



Traffic Pattern Guidelines

for Runway 23

Regarding Historic Suttle House

DO NOT REMOVE

**Advisory
Council On
Historic
Preservation**

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

MAR 12 1997

Mr. Dell T. Jernigan
Airports District Office
Federal Aviation Administration
Campus Building
1701 Columbia Avenue, Suite 2-260
College Park, GA 30337-2747

REF: Proposed Improvements to Shelby Municipal Airport
Shelby, North Carolina

Dear Mr. Jernigan:

The enclosed Memorandum of Agreement for the referenced project has been accepted by the Council. Acceptance of the MOA by the Council and implementation of its terms complete the requirements of Section 106 of the National Historic Preservation Act and the Council's regulations for the proposed improvements to Shelby Municipal Airport. We recommend that you provide a copy of the fully-executed Agreement to the North Carolina State Historic Preservation Officer, the North Carolina Department of Transportation Division of Aviation, Mayor Michael D. Philbeck, and Mr. J. L. Suttle, Jr.

Should you have questions regarding this matter, please contact MaryAnn Naber at (202) 606-8534. We appreciate your cooperation.

Sincerely,



MaryAnn Naber
Office of Planning and Review

Enclosure

MEMORANDUM OF AGREEMENT

Between

the Federal Aviation Administration
and

the North Carolina State Historic Preservation Officer
Submitted to the Advisory Council on Historic Preservation
Pursuant to 36 CFR 800.6(a)

for Improvements to Shelby Municipal Airport, Cleveland County, North Carolina

WHEREAS, the Federal Aviation Administration (FAA) has determined that improvements to the Shelby Municipal Airport (the undertaking) will have an effect upon the Joseph Suttle House (Suttle House), a property listed in the National Register of Historic Places; and has consulted with the North Carolina State Historic Preservation Officer (SHPO) pursuant to 36 CFR Section 800, regulations implementing Section 106 of the National Historic Preservation Act (16 USC 470f); and

WHEREAS, the North Carolina Department of Transportation (NCDOT), the City of Shelby, and J. L. Suttle Jr., owner of the Suttle House, have participated in the consultation and have been invited to concur in this Memorandum of Agreement;

NOW, THEREFORE, the FAA and North Carolina SHPO agree that the undertaking shall be implemented in accordance with the following stipulations in order to take into account the effect of the undertaking on historic properties.

STIPULATIONS

FAA will ensure that the following measures are carried out:

I. The City of Shelby shall not acquire land within the runway protection zone on the northeast side of Sam Lattimore Road (SR 1127), and shall not pursue expansion of the existing aviation easement (attached) on the property owned by J. L. Suttle, except as necessary to comply with current FAA requirements which stipulate that the airport owner maintain adequate property interest in the airport environs to assure removal of existing obstructions, prevention of new obstructions, and to achieve compatible land uses.

II. The City of Shelby shall not extend runway 23 in the direction of the Suttle House beyond the limits proposed for the current undertaking. The City of Shelby and NCDOT shall not relocate SR 1127 to the northeast of its existing location for purposes related to the airport.

III. The City of Shelby shall consult with the Airports and Flight Standards Divisions of FAA to develop a flight procedure acceptable to FAA which shall encourage users of the airport to minimize overflights or close flybys of the Suttle House. Such procedure shall address ground tracks, flight altitudes, and turns so as to achieve the goal of minimizing impact to the Suttle House. The North Carolina SHPO and owner(s) of the Suttle House shall be consulted during this process and will comment on the value of the proposal prior to its implementation.

In implementing the final procedures, the City of Shelby shall take vigorous steps to ensure that users of the airport are notified of the procedures, the significance of the Suttle House, and the need to fly in a manner resulting in long term compatibility. Such steps shall include, but are not necessarily limited to:

A. A letter, explaining the significance of the Suttle House and the need for compatible flight operations, to each pilot or business based at the Shelby Municipal Airport and each known pilot or business which uses the airport on an itinerant basis.

B. The posting of notices containing the rules and regulations in the terminal building, public hangars, and other locations on the airport where users may be expected to congregate.

C. The development of a permanent Notice to Airmen which shall be provided to FAA for inclusion in pertinent publications which shall describe the special flight procedures and, to the extent allowed by FAA regulations, request compliance with the procedures.

D. Publicize through newspaper articles, segments on local television and radio, and/or other appropriate local media, the special flight procedures and the role played by the users of the airport in ensuring compatibility between the airport and the Suttle House.

IV. The City of Shelby shall not convert the existing visual flight rules approach to runway 23 to an instrument flight rules approach unless the FAA deems such conversion necessary to enhance safety. The FAA shall not approve any electronic instrument landing systems equipment for the Shelby Municipal Airport which might have a visual, noise, construction, or other aesthetic impact on the Suttle House unless such installation has been reviewed and commented upon by the North Carolina SHPO and such equipment is deemed to be acceptable.

V. If the City proposes to zone the land adjacent to the airport and the Suttle House, it will take the rural and historic character of the historic property into consideration and notify the owner(s) of the Suttle House and the North Carolina SHPO of its intentions prior to adopting any zoning classification for the area.

VI. Dispute Resolution: Should the North Carolina SHPO object within thirty (30) days to any plans provided for review pursuant to this agreement, FAA shall consult with the North Carolina SHPC to resolve the objection. If FAA or the North Carolina SHPO determines that the objection can not be resolved, FAA shall forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within thirty (30) days after receipt of all pertinent documentation, the Council will either:

A. Provide FAA with recommendations which FAA will take into account in reaching a final decision regarding the dispute, or

B. Notify FAA that it will comment pursuant to 36 CFR Section 800.6(b) and proceed to comment. Any Council comment provided in response to such a request will be taken into account by the FAA in accordance with 36 CFR Section 800.6(c)(2) with reference to the subject of the dispute.

Any recommendation or comment provided by the Council will be understood to pertain only to the subject of the dispute; FAA's responsibility to carry out all the actions under this Memorandum of Agreement that are not the subject of the dispute will remain unchanged.

Execution of this Memorandum of Agreement by the FAA and the North Carolina SHPO, its subsequent acceptance by the Council, and implementation of its terms, evidence that FAA has afforded the Council an opportunity to comment on the undertaking and its effects on historic properties, and that FAA has taken into account the effects of the undertaking on historic properties.

Federal Aviation Administration

By: [Signature] Date: 2/13/97

North Carolina State Historic Preservation Officer

By: [Signature] Date: 11/4/96

Accepted:

Advisory Council on Historic Preservation

By: [Signature] Date: 3/12/97

Concur:

North Carolina Department of Transportation, Division of Aviation

By: [Signature] Date: 4/21/96

Concur:

City of Shelby

By: Michael D. Philbeck

Date: 10-27-96

Michael D. Philbeck, Mayor

Concur:

J. L. Suttle Jr.

By



Date: 10-16-96



An employee-owned company

June 5, 2001

MEMORANDUM

TO: Shelby Airport Commission
FROM: Roy Highberg, PBS&J *R. Highberg 6/05/01*
SUBJECT: **Shelby Municipal Airport (EHO)**
Revised Traffic Pattern Guidelines for Runway 23 in accordance with the
Memorandum of Agreement re. Historic Suttle House in the approach to RWY 23

REFERENCES: **MOA between FAA and NC State Historic Preservation Officer,**
signed November 1996

ATTACHMENTS:

- (1) Photo map depicting revised airport traffic pattern for RWY 23
- (2) Plan / Profile depicting (former) VASI approach and (current) PAPI visual glide slopes for RWY 23
- (3) Plan / Profile depicting typical aircraft approach profiles to RWY 23

The following is a description of adherence to Stipulations II, III, and IV in the Memorandum of Agreement (MOA) between the FAA and the NC State Historic Preservation Officer (SHPO) dated November 1996. The MOA is part of the environmental approval for the extension of the runway from 4,300 feet to 5,000 feet, which was completed in late 2000. Revised Airport Traffic Pattern guidelines have been developed to fulfill Stipulation Number III of the MOA. The revised Airport Traffic Pattern guidelines for Runway 23 were approved by the Shelby Airport Commission on February 28, 2001.

The revised airport traffic pattern guidelines for Runway 23 were developed with the understanding that the publication, distribution, and posting of the guidelines are to be accomplished for information purposes only, and do not prohibit pilots from overflights of the historic house or property. The goal of this process

is to reduce the number of overflights and close fly-bys of the historic Suttle House through voluntary pilot adherence to the guidelines.

After approval of the guidelines by the NC Division of Aviation and the FAA, and subsequent review and comment by the NC SHPO and the owner(s) of the historic property, the Shelby Airport Commission will publicize the revised airport traffic pattern guidelines in accordance with Stipulation Numbers III.A, III.B, III.C, and III.D in the MOA.

STIPULATION NUMBER II

The City of Shelby shall not extend Runway 23 in the direction of the Suttle House beyond the limits proposed for the current undertaking. The City of Shelby and NCDOT shall not relocate SR 1127 to the northeast of its existing location for purposes related to the airport.

RWY 23 Extension.

The "current" project extended the RWY 23 approach threshold 300 feet toward the historic house, in accordance with plans circulated during environmental approval of the project. A 600-foot long Runway Safety Area (RSA) was constructed between the new runway threshold and Sam Lattimore Road (SR 1127). The Historic Suttle House is approximately 3,100 feet along the extended runway centerline from the threshold, and approximately 600 feet east of the extended runway centerline.

STIPULATION NUMBER III

The City of Shelby shall consult with the Airports and Flight Standards Divisions of FAA to develop a flight procedure acceptable to FAA which shall encourage users of the airport to minimize overflights or close flybys of the Suttle House. Such procedure(s) shall address ground tracks, flight altitude, and turns so as to achieve the goal of minimizing impact to the Suttle House. The NC SHPO and owner(s) of the Suttle House shall be consulted during the process and will comment on the value of the proposal prior to its implementation. ...

Ground Track ... Refer to Attachment (1) for a visual representation of the "minimum separation" airport traffic pattern ground tracks. This aerial photo "map" would be posted in the airport terminal to inform

pilots of the airport traffic pattern guidelines for minimizing overflights and/or close fly-bys of the Suttle House.

Downwind Leg ... *Pilots of light aircraft will be asked to maintain a separation of at least 1,800 feet between northerly "downwind" legs and the extended runway centerline. The eastern edge of the Shelby Dying and Finishing plant on Sam Lattimore Road is a visual aim point for this "minimum separation" ground track, located approximately 1,200 feet from the east side of the Suttle House. A large pond east of the Suttle House provides another visual landmark for this "minimum separation" ground track. ...*

Base Leg ... *Pilots will be asked not to fly their base legs over the Suttle House. ... (see the following discussion of "Turns" for suggested ground tracks for base legs)*

Final Approach Leg ... *No modifications to the final approach leg are proposed. The extended runway centerline is approximately 600 feet west of the Suttle House, resulting in a ground track for aircraft on final approach approximately 600 feet from the house. ...*

Departure Procedures ... *No departure modifications are proposed. The current departure procedures include either a straight departure along the extended centerline, or a left turn, away from the Suttle House.*

Turns.

Pilots will be asked not to fly their base legs over the Suttle House.

Larger, faster aircraft which typically utilize "straight-in" approaches or large "rectangular" airport traffic patterns do not typically pass over the Suttle House on their westerly (base) legs. Because of its prominent location, the house has historically been used by pilots of light aircraft as a visual aim point for the turn from the northbound (downwind) leg to the westbound (base) leg of the rectangular airport traffic pattern.

For light aircraft, the recommended procedures for the standard pattern will identify either a "tight" base leg or an "extended" base leg. The proposed "tight" base leg would be no further from the airport than the prominent barn(s) and tree line beyond Sam Lattimore Road, for a base leg approximately 900 feet

south of the house. The proposed "extended" base leg would be at or beyond the First Broad River, for a base leg approximately 1,800 feet north of the house.

The recommended airport traffic patterns utilize turn points that are based upon recognizable landmarks, clearly visible from the air. Such prominent landmarks will allow pilots in the air to be comfortable with, and thus be more likely to choose flight paths which achieve the goal of minimizing overflights and close fly-bys of the historic Suttle House.

Flight Altitudes ...

Visual Glide Slope ... Refer to Attachment (2) for a graphical representation of the horizontal limits and vertical profiles for the current PAPI visual glide slope and the previous VASI visual glide slope for Runway 23.

No modifications to flight altitudes are recommended. At a point along the extended runway centerline opposite the Suttle House (2,800 feet from threshold and 3,300 ft from the touchdown zone, 997 ft msl), the lower limit of the visual approach slope (PAPI) is approximately 157 feet above the touchdown zone elevation, approximately 247 feet above ground level, and approximately 187 feet above the elevation of the ground at the Suttle House. This flight altitude represents the minimum elevation to be expected for aircraft on final the approach leg using the visual glide slope provided by the PAPI system. Below this pilots observe dual red light indications warning of safety problems. At a point along the extended centerline adjacent to the Suttle House, the visual glide slope guides pilots within a 30-foot elevation window, from the "low light cutoff" of 997 ft msl to the "high cutoff" at 1,027 ft msl. The 3-degree visual glide slope represents a distance to altitude ratio of 19:1, which is also the standard design for electronic instrument landing system approaches.

The downwind light surface for the previous VASI visual glide slope is also depicted in Attachment (2). The VASI system was in operation prior to the 300-foot extension of Runway 23, and represents the visual glide slope used for Runway 23 operations prior to the MOA. As can be seen from the profile, at a point along the extended runway centerline opposite the Suttle House, the lower limit for the new PAPI visual glide slope is approximately nine (9) feet higher than that for the previous VASI visual glide slope.

Stabilized Final Approaches, Light Aircraft ... Refer to Attachment (3) for a graphical representation of the horizontal limits and vertical profiles for the current PAPI visual glide slope and the vertical profiles for stabilized final approaches for light aircraft for Runway 23.

No modifications to flight altitudes are recommended. Most light aircraft maintain a descent rate of 500 ft per min on final approach. At stabilized final approach speeds from 70 mph to 90 mph, the combination of speed and descent rate result in distance to altitude ratios ranging from 12:1 to 16:1, respectively. Along the extended centerline adjacent to the Suttle House, the typical altitudes for these light aircraft vary between 1,175 ft msl and 1,046 ft msl, or 305 ft and 236 ft above the ground elevation at the Suttle House, respectively. Both of these slopes are higher than the PAPI "Lower Light Cutoff".

STIPULATION NUMBER III (continued)

... In implementing the final procedures, the City of Shelby shall take vigorous steps to ensure that users of the airport are notified of the procedures, the significance of the Suttle House, and the need to fly in a manner resulting in long term compatibility. Such steps shall include, but are not necessarily limited to: [(A), (B), (C), and (D) as follows]

STIPULATION NUMBER III.A.

A letter, explaining the significance of the Suttle House and the need for compatible flight operations, to each pilot or business based at the Shelby Municipal Airport and each known pilot or business which uses the airport on an itinerant basis. (To be accomplished after SHPO / owner review of and agreement with the revised airport traffic pattern guidelines.)

STIPULATION NUMBER III.B.

The posting of notices containing the rules and regulations in the terminal building, public hangars, and other locations on the airport where users may be expected to congregate. (To be accomplished after SHPO / owner review of and agreement with the revised airport traffic pattern guidelines.)

STIPULATION NUMBER III.C.

The development of a permanent Notice to Airmen which shall be provided to FAA for inclusion in pertinent publications which shall describe the special flight procedures and, to the extent allowed by

FAA regulations, request compliance with the procedures. (To be accomplished after SHPO / owner review of and agreement with the revised airport traffic pattern guidelines.)

STIPULATION NUMBER III.D.

Publicize through newspaper article, segments on local television and radio, and/or other appropriate local media, the special flight procedures and the role played by users of the airport in ensuring compatibility between the airport and the Suttle House. (To be accomplished after SHPO / owner review of and agreement with the revised airport traffic pattern guidelines.)

STIPULATION NUMBER IV

The City of Shelby shall not convert the existing visual flight rules approach to Runway 23 to an instrument flight rules approach unless the FAA deems such conversion necessary to enhance safety. The FAA shall not approve any electronic instrument landing systems equipment for the Shelby Municipal Airport which might have a visual, noise, construction, or other aesthetic impact on the Suttle House unless such installation has been reviewed and commented upon by the North Carolina SHPO and such equipment is deemed to be acceptable.

RWY 23 Approach.

The City of Shelby has maintained the existing visual flight rules approach to RWY 23 after the 300-foot extension. As a part of the 300-foot extension, the visual approach slope indicator (VASI) system was replaced by an updated visual approach system, the PAPI. The previous 20-ft threshold crossing height for the "downwind VASI surface" was increased to approximately 27 feet for the PAPI "lower light surface". At the Suttle House, the "lower light surface" with the new PAPI is approximately 9 feet higher than that for the VASI-2 before the 300-ft runway extension. No electronic instrument landing systems have been installed for RWY 23.

C: Hal Mason; City of Shelby [six copies, with attachments]
David Lighthall; PBSJ [no attachments]
PBS&J File; Shelby Client File ... Historic House [with attachments]