

United States Department of the Interior  
National Park Service

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National Register of Historic Places  
Registration Form

NATIONAL  
REGISTER

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in *How to Complete the National Register of Historic Places Registration Form* (National Register Bulletin 15A). Complete each item by marking "x" in the appropriate box or by entering the information requested. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional entries and narrative items on continuation sheets (NPS Form 10-900a). Use a typewriter, word processor, or computer, to complete all items.

1. Name of Property

historic name B-17G "Flying Fortress" No. 44-83690

other names/site number B-17G-90-DL-44-83690

2. Location

street & number Heritage Museum Foundation, off of U.S. 31 na  not for publication

city or town Grissom Air Force Base na  vicinity

state Indiana code IN county Miami code 103 zip code 46971

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, 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. I recommend that this property be considered significant  nationally  statewide  locally. ( See continuation sheet for additional comments.)

*[Signature]* DAS(ES04) 5/12/93  
Signature of certifying official/Title Date

DEPT of AIR FORCE  
State of Federal agency and bureau

In my opinion, the property  meets  does not meet the National Register criteria. ( See continuation sheet for additional comments.)

*[Signature]* 10-20-92  
Signature of certifying official/Title Date

Indiana Department of Natural Resources  
State or Federal agency and bureau

4. National Park Service Certification

I hereby certify that the 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]* 6/29/93  
Signature of the Keeper Date of Action

**5. Classification**

**Ownership of Property**  
(Check as many boxes as apply)

- private
- public-local
- public-State
- public-Federal

**Category of Property**  
(Check only one box)

- building(s)
- district
- site
- structure
- object

**Number of Resources within Property**  
(Do not include previously listed resources in the count.)

Contributing	Noncontributing	
0	0	buildings
0	0	sites
1	0	structures
0	0	objects
1	0	Total

**Name of related multiple property listing**  
(Enter "N/A" if property is not part of a multiple property listing.)

na

**Number of contributing resources previously listed in the National Register**

0

**6. Function or Use**

**Historic Functions**  
(Enter categories from instructions)

DEFENSE: air facility

**Current Functions**  
(Enter categories from instructions)

RECREATION AND CULTURE: museum

**7. Description**

**Architectural Classification**  
(Enter categories from instructions)

OTHER: heavy bomber

**Materials**  
(Enter categories from instructions)

foundation na

walls na

na

roof na

other METAL: aluminum

OTHER: plexiglas

**Narrative Description**

(Describe the historic and current condition of the property on one or more continuation sheets.)

Name of Property

County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
B Property is associated with the lives of persons significant in our past.
C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
D Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A owned by a religious institution or used for religious purposes.
B removed from its original location.
C a birthplace or grave.
D a cemetery.
E a reconstructed building, object, or structure.
F a commemorative property.
G less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

(Enter categories from instructions)

MILITARY
ENGINEERING

Period of Significance

1945
1951
1956-1959

Significant Dates

1945
1951

Significant Person

(Complete if Criterion B is marked above)

na

Cultural Affiliation

na

Architect/Builder

Douglas Aircraft Company

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographical References

Bibliography

(Cite the books, articles, and other sources used in preparing this form on one or more continuation sheets.)

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

Name of repository:

National Register Files

B-17G No. 44-83690

Name of Property

Miami Co., IN

County and State

10. Geographical Data

Acreeage of Property Less than one acre

UTM References

(Place additional UTM references on a continuation sheet.)

UTM grid boxes for Zone, Easting, and Northing with values 16, 573580, 4502100.

UTM grid boxes for Zone, Easting, and Northing.

See continuation sheet

Verbal Boundary Description

(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification

(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Paul C. Diebold

organization Div. of Historic Preservation and Archaeology date May 15, 1992

street & number 402 W. Washington St., Room 274 telephone 317-232-1646

city or town Indianapolis state IN zip code 46204

Additional Documentation

Submit the following items with the completed form:

Continuation Sheets

Maps

A USGS map (7.5 or 15 minute series) indicating the property's location.

A Sketch map for historic districts and properties having large acreage or numerous resources.

Photographs

Representative black and white photographs of the property.

Additional items

(Check with the SHPO or FPO for any additional items)

Property Owner

(Complete this item at the request of SHPO or FPO.)

name United States Air Force

street & number telephone

city or town state zip code

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C. 470 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18.1 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Chief, Administrative Services Division, National Park Service, P.O. Box 37127, Washington, DC 20013-7127; and the Office of Management and Budget, Paperwork Reductions Projects (1024-0018), Washington, DC 20503.

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B-17G-90-DL-44-83690 is a representative "Flying Fortress" heavy bomber manufactured by the Douglas Aircraft Company in Long Beach, California and delivered for use on May 9, 1945. Douglas was one of two companies other than Boeing designated to manufacture B-17s during World War II. General features of the B-17 include its mid-wing monoplane design, aluminum-clad exterior, four radial engines, massive wing structure, and heavy armament.

**Crew:**

10, including pilot, co-pilot, bombardier, radio operator, navigator, dorsal turret gunner, two waist gunners, ball turret gunner, and tail gunner. The crew assigned to 44-83690 is unknown.

**Power Plant:**

Typical for B-17Gs are the four 1,380 horsepower Wright GR1820-97 Cyclone air-cooled, nine cylinder radial engines equipped with exhaust driven turbochargers. Most later model Gs such as 44-83690 had General Electric B-22 turbochargers. The radial engines of 44-83690 are still intact, but would likely require a complete overhaul to become functional. The engine nacelles, cowlings, and three-blade propellers are intact. Engines were numbered for reference starting with the outer starboard unit from 1-4.

**Wings:**

The wingspan is 103 ft. 9 in. The massive parabolic-arch-like shape of the wings encompass 1,420 sq. ft. and are characteristic of B-17s. All B-17s are of mid-wing design. The starboard wing aileron has been removed for restoration.

**Fuselage:**

B-17Gs are typically 74 ft. 4 in. in length. General features include the raised cockpit section and plexiglas nose cone (The nose cone is a replacement). Apertures are numerous, including small square windows along the port and starboard sides of the nose area and a navigator's blister located dorsal between the cockpit and plexiglas nose cone. The cockpit has two forward

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B-17G "Flying Fortress" No. 44-83690  
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angled windows, two side windows, and two dorsal windows. The waist gunner windows are staggered, the port side window being just aft of its starboard counterpart (staggered waist gunner ports are characteristic of B-17Gs). There is a hatch aft of the starboard waist gunner's port.

#### Tail Assembly:

Characteristic of all B-17s, starting with the E series, is the massive dorsal fin which gracefully sweeps to merge with the fuselage. It is 19 ft. 2 in. in height. The stabilizers are of standard T assembly. The rudder and elevators have been removed for restoration. Small windows mark the position of the tail gunner.

#### Landing Gear:

All B-17s have tail-wheel landing gear which are retractable. In the "up" position, the large forward gear nestle into the number 2 and 3 engine nacelles which are enlarged for this purpose. The tires and hub are partly exposed when "up". On 44-83690, jacks fixed to the hub axles support the tires just off the ground to lessen fatigue on the tires.

#### Weight and Payload:

Empty weight is 32,720 lb. Fully armed and loaded, B-17s weigh 65,600 lb. Payloads of 4,000-5,000 lb. were typical but up to 17,600 lb. could be carried for less than maximum range.

#### Performance:

The maximum speed was 300 m.p.h. at 30,000 ft. Cruising speed was about 200 m.p.h. Service ceiling was 36,600 ft. B-17s could climb to 10,000 ft. in 7.1 minutes. With a 4,000 lb. payload, their range was 2,000 miles.

#### Armament:

Originally, defense was provided by 13 Browning 50 cal. machine guns. A forward-firing twin-gunned chin turret was housed under the nose. Adding to forward firepower were staggered "cheek" ports on the nose. A twin gunned power dorsal turret was located aft of the cockpit. A power operated Sperry ball turret with

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twin guns is ventrally located. The Sperry turret could track 360 degrees on a horizontal plane and 90 degrees on a vertical axis. The gunner (typically an individual of small stature) was housed within the turret itself and controlled its operation by pedal switches. Waist gunner ports were glazed originally, but the current plexiglas windows appear to be replacements. Waist windows were staggered to avoid gunner interference inside the narrow fuselage. The tail gunner operated a twin, powered turret. Lastly, a single Browning could be fitted to fire upward from a dorsal window aft of the top turret.

Attacks on enemy fighters were co-ordinated by superimposing an imaginary clock over the aircraft with 12:00 being dead ahead and 6:00 being directly astern. Thus, "3 o'clock high" meant an attack from above the starboard wing. Using ship to ship and intership communications, all appropriate guns could be brought to bear.

All armament has been stripped from 44-83690. Metal dummies give the appearance of an armed aircraft. With conversion to DB-17 status, all turrets and armament were stripped from the plane, and locations of turrets were skinned shut. The cheek gun fairings were removed and windows were installed in the same location. The tail turret was left in place. In about 1986, an actual Sperry ball turret was reinstalled, a fiberglass chin turret was fitted, and fiberglass replica cheek fairings, complete with simulated rivets, were added. A better copy of a dorsal turret was installed (the previous installation was about 1/3 scale of an original).

### Interior:

B-17s were unpressurized and the interior ribs were exposed. Internal bulkheads for the radio/navigation, upper deck cockpit cabin, and bomb bay areas are in place. Internal compartments are shown on the included copy. Electronic gear and instrumentation have been stripped from the ship. The cockpit cabin no longer has its control wheels and seats. The instrument panel has been stripped, but the panel bulkhead remains in place. At some point, a thin layer of greenish paint was applied to portions of the interior.

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**Markings:**

B-17G No. 44-83690 lacks the olive drab dorsal/light grey ventral camouflage of earlier models. After early 1944, Army Air Force specifications did not call for camouflage, so most B-17Gs have raw aluminum.

44-83690 currently bears markings of the 305th Bombardment Group (Grissom Air Force Base is the home of the 305th Group) which flew B-17G's in the European Theatre.

The nose art of 44-83690 is not original. Each side has different nose art, an unknown practice. The port side nose art is taken from "Miss Liberty Belle" (B-17G-10-BO-42-31255), which was an actual B-17G with the 305th Group during World War II (the actual plane crashed on a training mission during the war). This was felt to be appropriate since Virgil Grissom, for whom the base was renamed in 1968, piloted the "Liberty Bell 7" (a Mercury capsule) on his historic 1962 space mission.

Port side nose art depicts a nude female figure astride a winged Liberty Bell and in cursive writing "Miss Liberty Belle."  
Stenciled near this is the original data block which reads:

US Army model B-17G 90DL  
Air forces serial No. 44-83690  
Crew weight 1200 lb.

On the starboard nose area, in freehand red block lettering, is written "FLAK MAGNET." 28 bomb marks (28 missions) and 6 swastikas (6 German fighters killed) are stenciled.

The fuselage aft of the main wing has large block letters spelling XK. This is a squadron identifier. The "star and bar" insignia is also found on the fuselage ("bars" were added to the Air Corps circle and star device after July 1943). On the fin is a green field and blue triangle with a G in the middle. This, and the O are 350th Group markings. Wings are marked with the star and bar insignia.



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Modifications and Preservation:

44-83690 was modified to DB-17 status in July 1950. Alterations to this status generally included removal of all armament, turrets, and the installation of drone control equipment. Control equipment consisted of radios and a roughly shoebox-sized, lap-held control panel with a small joystick to guide the "baby" ship. A domed antenna was installed in the ball turret location. In 1955, the cheek fairings were removed to allow greater visibility.

44-83690 was flown to Grissom AFB in 1961 for display. Through the years, various groups were allowed to remove interior equipment. The group restoring "Shoo Shoo Shoo Baby" (B-17G-35-BO-42-32076), then at Dover AFB, was allowed to remove some equipment. Well intended yet misguided restoration efforts saw the plane bearing inaccurate turrets and markings. In 1983, volunteers of the Grissom AFB Heritage Museum Foundation began a long-term restoration of 44-83690. The exterior was stripped of paint and corrosion. The exterior was patched, primed, and painted with aluminized paint. Markings from the 305th Bombardment Group were selected as described above. Simulated armament, an actual ball turret, and other fittings were installed as described previously. The volunteer group has acquired an actual chin turret, control panel, seats, and a bombardier control panel which will be installed eventually.

Integrity:

Although not operational, B-17G 44-83690 has enough integrity to merit National Register listing. It meets the basic test of integrity for such properties: it still retains its overall identity as a WWII era heavy bomber. Even on the interior, where the cockpit has been stripped, one is still aware of its basic features. The interior still has the feeling of a WWII airplane.

Integrity of location is an issue. 44-83690 is a museum piece, yet its display in the open, adjacent to an air force base, is wholly appropriate. Other museum artifacts have been listed. U-505, a captured WWII German submarine completely located within a museum (Museum of Science and Industry, Chicago) was recently listed. In Indiana, the Broad Ripple Park Dentzel Carousel,

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located within the Children's Museum in Indianapolis, was declared an NHL recently. When considering items such as 44-83690 for listing, one should note that obsolete military equipment like this is likely only to be found in some type of museum setting. Display indoors is not inappropriate, provided that the plane is not mounted as a museum object. Indeed, protection from the elements will soon become essential for all Fortresses which are to survive. The hanger-like structure erected for "Memphis Belle" (B-17F-10-BO-41-24485) is an exemplar of indoor aircraft display. The focus should be on the appropriateness of the location and its manner of display. B-17G 44-83690 is displayed in a dignified, simple manner in a fitting location.

Design integrity for aircraft can be assessed within the following three basic categories: airframe, power plants, and equipment. To be eligible, a significant aircraft type should have the majority of the first two items intact. Mass produced aircraft have parts which were intended to be interchangeable, so a major reconstruction of an airplane would not necessarily be ineligible. Within this framework, 44-83690 retains enough integrity to qualify for National Register listing.

Integrity of setting for 44-83690 is discussed along with location integrity.

In terms of materials, historic aircraft should retain the majority of their historic materials in order to qualify for listing. Again, one must bear in mind that patching and extensive repairs with standard parts is part of the process of operating and maintaining an aircraft. 44-83690, having been more deteriorated by the elements rather than use, has good integrity of materials.

Generally, mass produced aircraft do not display "workmanship" in the traditional sense. However, authentic nose art or markings may display workmanship.

Integrity of feeling, in regard to historic aircraft, is enhanced by proper location and presentation. As discussed above, 44-83690

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retains ample integrity of feeling to qualify.

Association with historic events and trends gives historic significance to properties. In the case of aircraft, many "replicas" are produced from the prototype which responded to the event. As more fully discussed in section 8, an aircraft can be significantly associated with an event without having physically participated in that event. This is especially important in evaluating military aircraft since so few with actual combat time survive. Association can be demonstrated in the design.

One category of integrity not covered by standard National Register categories is the operational status of the airplane. In regard to historic aircraft, one should not assume that only those of a type which are operational merit listing. Instead, one should determine if the plane could be made operational and still meet the standards set above. Several B-17s with less integrity than 44-83690 have been restored to working status. 44-83690, therefore, meets this final test of integrity.

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B-17G "Flying Fortress" No. 44-83690 is significant under Criterion A in the area of military history. 44-83690 is a reasonably intact example of a significant World War II aircraft type of which only 50 exist in the world. The young and eager Air Corps formulated the doctrine of strategic daylight bombing based largely on their confidence in the B-17. Although many U.S. airmen and craft contributed to the Allied victory in World War II, the B-17 has become especially symbolic of the self-reliance, daring, and sacrifice of American airmen during the World War II era. 44-83690 is further significant as an example of an experimental craft which participated in military tests shortly after World War II. 44-83690 also meets Criterion C in the area of engineering as a significant aircraft design. 44-83690, as a part of a national defense system, is best evaluated for national significance. Though less than 50 years of age, 44-83690 meets Criteria Consideration G because of its rarity. Sufficient time has elapsed, and considerable data has been assembled and analyzed about World War II, so that objects such as 44-83690 can be fully appreciated without having met the 50-year mark.

## Potential NHL Themes

44-83690 appears to have significance within several established National Historic Landmark themes. These are: VIII. World War II A. The War in Europe, Africa, and the Atlantic, 1939-1945; B. The War in the Pacific, 1941-1945; and IX. Political and Military Affairs after 1945. Additionally, the author recommends that a nation-wide survey and study of World War II aircraft be undertaken.

## Context-Military Significance

The nominated aircraft did not fly combat missions, yet it has significant association with the events of World War II. Obviously, 44-83690 would never have been built were it not for the war, but its association with the conflict is more than casual. It is of the same design as aircraft which saw combat; its physical appearance is a direct result of experience gained in combat. 44-83690 is a representative of an aircraft type which deeply affected military policy during the war. To a certain extent, military strategy has always been dictated by the

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technology available, but in the case of the B-17, the Air Corp's daylight bombing campaign was developed around a single aircraft type.

Boeing Company manufactured a prototype Model 299 for an Army Air Corps multi-engine bomber competition to be held in August of 1935. "Multi-engine" usually meant two-engine at that time, but Boeing Company chose a four engine design based partly on the massive Model 294 (the XB-15), with the airframe resembling Boeing Model 247. Boeing engineer Edward Wells headed the design team. The test flight from Seattle to Wright Field in July 1935 was made non-stop (2,000 miles) at an average speed of 252 m.p.h. It duly impressed military observers. The designation "Flying Fortress" and the prefix B-17 was assigned to the craft.

B-17s were initially intended as a fast, land-based bomber which could patrol at sea and intercept naval vessels.

B-17C's were the first of the series to see action. Twenty were flight delivered to the R.A.F. on the Lend-Lease arrangement in 1940. The British gave them the designation Fortress I and pressed them into bombing well-protected sites. B-17Cs proved to be undergunned and perform poorly in this role.

Following this lesson, Boeing engineers redesigned the tail assembly and improved firepower. The improved version was the B-17E. The tail took on its characteristic size and forward sweep, and a rear tail gunner position with twin armament was added. Dorsal and ventral twin-gunned turrets were added. After 112 units were produced, the bottom turret was replaced by the Sperry ball turret. The E model was the most advanced type of B-17 when the U.S. entered World War II. They were the first American-manned B-17s to see action in the European Theatre.

B-17Fs had increased armament provided by additional hand-held guns which fired through the nose window or nose cheek area and a single gun which could be fired upward from a dorsal window aft of the top turret. Self sealing oil tanks, increased electrical power sources, and modifications to the propellers and cowlings to

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allow feathering also improved the F series.

The final improvement on the B-17 was the G series, introduced in July of 1943. Firepower was once again boosted. A twin-gunned, power operated chin turret was added to counter head-on attack fighter tactics used by the Luftwaffe. Angled cheek gun ports on the nose area also increased forward firepower. Waist gunner windows were staggered to allow greater freedom of movement for the gunners. The tail turret was now power operated.

B-17s saw action in both the Pacific and European Theatres. Indeed, it was a flight of unarmed B-17s heading to Hawaii which confused radar operators and led them to disregard the signal of the approaching Japanese squadrons just before the Pearl Harbor attack. Some of these planes later joined the unsuccessful hunt for the Imperial Navy task force. Following the concurrent attack on Clark Field in the Philippines, B-17s undertook rearguard attacks against Japanese targets from Clark Field, Mindanao (Java), and finally Australia as Allied forces were pushed back. One Fortress, "Swoose" (B-17D 40-3097), still exists from this phase of the war, although it has been disassembled and put in storage. B-17s located and attacked (unsuccessfully) the Japanese fleet at the Battle of Midway on June 4, 1942. B-17s based on the Aleutian Islands conducted reconnaissance and raids against the Japanese. However, by the time sorties against Japan commenced in earnest (1944) the B-29 had replaced the B-17 for use in the Pacific Theatre.

In the European Theatre, the B-17 became the mainstay of the Air Corps heavy bomber groups. Indeed, American confidence in the B-17 became the cornerstone for the Air Corps doctrine of "strategic daylight" bombing. U.S. military planners formulated the theory that massive attacks on key vital industries and military sites, conducted without ground or sea forces, would paralyze the enemy's ability to wage war. This concept was new in military planning. Given the technology of the day, such pin point bombing could only be accomplished in broad daylight. Others, including the British, thought strategic daylight bombing to be unfeasible and favored "saturation" bombing techniques. The B-17 had the range, payload

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capacity, and durability to conduct daylight raids over Europe. The firepower of B-17s was felt to be adequate to conduct raids beyond the range of available fighter escorts. Equipped with the top-secret Norden bomb site (manufactured at Naval Avionics in Indianapolis, Indiana), the B-17's accuracy was felt to be unequalled.

American confidence in the B-17 led to Roosevelt's insistence on a "Combined Bomber Offensive" campaign at the January 1943 Casablanca Conference. The R.A.F. would continue night saturation bombing, complemented by American precision daylight bombing by day.

Army Air Corps bombing missions met with initial success. A demonstration sortie against the rail yards at Rouen, France on August 17, 1942 hit the target and easily dispersed Luftwaffe fighters with no casualties. Raids in early 1943 were successful and American losses were deemed acceptable. At last, the "Flying Fortress" was living up to its name. But just as the raids pressed into the heart of Germany, casualties mounted. In August and October of 1943, strikes against industrial targets in Schweinfurt and Regensburg met with fierce fighter opposition and the ratio of losses were unbearable. American daylight bombing was postponed until early 1944.

By this time, belly fuel tanks which could be jettisoned had been devised for the rugged P-47 "Thunderbolt" fighter, some of which were manufactured in Evansville, Indiana. Later, P-51 Mustangs became available. With first-line long range fighter escorts, B-17s struck at will throughout Germany until April, 1945, when bombing ceased due to a lack of targets.

The effectiveness of strategic daylight bombing has been the subject of much debate. There is little question, however, that Allied air supremacy hastened the downfall of Germany, and that the B-17 played a significant role in that process.

During the final months of World War II, B-17s were still in mass production. Hundreds were temporarily stored at several air bases.

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Most were scrapped. Since their fuselage is too narrow for passenger use, civilian utilization of spare B-17s was limited to tanker and sprayer roles. The military continued to use B-17s for testing purposes or for patrolling. Testing became a significant role for the B-17 and provided data and field experience which perfected the modern air arsenal of the United States.

B-17s participated in post-war testing by conversion to DB-17 types. DB-17s were fitted with radio guidance controls for directing unmanned drone QB-17s. Experiments in guided B-17s were conducted against fortified targets during World War II. The drone craft, packed with explosives, was manned by a minimal crew for take-off. Having been put on course, the crew bailed out and a director (hence "D" B-17) guided the projectile to the target. Post-war QB-17s were fitted with television cameras and used for missile target practice. Data supplied from such experiments assisted in the perfection of air-to-air missiles. Often, older DBs were stripped and converted to QBs, which were then destroyed in testing.

Another significant post-war use of drone Fortresses was in nuclear testing. Director B-17s guided their partners into nuclear blasts to test radiation levels. Two tests, Operation Crossroads (1946) and Operation Greenhouse (1951) were monitored by B-17 drones. These early nuclear tests allowed the United States to improve her terrible arsenal of atomic weapons. Open tests also became significant demonstrations of American military power.

44-83690 was directly involved in both types of testing. In February 1951, she flew to Kwajalein (Marshall Islands) in the South Pacific to participate in Operation Greenhouse. From 1956 until 1959 83690 was assigned to the 3235th Drone Squadron, Missile Test Center, Patrick AFB in Florida. The test center evaluated Nike, Talos, Genie, Bomarc, and Sidewinder missiles by destroying B-17s. In some cases, intentional partial hits were used to evaluate results. An occasional director Fortress was damaged in the process.

Context-Criterion C



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44-83690 meets Criterion C because it is a significant aircraft type which embodies distinctive design features. Overall, the most enduring characteristic of the Flying Fortress was its rugged airframe. The Boeing designed airframe allowed Forts to sustain incredible battle damage and still perform their task. Tales abound to illustrate this point, but, perhaps the most famous involves a B-17 operating near Tunisia. The B-17 was sheared by a suicidal Me-109, slashing the fuselage nearly completely through and removing a stabilizer. The plane returned safely to base. The rugged design of the B-17 served it well in the post-war years, when they became missile targets, among other things. One B-17 (B-17G-85-DL-44-83575) even survived three nuclear test blasts.

## Extant Aircraft-Evaluation

Scott Thompson's Final Cut provides the historic context for post-war usage of the B-17 and also provides an in-depth "survey" of existing models. According to this source, B-17s are exceedingly rare. 12,726 of all models were manufactured; 6,981 by Boeing, 2,750 by Vega (a Lockheed subsidiary), and 2,995 by Douglas. As of 1990, only fifty existed in the world. Of these fifty, thirteen have been abandoned, are disassembled and in storage, or are partial airframes. Thirty-seven complete examples are extant, including twenty-one which are on display, five under restoration, and eleven which remain operational. Of all fifty, only three saw combat during World War II.

Classified by type, there are one D, five E, three F, and twenty-eight G B-17s in existence. The G types are most common because they were still in production when the war was nearly over. Also, when first introduced, Gs replaced older models, which were then stripped to service Gs. Lastly, Gs had a better survival rate in combat, since they were in service during a period of Allied air supremacy.

B-17G 44-83690 has enough integrity to qualify for the National Register. It retains its basic identity and is easily recognized as a B-17. Other B-17s may possess greater integrity or may be more closely associated with the events of World War II. Those which are operable are obvious National Register candidates, as

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are those which saw combat. Nevertheless, 44-83690 is associated with America's defense during this period and is a representative of a significant aircraft type.

44-83690-History

44-83690 is a representative G-series B-17. She was delivered for use on May 9, 1945. First assignment was to Patterson AFB (Ohio), 4100 Base Unit, where 44-83690 was put into storage. On November 14, 1945, 83690 was assigned to 4168 Base Unit (Air Material Command), South Plains Field, Texas. In June of 1947, 44-83690 was transferred to 4141 Base Unit, Air Material Command, Pyote Field, Texas.

In July 1950, 44-83690 was fitted with special equipment and redesignated DB-17G. Conversion of the plane was accomplished at Olmstead AFB, Middletown Air Depot, Pennsylvania. She was transferred to 3200 Drone Squadron at Elgin Air Force Base in Florida. In February 1951, 44-83690 was dispatched to Kwajalein, Eniwetoka (Marshall Islands) as part of the 3200 Proof Test Wing to participate in Operation Greenhouse, a series of nuclear tests for the Atomic Energy Commission.

44-83690 was transferred to Patrick Air Force Base in Florida as part of the 3205 Drone Group, 3215 Drone Squadron in May of 1951. Additional drone equipment was installed in 1955, and 44-83690 was redesignated DB-17P. From 1956 to 1959, 83690 was part of the 3235th Drone Squadron, Missile Test Center, Patrick AFB. One of the last active military B-17s, 44-83690 was removed from the official Air Force inventory in August of 1960. Her last flight was to Grissom AFB (then known as Bunker Hill) for permanent display in 1961.

The Heritage Museum Foundation, established in 1981 as part of the Air Force Museum Program, maintains 44-83690. The museum, which is open to the public without having to enter the base itself, displays aircraft which have been used by the 305th Group throughout its history. Grissom is currently home to the 305th Group, which now operates refueling tankers.

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### 10. Geographical Data-continued

#### Verbal Boundary Description

The boundary is the B-17 aircraft located at the above UTM reference point bearing the serial number 44-83690.

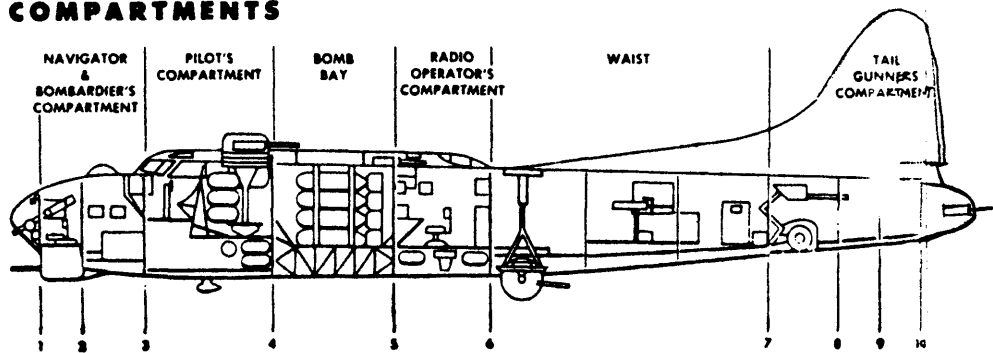
#### Verbal Boundary Justification

The boundary includes only the significant aircraft and no real estate because historic aircraft are portable in nature.

Typical internal arrangement of a B-17G.

Match interior views to this diagram.

**COMPARTMENTS**



**STATIONS**

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Source: B-17 Flight Manual