC).

Headquarters Air Force Materiel Command (HQ AFMC), the National Museum of the USAF, Air Force Research Laboratory (AFRL), Air Force Institute of Technology (AFIT), Wright-Patterson Medical Center, and the National Air and Space Intelligence Center (NASIC) are located at Wright-Patterson. Wright-Patterson retains 256 buildings that have been the site of the nation's most historic aviation events. Buildings range from nineteenth century farmhouses, now used as commander's residences, to World War II airplane testing complexes, to facilities built specifically to develop new technologies at the height of the Cold War.

Wright-Patterson is home of Huffman Prairie Flying Field, site of the Wright brothers' 1904-1905 development of the world's first practical airplane, and a National Historic Landmark (NHL). In addition, there are two prehistoric burial mound sites listed on the National Register of Historic Places (National Register). The 88th Air Base Wing provides operating support for the base and implements base preservation efforts through the Civil Engineer Directorate's Environmental Branch. The Environmental Branch is dedicated to preserving and protecting this rich heritage and the installation's cultural resources. The installation cultural resource team (CRT) focuses on daily implementation of the Integrated Cultural Resources Management Plan (ICRMP), aiming to maximize mission capability while ensuring the sustained protection of the cultural assets of the base.

FY 2010 ACCOMPLISHMENTS

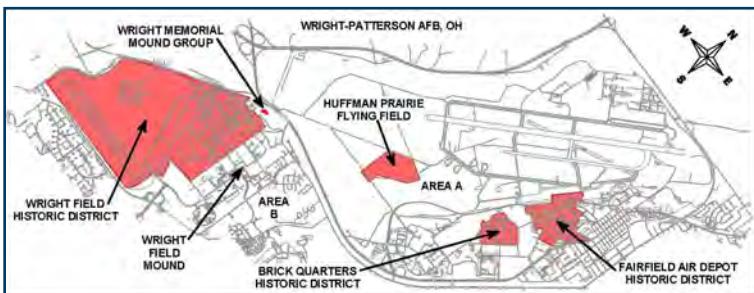
- Meticulously completed Section 106 coordination processes with the State Historic Preservation Office, satisfying all requirements for Secretary of Interior's Standards for Treatment of Historic Properties
- In consultation with State Historic Preservation Office and the National Park Service, creatively mitigated adverse effects from the construction and operation of a mission essential Explosive Ordnance Disposal Proficiency Training Range, adjacent to Huffman Prairie Flying Field National Historic Landmark
- Surveyed all 8,145 acres for archaeological resources identifying three additional significant archaeological sites
- Merit award winner for "outstanding contribution to historic preservation in Ohio." from the Ohio State Historic Preservation Office for the adaptive reuse of Facility 20012 for a new BRAC mission, while retaining and restoring essential historic features
- Working on an MOA to preserve the 120 foot historic wind tunnel through effective consultation with the State Historic Preservation Office and American Society of Mechanical Engineers
- Submitted National Register nominations for the Brick Quarters (BQ) Historic District, Wright Memorial and coordinated with NPS for NHL nomination of the Wright Field (WF) Historic District
- Cherokee Storyteller Lloyd Arneach presented Native American stories and folklore on base, promoting awareness of Native American culture to base personnel during Native American Heritage Month
- Wright-Patterson, in collaboration with a private historical architect, produced a new historic preservation guide book for civil engineers defining and protecting historical significance of building features, districts, view sheds, and cultural landscapes. The guide book thoroughly defines the character-defining features so that our architects and design engineers maintain the cultural heritage of Wright-Patterson



Huffman Prairie Flying Field, a National Historic Landmark, at sunrise. This is the field where aviation began and the first practical airplane was perfected by the Wright brothers, which took flight on October 5th 1905. This photo shows the replica catapult and flyer that are typically on display at the flying field during summer visitation hours at the Dayton Heritage National Historical Park.

BACKGROUND

The ICRMP for Wright-Patterson provides the CRT with pertinent background information about the historic database while outlining procedures for dealing with the resources so that the requirements of applicable historic preservation statutes are fully met and any conflicts with the military mission are avoided. These cultural resource assets include significant historic buildings and districts on Wright-Patterson including three nineteenth-century buildings that are still in use today and three historic districts: Fairfield Air Depot, Wright Field, and the Brick Quarters. The nineteenth-century buildings are used as offices and the residence of the Aeronautical Systems Command Commander, and are all eligible for the National Register. The three historic districts are in the process of being nominated for listing. These districts include 256 contributing historic buildings and structures.



Exterior view of Building 12's main entrance. This building is the most elaborate example of art deco design at Wright-Patterson AFB. The building was rehabilitated for BRAC realignment and became a prime example of adaptive reuse of historic structures. It won the Merit Award from the Ohio State Historic Preservation Office in 2010.

Huffman Prairie Flying Field is the most significant historic landscape resource located on Wright-Patterson. The flying field is the only historic landscape on base that is listed in the National Register as a NHL. Significant prehistoric archaeological resources include the Wright Brothers Memorial Mound Group and the Wright-Patterson Mound, both of which are listed in the National Register.

PROGRAM SUMMARY

Cultural resources program management at Wright-Patterson is accomplished by the CRT in the Environmental Branch of the Civil Engineer Directorate, a part of the 88 ABW. One CRM architect working in conjunction with the Environmental Quality Section Chief and Environmental Branch Chief ensures that the irreplaceable cultural assets of Wright-Patterson are protected and preserved while supporting mission execution.

ACCOMPLISHMENTS

Overall Cultural Resources Management

The CRT coordinated work with a historic preservation contractor to produce a new guidebook for use by base civil engineers delineating historic significance of building features, districts, view sheds, and cultural landscapes. All historic assets on base have been recently evaluated and assessed with the analysis and recommendations for treatment bound together into a reference manual as a companion to the new design guidebook. In order to further coordinate cultural resource management with mission needs, meetings are held with designers early in project planning and coordination is followed through to project completion, including preconstruction meetings and construction phase monitoring.

The cultural resources team also created a newly updated historic facility list, which includes photographs and other information, for use by cultural resources management and facility planners. The new list also greatly simplifies future data call reporting through broader tracking of assets. This allows cross-feed between Wright-Patterson's site list and the Real Property Inventory, and satisfies the need to track cultural resources regardless of function and occupancy.

Historic Buildings and Structures

Adaptive reuse of Building 12 was started in October 2008 and completed in July 2010. Building 12, built in 1935, is the most architecturally elaborate example of Wright-Patterson's 1930's Art Deco architecture. The building is eligible for listing on the National Register as a contributing element of the Wright Field Historic District. The 13 million-dollar project consisted of the complete renovation of Building 12 to historically accurate appearance both inside and out, while addressing Antiterrorism/Force Protection (AT/FP) requirements.



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Additionally, Building 12 achieved a US Green Building Council Leadership in Energy and Environmental Design (LEED) silver rating. Wright-Patterson partnered with the US Army Corps of Engineers (USACE) balancing historical and AT/FP requirements. This included replacing windows and upgrading the foundation system. The Ohio State Historic Preservation Office commended Wright-Patterson with the Award of Merit for its "outstanding contribution to historic preservation in Ohio" for the Building 12 rehabilitation. During the project, 369,291 pounds of material, including 51,850 square feet of ceiling tiles, were recycled.

Another major achievement involved an extremely complex Section 106 coordination effort for Building 19, one of Wright-Patterson's oldest artifacts. A new AFRL mission required a state of the art laboratory in Building 19. The cultural resources staff coordinated with the SHPO, Historic American Engineering Record, and American Society of Mechanical Engineers in order

to identify, protect, and preserve historically significant components of a historic 1928 five-foot wind tunnel, including support equipment and historical documents. This building is not only eligible for National Register listing, but the wind tunnel alone is considered eligible for listing on the National Register. A successful MOA has been created and cultural resources staff have assisted project managers in directing specification and drawing preparation for delineating preservation efforts for wind tunnel components to be preserved, means of disassembly, cataloging, and the disposition of parts. The cultural resource team continues efforts to find an appropriate new home for the wind tunnel.

The base has a number of ongoing projects for maintaining cultural sites utilizing the Boy Scouts in service projects to enhance these sites. In 2009, the Boy Scouts assisted the base in construction and installation of picnic tables and park benches made of recycled materials at Wright Memorial, which has been nominated for listing on the National Register.

Archeological Resources

Wright-Patterson AFB has 102 archaeological sites, three of which are eligible for, and two are listed on the National Register. The entire installation has been surveyed for archaeological resources. The National Park Service and the cultural resource team partner to protect cultural resources from vandalism.

Native American Program

The base currently consults with four tribes on construction projects. Ongoing efforts at Wright-Patterson promote cultural awareness to the base populace. Recently, Cherokee Storyteller Lloyd Arneach presented Native American stories and folklore on base, promoting awareness of Native American culture to base personnel during Native American Heritage month.

Curation

Currently, the majority of artifacts and records are curated at the Ohio Historical Society through a cooperative agreement with a smaller collection temporarily stored at Wright-Patterson.

Cultural Resources Awareness and Education

Wright-Patterson has a very active program to promote awareness of its precious cultural resources. Wright-Patterson has developed numerous publications and interpretive materials to educate base personnel and

the public. Materials include historical books, museum exhibits, interpretive displays, historical markers, and a myriad of pamphlets on topics ranging from early aviation history and research to the latest in aviation.



Dayton Aviation Heritage National Historical Park superintendent Dean Alexander instructs local youth in the operation of a Wright Flyer simulator at the Great Wright Brothers Aero Carnival. This event hosted by the National Park Service at the Huffman Prairie Flying Field on aviation day was done in cooperation with the base and contributes to the cultural outreach and education for the Dayton area.

During Earth Day 2010, the cultural resource team presented the Cultural Resources Program to more than 300 base personnel. Cultural resource managers promoted Wright-Patterson and Dayton area cultural resources to new base employees at each newcomers briefing. They also guest lectured at AFIT and led student field trips to base historic sites. The cultural resources team partnered with the base public affairs office for the base 17 December First Flight annual ceremony at the Wright Memorial, commemorating the Wright brothers' first flight at Kitty Hawk, North Carolina. Community leaders included congressional representatives, mayors, Air Force general officers and industry aviation leaders.

Community Relations

2010 was the 100th anniversary of the founding of the Wright Brother's Aviation School at Huffman Prairie Flying Field. Wright Patterson commemorated this

anniversary during Aviation Day. The cultural resources team partnered with the National Park Service to hold the Great Wright Brothers Huffman Prairie Aero Carnival Event during Wright-Patterson Aviation Day to commemorate the founding of the school. The cultural resources team provides a liaison to the National Aviation Heritage Alliance, a local non-profit that promotes the aviation heritage resources in the area.

Environmental Enhancement

Close coordination of the natural resources staff and the state of Ohio effectively preserved one of the few remaining natural prairies in the state; a controlled burn of the prairie revitalized the cultural viewscape of Huffman Prairie Flying Field. Ash trees are an important component of the cultural landscape at Wright-Patterson; the spread of the emerald ash borer threatens this resource. Cultural and natural resource staffs work aggressively to support mitigating this threat.

Mission Enhancement

The cultural resource team presented training classes for base civil engineers and architects on Section 106 basics and on the purpose of historic preservation principles, emphasizing and explaining requirements of Secretary of Interior's Standards for Rehabilitation. Staff review work order requests with the planning office to make sure that any work proposed for historic buildings is presented to the Cultural Resources Manager for review to determine the potential effects on historic facilities. This proactively works to reduce negative impacts. Staff attend design meetings on all construction and remodeling projects in order to preserve the historic and cultural heritage.

The legacy, pride, and heritage of aviation pioneers are evident throughout the base. The pioneering culture fosters the development of future military leaders and weapon systems. Full spectrum pioneering will continue to evolve at Wright-Patterson. The cultural resources program nurtures the mission capabilities of the following organizations:

- [Air Force Institute of Technology](#) - shaping the minds of future leaders
- [Air Force Museum](#) - preserving the heritage of aviation pioneers
- [Air Force Research Laboratory](#) - providing cutting edge weapon designs

- National Air and Space Intelligence Center – designing satellites and surveillance platforms
- Wright-Patterson Medical Center – protecting and preserving the health and mission assurance of the warfighter and researcher
- 711 Human Performance Wing – the evolution of the human as a weapon system
- Aeronautical System Center – Commanding the program offices for all legacy and future aircraft weapon systems
- Air Force Reserve 445 Airlift Wing – Utilizing the C-5 aircraft to meet the logistical needs of the warfighter

The cultural resource team partners with the National Park Service to maintain the Wright Memorial, Huffman Prairie Flying Field, and the Huffman Prairie Flying Field Interpretive Center. The cultural resources team and the National Park Service continually coordinates with the adjacent Wright-Patterson Rod and Gun Club, resolving conflicting schedules and events, while promoting the viability of the club and ensuring public access to this historic site.

Cultural Resources Compliance

As stated in the previous sections of this package, examples of cultural resource compliance are:

- Completed Section 106 review of the Housing Privatization of the Brick Quarters Historic District, in consultation with the State Historic Preservation Office
- Nominated the Brick Quarters Historic District to the National Register
- Testing of three archaeological sites for national register eligibility and curation of recovered artifacts
- Adaptive reuse of Building 12
- Beyond compliance, Building 19 continues to be a challenge to preserve

Another major achievement involved an extremely complex Section 106 coordination effort for the Building 19 wind tunnel, one of Wright-Patterson's oldest artifacts. A new AFRL mission required a state of the art laboratory

in Building 19. The cultural resources staff coordinated with the SHPO, Historic American Engineering Record, and American Society of Mechanical Engineers in order to identify, protect, and preserve historically significant components of a historic 1928 five-foot wind tunnel, including support equipment and historical documents. This building is not only eligible for National Register listing, but the wind tunnel alone is considered eligible for listing on the National Register. A successful MOA has been created and cultural resources staff have assisted project managers in directing specification and drawing preparation for delineating preservation efforts for wind tunnel components to be preserved, means of disassembly, cataloging, and the disposition of parts. The cultural resource team continues efforts to find an appropriate new home for the wind tunnel.



View of the Historic Five-Foot Wind Tunnel housed in Building 19 since it was moved to Wright Field in 1928. Through an MOA with the Ohio Historic Preservation Office, the National Park Service, Historic American Engineering Record, and the National Aviation Heritage Alliance, it will be disassembled in its entirety and stored until a new home can be found for its display.

CONCLUSION

The legacy of Wright-Patterson's cultural resources is fundamental to the spirit of aerospace innovation. The ICRMP directly supports protecting this heritage. Positive partnerships with community stakeholders, tribes, National Park Service and the state effectively support the past, present and future of aerospace technology. The Ohio State Historic Preservation Office recognized the cultural resources program with the Award of Merit for "Outstanding Contributions to Historic Preservation." These numerous accomplishments garnered the Air Force's General Thomas D. White Award for Outstanding Cultural Resources Management Program.