NPS Form 10-900 (Rev. 10-90)	581	OMB No. 1024-0018
United States Department of the Interior National Park Service	RECEIVED 2280	
NATIONAL REGISTER OF HISTORIC PLACE REGISTRATION FORM	IS MAY 2 3 2003	
1. Name of Property		
historic name: Old Terminal Building, Hangar, a other names/site number:	and Powerhouse at Key Field Service	ES
2. Location	·····	
street & number: 2525 U.S. Highway 11 South city or town: Meridian state: Mississippi code: MS	not for public vicini county: Lauderdale code: 75	ation N/A ity zip code: 39307
3. State/Federal Agency Certification		
registering properties in the National Register of requirements set forth in 36 CFR Part 60. In my National Register Criteria. I recommend that this locally. (See continuation sheet for ad http://www.commend.commend Signature of certifying official Deputy State Historic Preservation Officer State or Federal agency and bureau	f Historic Places and meets the proced y opinion, the property <u>X</u> meets <u></u> s property be considered significant <u>X</u> Iditional comments.) <u>MAY 2.1, ZO</u> Date	ural and professional does not meet the nationally statewide
In my opinion, the property meets do sheet for additional comments.)	es not meet the National Register crite	eria. (See continuatio
Signature of commenting or other official	Date	
State or Federal agency and bureau		
4. National Park Service Certification	\sim	
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	Signature of the Keeper Date	of Action 77703
removed from the National Register	· · · · · · · · · · · · · · · · · · ·	

5. Classification				
Ownership of Property: Publiclocal	Number of Resources within Property: (Do not include previously listed resources in the count)			
Category of Property: Buildings	Contributing 3	Noncontribut	ing buildings sites structures obiects	
	3	0	Total	
Name of related multiple property listing (Enter "N/A" if property is not part of a multiple property listing.)	Number of contributing resources previously listed in the National Register			
N/A	0			
6. Function or Use Historic Functions:				
Current Functions: TRANSPORTATION/Air-related				
7. Description				
Architectural Classification(s): No Style				
Materials:				

foundation:	Concrete
roof:	Asphalt
walls:	Brick
other	Stucco

Narrative Description:

See Continuation Sheets

8. **Statement of Significance**

Applicabl	e National	Register	Criteria
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- Х Property is associated with events that A have made a significant contribution to the broad patterns of our history.
- Х Property is associated with the lives of В persons significant in our past.
- Х Property embodies the distinctive С 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:

Property is: owned by a religious institution or used for ____A religious purposes. _В removed from its original location. ____C ___D a birthplace or a grave. a cemetery. a reconstructed building, object, or structure. E ____ F a commemorative property.

less than 50 years of age or achieved significance G within the past 50 years.

Areas of Significance

Transportation

Invention

Architecture

Period of Significance 1930-1937

Significant Dates 1930 1935

Significant Person(s) Key, Algene Key, Frederick Cultural Affiliation(s) N/A Architect/Builder Unknown

Narrative Statement of Significance:

See continuation sheets.

9. Major Bibliographical References

Bibliography See continuation sheet.

Previous documentation on file (NPS)

X preliminary determination of individual listing Office

- (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 X State Historic Preservation
 - _ Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository:

#

10.	Geograp	hica	I Data						
Acrea	ige of Prope	rty:	1.6 acres						
UTM	References:	A B	Zone 16	Easting 336000	Northing 3578960	C D	Zone	Easting	Northing
s	ee continual	tion s	sheet.						
Verba	al Boundary	/ De	scription	See	continuation sheel	•			
Boun	dary Justifi	cati	on:	See	continuation sheet	•			
11.	Form Pre	par	ed By						
name organ street city or	/title: Brenda ization: Miss & number: town: Jacks	a R. (issip P.O. son	Crook, Pre pi Departn Box 571	eservation Sp nent of Archiv	ecialist ves and History state:	MS		date: Febri telephone: zip code: 3	uary 7, 2003 601-359-6940 9205-0571
Addit	ional Docu	men	tation						
Subm Contir Maps A L A s Photo Re Additic	it the followin nuation Shee JSGS map (ketch map fi graphs presentative pnal items (C	ng ite ets 7.5 c or hi blac Chec	ems with the pr 15 minu storic distr k and whi k with the	ne completed te series) ind icts and prop te photograpi SHPO or FP	I form: icating the property erties having large hs of the property. O for any additional	's locatio acreage items)	on. 9 or nume	erous resourc	æs.
Prope	erty Owner(s)							
name: street city or	Meridian A & number: I town: Merid	irpor P.O. lian	t Authority Box 4351	,	state:	MS	telepho	one: 601-482 zip code: 3	-0364 9304

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 the 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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Old Terminal Building, Hangar, and Powerhouse at Key Field Lauderdale Co., MS

7. DESCRIPTION

Located southwest of Meridian on U.S. Highway 11 South, Key Field's Old Terminal Building, Hangar, and Powerhouse form the earliest known surviving airport complex in the state of Mississippi. The airport was established in 1928 and opened in November 1930 with the completion of these three buildings and a graded and packed dirt runway. Originally named the Meridian Regional Airport, it was renamed Key Field in 1935 in honor of Algene and Frederick Key, who broke the world's flight endurance record. By November 1937, the runway had been paved and a complete airport lighting system was installed.

The majority of the site is paved in asphalt, with a large parking area in front of the Terminal and paving extending from behind the Terminal to the Hangar. Only small areas around the buildings are unpaved, and landscaping is limited to the Terminal, which has shrubbery and an ornamental tree. The airstrip is west of the buildings.

Facing east toward the highway, the Old Terminal is a two-story, brick building with singlestory, one-by-one bay, front entrance pavilion and side wings. The structure is supported by a concrete foundation, and the side-gabled, two-story section of the building has parapeted end walls and exterior end chimneys. The brick chimneys are partially finished with stucco, creating the illusion that the corners of the chimneys are trimmed with brick quoins. The side wings and front pavilion have flat, parapeted roofs, and a porte-cochere extends from the front pavilion and features a gabled roof terminated by a tall brick wall with stepped parapet. Within the central recessed portion of this wall is a large round-arched opening, above which is a plain stucco panel. The front pavilion features a segmental arched opening that leads to a recessed entrance having paired 12-light doors topped by a six-light transom and framed by four-light sidelights with single-light transoms. On both the north and south wall of the pavilion is a single 8-light casement window with concrete sill and lintel. To each side of the pavilion, in the one-story wings, is a round-arched opening filled with paired 10-light casement windows, and stucco panels are above and below the casements. Simplified "hood molds" crown the openings and are composed of brick voussoirs and keystones. Small stucco panels decorate the walls of the first floor of both the front and rear elevations. The second story of the façade has three openings containing paired 10-light casement windows, and the wall is finished with stucco, but the cornice is brick, and brick quoins frame the windows and ends of the facade.

The north and south elevations have a single opening on the first level and two window openings filled with 10-light casements on the second. The north elevation has paired 10-light casement windows in the lower level, while the first story of the south elevation has a round-

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Old Terminal Building, Hangar, and Powerhouse at Key Field Lauderdale Co., MS

arched opening filled with paired 8-light doors topped by a four-light transom. The arched area above the transom is finished with stucco.

A one-story, polygonal porch dominates the rear elevation, which faces onto the airfield. Concrete steps lead to three segmental-arched openings, above which are plain stucco panels. On both the north and south wall of the porch is a rectangular "window" opening with concrete lintel. Opening onto the porch from the waiting room are three entrances, each filled with paired 12-light doors topped by 5-light transoms. Flanking the porch, in the one-story wings, are round-arched openings; the northern one contains a single 12-light door topped by a stucco panel, while the southern opening is filled with paired 10-light casement windows, above and below which are stucco panels. The second floor, which is finished with stucco and brick like the main façade, has a central 12-light door that opens onto the porch roof, which forms an observation deck overlooking the airfield. The door is flanked by paired 10-light casement windows.

The interior of the Terminal contains a central waiting room, with the former manager's office and ticket office to the north and the baggage and mailroom to the south. The walls and ceilings throughout the building are finished with plaster, and the floors are finished with vinyl tile. The north and south walls of the waiting room are coved, and in the south wall is a fireplace with simple brick surround. Two metal posts support a center beam that runs the length of the waiting room. A narrow enclosed stair, located just south of the waiting room, leads to the second floor, which is a single room that originally housed the weather bureau.

To the north of the Terminal is the Hangar, a large, rectangular, brick building resting on a concrete foundation and crowned by an asbestos-clad gable roof with parapeted end walls. The end walls are capped by pent roofs, directly below which are decorative brick panels framed by stucco, and the gables are finished with stucco. The Hangar was built to accommodate ten planes, which gain access through either the south or north end through eight large sliding metal doors. The north and south brick walls, which are wing walls, have pockets to accommodate the sliding doors. Each of these doors has 48 lights, and one door on both elevations has a wicket. The east elevation has three large openings filled with multilight metal windows, and there is a 14-light metal window at the south end. The west elevation contains three large multi-light metal windows. The interior has a concrete floor, unfinished brick walls, and unfinished ceiling with exposed steel trusses. On the east end is a small office to the north and a washroom to the south, and a stair leads to a narrow second floor room that overlooks the workroom/ plane storage area.

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Old Terminal Building, Hangar, and Powerhouse at Key Field Lauderdale Co., MS

On the east side of the Hangar is the diminutive brick Powerhouse. The one-story, one-by-one bay building has a gable roof with parapeted end walls with concrete copings, and the roof is clad with corrugated asbestos panels. Entrance is gained through a five-panel door on the south elevation, and the only other openings are a 6-light metal window on the east elevation and a small vent on the west elevation.

The complex retains a high degree of integrity. The Old Terminal Building and the Hangar have been sensitively rehabilitated based on physical evidence and a 1943 postcard.

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Old Terminal Building, Hangar, and Powerhouse at Key Field Lauderdale Co., MS

8. STATEMENT OF SIGNIFICANCE

Built in 1930, Key Field (originally the Meridian Regional Airport) is nationally significant under Criterion A for association with the world's airplane flight endurance record, which was set in 1935 and which still stands, and with the development of air refueling valves. The complex is also nationally significant under Criterion B for association with Algene and Frederick Key, who were pioneers of aviation and who set the flight endurance record. When they broke the record in 1935, they were the co-managers of the Meridian airport, where they also operated the Key Brothers Flying Service. Finally, the three buildings composing the complex are of statewide significance under Criterion C as rare, intact examples of early airfield architecture, and are, in fact, the oldest known airport buildings to survive in the state. The period of significance extends from 1930, when the Terminal, Hangar, and Powerhouse were built, to 1937, when the field's runway was paved and the airport was certified as safe for commercial airline operations.

The Meridian Regional Airport was established in 1928 and was opened in November 1930, with the completion of the Terminal, Hangar, Powerhouse, and a graded and packed dirt runway. Meridian city officials asked Algene and Frederick Key, who operated the Key Brothers' Flying School at Bonita Field several miles outside Meridian, to co-manage the new facility. At the new airport, the brothers were able to maintain a flying school in addition to performing their other duties, such as selling commercial airline tickets, operating the terminal and hangar, and handling airmail delivery schedules.

In the 1930s, the Great Depression affected the airfield's business. Airmail deliveries tapered off, and few people could afford to take commercial flights or pay for flying lessons. The City was concerned about the cost of maintaining the airport and considered abandoning it. The Key brothers devised a scheme to bring worldwide attention to Meridian and its airport by attempting to break the standing flight endurance record of 23 days. Al Key was reported to have said, "We...felt that by establishing such a record here in Meridian that the world wide [*sic*] attention it would focus on Meridian would give city officials sufficient incentive to develop an adequate airport."¹

To accomplish this feat they modified a small single-engine Curtiss Robin airplane, which they named the *Ole Miss*, by adding a catwalk to allow mid-flight repairs and mid-air refueling and

¹Stephen Owen, *The Flying Key Brothers and Their Flight to Remember* (Meridian, MS: Southeastern Printing Co., 1985), p. 122.

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Old Terminal Building, Hangar, and Powerhouse at Key Field Lauderdale Co., MS

by adding an extra 150-gallon fuel tank. The plane's three seats were removed to provide room for the tank, and the pilot's seat was built into the forward end of the tank. When off duty, one of the brothers could crawl over the tank to the rear luggage compartment, which housed a thin mattress. Space was tight, however, and there was only enough room to lie back, partly sitting on the mattress with legs resting on the tank.

In the 1930s, air-to-air refueling was still a dramatic and dangerous innovation. It had been done on other endurance flights, but if gasoline from the hose spattered the exhaust area during refueling, the gas would ignite. To avoid that possibility, a Meridian mechanic, A.D. Hunter, fashioned an automatic cutoff valve for the hose nozzle. Developed at the airfield's Hangar and the Soulé Machine Shop in Meridian, the valve was triggered by a probe within the receiving tank's inlet pipe so that no fuel could leave the hose unless the nozzle was safely in place. James Keeton, who was taught to fly by Al Key, piloted the refueling plane and Bill Ward was in charge of lowering the fuel hose and supplies to the endurance plane.² Through trial and error, the Keys discovered that if the endurance plane climbed up to the refueling plane after the hose had been connected, they would converge into the same slipstream. At a distance of between eight and ten feet apart, the two planes shared the same aerodynamic influence, which made refueling much smoother. This discovery was another first for mid-air refueling.³ Because of the logistics of air-to-air refueling, *Ole Miss* was able to only take aboard 60 gallons of gas at a time, which meant that the plane had to be refueled four times per day.⁴

A.D. Hunter also solved one of the major problems of previous endurance flights by devising quick-drain oil fittings so that oil could be changed in mid-air. A method of transferring fuel safely to the plane's two 25-gallon wing tanks from the 150-gallon auxiliary tank was another problem solved by Hunter, when he masterminded a unique wabble pump.

To solve the problem of communications, the Keys felt strongly that some type of two-way radio system would be needed. They wanted one with long-range transmission capabilities to be able to reach the ground station at the airport so that they could advise the pilots of the refueling plane of their exact location. In 1935, such systems were large, bulky devices without much range, and they were not fitted for small aircraft. Ben Woodruff, a local radio repairman and part-time inventor, built and installed a two-way radio in the plane that needed

²Edward Park, "They Flew & Flew & Flew," *Smithsonian*, Vol. 28, No. 7 [October 1997], p. 97. ³Owen, p. 50.

⁴Park, p. 98.

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batteries and a wind-driven generator. This was the first use of a very high frequency (VHF) air-to-ground and ground-to-air radio outfit, which is now the most popular band for aviation communication and navigation.⁵

After two unsuccessful attempts to break the record, the brothers launched their third attempt on June 4, 1935. They flew a figure eight pattern over Meridian, and as their time aloft mounted, the flight attracted worldwide attention. On July 1, the Key brothers landed at the Meridian airport to a cheering crowd of about 35,000 people after completing 27 days aloft. They had flown non-stop for more than 52,000 miles (a distance roughly equal to twice around the world) in 653 hours, 34 minutes. To date, no airplane has beaten the record set by the Keys.⁶ (Not until NASA's *Skylab II* mission in 1973 did man stay above earth longer than the Keys, but the brothers' intra-atmospheric flight record has not been broken for the class of aircraft they flew.)⁷ Upon breaking the endurance record, the airport was renamed Key Field in the brothers' honor, and in 1955 *Ole Miss* was turned over to the Smithsonian Institution.

In the context of one of the nation's most impoverished and rural states during the Great Depression, the Key brothers performed highly advanced aviation experiments that yielded phenomenal results. The cutoff valve developed for the Keys by A.D. Hunter was an important innovation for national defense, being the precursor of those used by modern tanker planes that keep fighters and bombers in the air.⁸ Today, with only slight modifications, U.S. Air Force and Strategic Air Command planes use the valve that Hunter invented. From the Key brothers' flights came significant insight into the aerodynamic principles of mid-air refueling and a new safety nozzle that enabled rapid and safe in-flight fill-ups.⁹

Despite the fame that accompanied the new endurance record, Key Field still lacked a paved runway, and this posed a safety hazard to larger aircraft in wet weather. In January 1936, Delta Air Corporation suspended air service to Meridian until a paved runway was installed. Al Key had been appointed as a WPA Regional Director of the Airport Development program in 1935, and in this position, he was instrumental in establishing new alrports and making improvements to existing airports. Under his influence, and with funding from the WPA through the Bureau of Air Commerce, Key Field's runway was paved and a complete airport

⁵Owen, p. 39.
 ⁶Park, pp. 99-100.
 ⁷Owen, p. vii.
 ⁸Park, p. 100.
 ⁹Owen, p. 47.

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lighting system was installed. By November 1937 the airport was certified as safe for commercial airline operations.

The Key brothers served as bomber pilots in the Pacific theater during World War II. Fred was awarded the Distinguished Flying Cross, and Al earned a Distinguished Flying Cross, a Distinguished Service Cross, an Air Medal, a British Distinguished Service Cross, and seven bronze stars for participating in major combat. After the war, Fred ran the Key Brothers Flying Service at Key Field until his death in 1971. He also helped reorganize the 153rd Air Guard Squadron and served as commander until 1948, when he relinquished his position to aid in organizing the Mississippi Civil Air Patrol for the east Mississippi district. Al remained in the Air Force until his retirement in 1960 at the rank of full Colonel. After serving in the Secretary of the Air Force's office at the Pentagon, he became mission chief at the U.S. Air Force Base in Bogota, Columbia. Upon retirement, Al served as director of Lauderdale County's Civil Defense post from 1960 until 1965, and later served two terms as Meridian's mayor. He died in 1976.¹⁰

The leadership of the Key Brothers in aeronautical circles enabled them to help make east Mississippi an aviation center. In 1975, Governor William Waller presented Outstanding Mississippian Awards to Fred (posthumously) and AI at the 40th anniversary celebration of the record-breaking flight. The Governor stated, "We know today we wouldn't have the largest employer in the Meridian area-the Naval Air Station-[and] we wouldn't have the fine airport facilities here... if we didn't have the leadership, creativity, sacrifice and personal risk that was taken by the Key Brothers.... Meridian, east Mississippi, and the State of Mississippi and aviation generally profited tremendously from their undertakings."

Key Field has a high degree of integrity, retaining its original masonry Terminal Building, Hangar, and Powerhouse, all dating to 1930. On November 7, 1930, The Meridian Star reported that the Terminal "is of modern design and one of the finest in the South."¹² The first floor of the Terminal housed a central waiting room, the manager's office and ticket office, and baggage and mailroom. The weather bureau and observation porch were on the second floor. Passengers could await their flights in either the waiting room or on the large rear porch, which opened directly onto the airstrip, where they would board their planes. The Hangar could house up to ten planes and also had a manager's office, showers and washroom. In 1930,

¹⁰*lbid.*, p. 123. ¹¹*lbid.*, p. 122.

¹² Splendid Hangar Holds 10 Planes; Modern Terminal," The Meridian Star, November 7, 1930.

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Old Terminal Building, Hangar, and Powerhouse at Key Field Lauderdale Co., MS

The Meridian Star boasted, "Most hangars in the South are covered with galvanized iron. Meridian is proud to have completed such a handsome brick and stucco building of this type, which already has caused much comment among visiting flyers."¹³

Intact examples of early airfield architecture are rare in Mississippi, and Key Field's buildings are the oldest known airport buildings to survive in the state. Other early examples include the Hangar of the Old Biloxi Airport (now Building 228 at Keesler Air Force Base), which was built c. 1938, and the Old Terminal Building at Hawkins Field in Jackson, built in 1936 and enlarged in 1941. It is possible that some facilities may survive at a few of the other early airfields in Mississippi, but these have not been documented. Key Field's buildings are significant not only for their early date, but also for the fact that they form a completely intact 1930 complex.

Gil Carmichael, who is leasing the buildings, recently completed an exemplary rehabilitation of the terminal/administration building and the hangar. These buildings are now used as a flight training school and Cessna repair shop.

9. **BIBLIOGRAPHY**

- Mississippi Department of Archives and History, Jackson. Historic Resources Inventory Files, Historic Preservation Division.
- Owen, Stephen. The Flying Key Brothers and Their Flight to Remember. Meridian, Mississippi: Southeastern Printing Co., 1985.
- Park, Edward. "They Flew & Flew & Flew." Smithsonian, October 1997 (Vol. 28, No. 7), pp. 94-100.

"Splendid Hangar Holds 10 Planes; Modern Terminal." The Meridian Star. November 7, 1970.

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10. GEOGRAPHICAL DATA

Verbal Boundary Description:

The boundary of the nominated property consists of a rectangle 315'x225' in size. Beginning at the center point of the roof ridge of the Hangar, measure 65' to the north, 75' to the west, 250' to the south, and 150' to the east. The resulting rectangle of land has sides that are parallel or perpendicular to the ridge of the roof of the Hangar. This property is located in the SW ¼ NW ¼ Section 26, T16N, R15E.

Boundary Justification:

The boundary was selected to include the three buildings that were constructed in 1930, shortly after the establishment of the airport, and their immediate setting. The boundaries exclude all structures post-dating 1937, which is the end of the period of significance.

PHOTOGRAPH LOG

The following information is the same for all photographs:

- (1) Old Terminal Building, Hangar, and Powerhouse at Key Field
- (2) Lauderdale County, Mississippi
- (3) Brenda R. Crook
- (4) February 13, 2003
- (5) Mississippi Department of Archives and History, Jackson
- Photo 1: (6) Old Terminal, Hangar, and Powerhouse, view to Northwest
- Photo 2: (6) Main façade of Old Terminal, view to Southwest
- Photo 3: (6) Rear (airfield) elevation of Old Terminal, view to East
- Photo 4: (6) Waiting Room of Old Terminal, view to Southeast
- Photo 5: (6) Hangar and Powerhouse, view to Northwest
- Photo 6: (6) Interior of Hangar, view to Northwest



Meridian, Lauderdale County, Mississippi



