

# **ENVIRONMENTAL ASSESSMENT USE OF GOLDEN TRIANGLE REGIONAL AIRPORT BY 14TH FLYING TRAINING WING AIRCRAFT**



**Department of the Air Force  
Air Education and Training Command  
14th Flying training Wing  
Columbus Air Force Base, Mississippi**

**March 2004**

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# **Finding of No Significant Impact Use of Golden Triangle Regional Airport by 14th Flying Training Wing Aircraft Columbus Air Force Base, Mississippi**

## **AGENCY**

Department of the Air Force, Air Education and Training Command, 14th Flying Training Wing (14 FTW), Columbus Air Force Base (AFB), Mississippi.

## **BACKGROUND**

The 14 FTW has a need to improve the efficiency of the T-1 and T-37 elements of the Specialized Undergraduate Pilot Training program conducted by Columbus AFB by using a nearby airport for instrument and visual approach and traffic pattern training instead of the more distant airfields currently being used for this training.

## **PROPOSED ACTION**

14 FTW T-1 and T-37 aircrews will use the Golden Triangle Regional Airport (GTRA), Columbus, Mississippi for practice instrument and visual approach and traffic pattern training. T-1 and T-37 aircraft will accomplish as many as 680 average daily airfield operations at the GTRA. No aircraft maintenance activities are anticipated to occur at GTRA other than the rare occasion when a T-1 or T-37 aircraft might land at the airport due to an emergency that requires maintenance before being capable of a subsequent flight. No Air Force personnel will be based at GTRA.

## **NO ACTION ALTERNATIVE**

The 14 FTW would not conduct T-1 and T-37 training at the GTRA. Columbus AFB T-1 and T-37 aircrews would continue to use the outlying airfields (to include the Shuqualak Auxiliary Airfield [T-37 only]) currently used for training.

## **SUMMARY OF FINDINGS**

The following paragraphs summarize the findings of the attached environmental assessment (EA) for the Proposed Action and No Action Alternative.

## **EVALUATION OF THE PROPOSED ACTION**

**Airspace and Airfield Operations.** The existing routings established by Columbus Radar Approach Control and used under the current condition for aircraft to proceed to and from the GTRA will accommodate the T-1 and T-37 aircraft. The airspace surrounding the GTRA and the air traffic control procedures can accommodate the T-1 and T-37 airfield operations without conflict from other aviation activity.

**Noise.** There will be an additional 2,379 acres and 19 persons within the day-night average sound level (DNL) 65 dBA and greater noise exposure area. The maximum sound exposure level at any of the four specific analysis points from T-1 and T-37 operations will be 103 dBA, which is about 6 dBA less than the current condition. There will be no noise induced hearing loss or nonauditory health effects. There will be no change from the current condition sleep awakenings because the type and number of civil aircraft operations will be the same as the current condition, and T-1 and T-37 aircraft will not operate during normal nighttime sleep periods. However, those individuals who sleep between 7:00 a.m. and 10:00 p.m. likely will be affected just as those persons who sleep during nighttime sleep periods.





**Land Use.** Although the noise exposure area will increase, the additionally exposed areas will continue to be farmland and no other land use types will be exposed to aircraft noise. There will be no change to land use patterns and categories.

## **EVALUATION OF THE NO ACTION ALTERNATIVE**

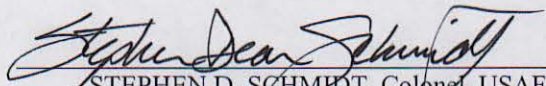
No significant impacts occur from the existing activities at the GTRA.

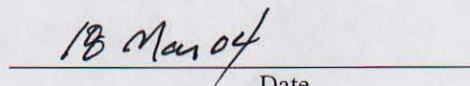
## **ENVIRONMENTAL JUSTICE**

Activities associated with the Proposed Action and No Action Alternative will not impose adverse environmental effects on adjacent populations. Therefore, no disproportionately high and adverse effects will occur to minority and low-income populations.

## **DECISION**

Based on my review of the facts and analyses contained in the EA, I conclude that implementation of the Proposed Action will not have a significant impact either by itself or when considering cumulative impacts. Accordingly, requirements of the NEPA, regulations promulgated by the Council on Environmental Quality, and 32 CFR 989 are fulfilled and an environmental impact statement is not required.

  
STEPHEN D. SCHMIDT, Colonel, USAF  
Commander, 14th Flying Training Wing

  
Date





**Finding of No Significant Impact  
Use of Golden Triangle Regional Airport by  
14th Flying Training Wing Aircraft  
Columbus Air Force Base, Mississippi**

**AGENCY**

Department of the Air Force, Air Education and Training Command, 14th Flying Training Wing (14 FTW), Columbus Air Force Base (AFB), Mississippi.

**BACKGROUND**

The 14 FTW has a need to improve the efficiency of the T-1 and T-37 elements of the Specialized Undergraduate Pilot Training program conducted by Columbus AFB by using a nearby airport for instrument and visual approach and traffic pattern training instead of the more distant airfields currently being used for this training.

**PROPOSED ACTION**

14 FTW T-1 and T-37 aircrews will use the Golden Triangle Regional Airport (GTRA), Columbus, Mississippi for practice instrument and visual approach and traffic pattern training. T-1 and T-37 aircraft will accomplish as many as 680 average daily airfield operations at the GTRA. No aircraft maintenance activities are anticipated to occur at GTRA other than the rare occasion when a T-1 or T-37 aircraft might land at the airport due to an emergency that requires maintenance before being capable of a subsequent flight. No Air Force personnel will be based at GTRA.

**NO ACTION ALTERNATIVE**

The 14 FTW would not conduct T-1 and T-37 training at the GTRA. Columbus AFB T-1 and T-37 aircrews would continue to use the outlying airfields (to include the Shuqualak Auxiliary Airfield [T-37 only]) currently used for training.

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The following paragraphs summarize the findings of the attached environmental assessment (EA) for the Proposed Action and No Action Alternative.

**EVALUATION OF THE PROPOSED ACTION**

**Airspace and Airfield Operations.** The existing routings established by Columbus Radar Approach Control and used under the current condition for aircraft to proceed to and from the GTRA will accommodate the T-1 and T-37 aircraft. The airspace surrounding the GTRA and the air traffic control procedures can accommodate the T-1 and T-37 airfield operations without conflict from other aviation activity.

**Noise.** There will be an additional 2,379 acres and 19 persons within the day-night average sound level (DNL) 65 dBA and greater noise exposure area. The maximum sound exposure level at any of the four specific analysis points from T-1 and T-37 operations will be 103 dBA, which is about 6 dBA less than the current condition. There will be no noise induced hearing loss or nonauditory health effects. There will be no change from the current condition sleep awakenings because the type and number of civil aircraft operations will be the same as the current condition, and T-1 and T-37 aircraft will not operate during normal nighttime sleep periods. However, those individuals who sleep between 7:00 a.m. and 10:00 p.m. likely will be affected just as those persons who sleep during nighttime sleep periods.



**Land Use.** Although the noise exposure area will increase, the additionally exposed areas will continue to be farmland and no other land use types will be exposed to aircraft noise. There will be no change to land use patterns and categories.

## **EVALUATION OF THE NO ACTION ALTERNATIVE**

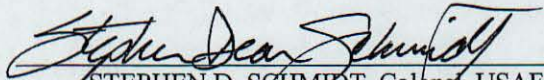
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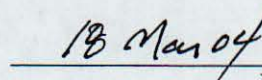
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## **DECISION**

Based on my review of the facts and analyses contained in the EA, I conclude that implementation of the Proposed Action will not have a significant impact either by itself or when considering cumulative impacts. Accordingly, requirements of the NEPA, regulations promulgated by the Council on Environmental Quality, and 32 CFR 989 are fulfilled and an environmental impact statement is not required.

  
STEPHEN D. SCHMIDT, Colonel, USAF  
Commander, 14th Flying Training Wing

  
Date

# **ENVIRONMENTAL ASSESSMENT USE OF GOLDEN TRIANGLE REGIONAL AIRPORT BY 14TH FLYING TRAINING WING AIRCRAFT**

**Department of the Air Force  
Air Education and Training Command  
14th Flying Training Wing  
Columbus Air Force Base, Mississippi**

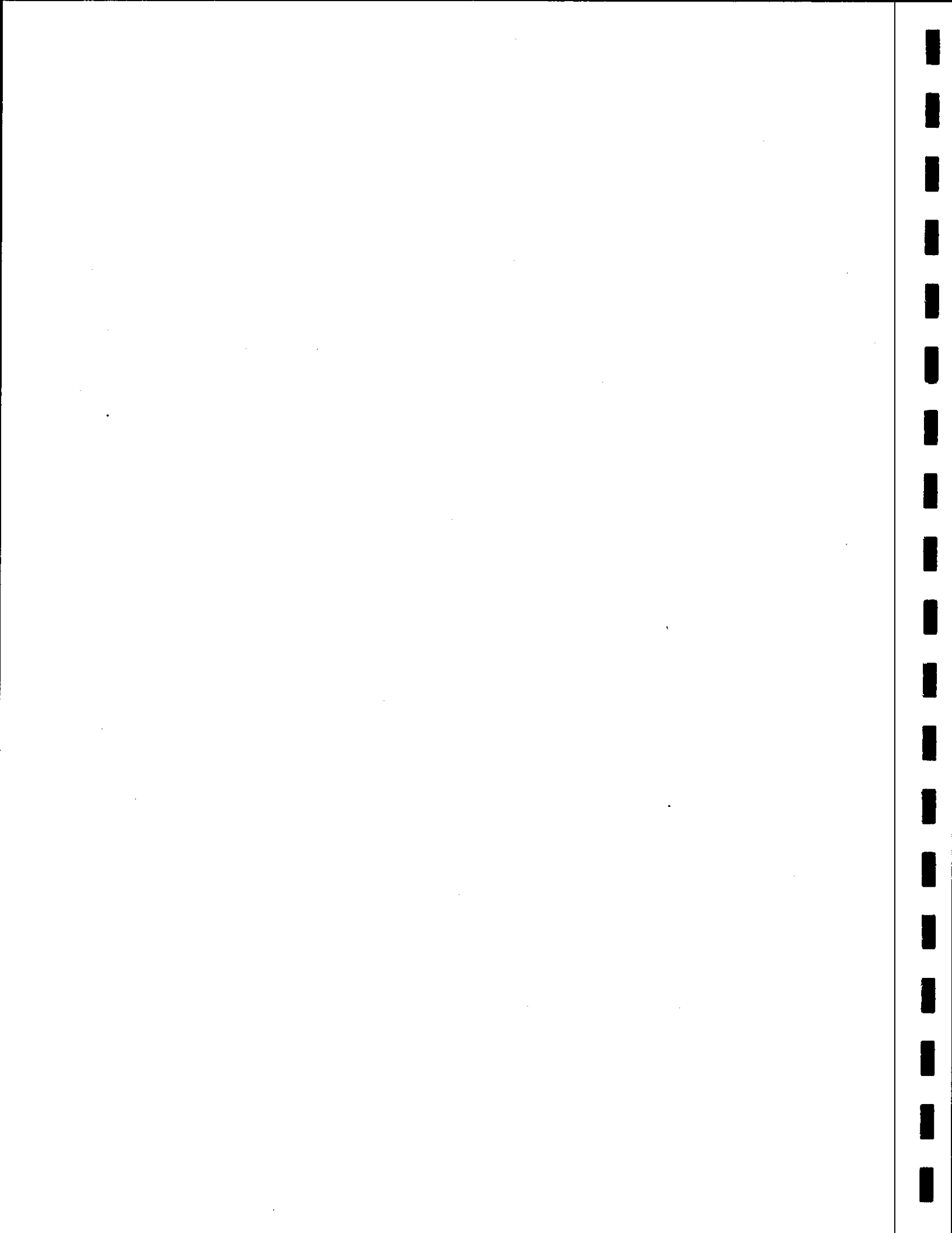
**March 2004**



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**COVER SHEET**  
**ENVIRONMENTAL ASSESSMENT**  
**USE OF GOLDEN TRIANGLE REGIONAL AIRPORT BY**  
**14TH FLYING TRAINING WING AIRCRAFT**

Responsible Agency: Department of the Air Force, Air Education and Training Command, 14th Flying Training Wing (14 FTW), Columbus Air Force Base (AFB), Lowndes County, Mississippi.

Proposed Action: Use of Golden Triangle Regional Airport (GTRA) by 14 FTW Aircraft

Written comments and inquiries regarding this document should be directed to: Mr. Frank Lockhart, 14 CES/CEV, 555 Simler Blvd, Columbus AFB, Mississippi 39710, (662) 434-3130.

Report Designation: Environmental Assessment.

Abstract: The purpose of and need for action is to improve the efficiency of the T-1 and T-37 elements of Specialized Undergraduate Pilot Training conducted by Columbus AFB by using a nearby airport for instrument and visual approach and traffic pattern training instead of the more distant airports currently being used for this training. Under the Proposed Action, 14 FTW T-1 and T-37 aircraft would conduct instrument and visual approach training, as well as takeoff, landing, and closed pattern training at the GTRA, Columbus, Mississippi. No Air Force personnel would be based at GTRA. No aircraft maintenance activities would be anticipated to occur at GTRA other than the rare occasion when a T-1 or T-37 aircraft might land at the airport due to an emergency that would require maintenance before being capable of a subsequent flight. This EA evaluates the Proposed Action and the No Action Alternative. Under the No Action Alternative, the 14 FTW would not conduct T-1 and T-37 training at the GTRA. Resources considered in the impact analysis were: mission; airspace and airfield operations; noise; land use; and environmental justice.

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**ACRONYMS AND ABBREVIATIONS**

14 FTW	14th Flying Training Wing
14 OSS	14th Operations Support Squadron
ACQR	Air quality control region
AFB	Air Force Base
AFI	Air Force Instruction
AGL	Above ground level
ANSI	American National Standards Institute
CEQ	President's Council on Environmental Quality
CFR	Code of Federal Regulations
dB	decibel
dBA	A-weighted sound level measured in decibels
DNL	Day-night average sound level
DoD	Department of Defense
DoDD	Department of Defense Directive
EA	Environmental assessment
EIAP	Environmental impact analysis process
EIS	Environmental impact statement
EO	Executive order
FAA	Federal Aviation Administration
FAR	Federal aviation regulation
FICAN	Federal Interagency Committee on Aviation Noise
FICON	Federal Interagency Committee on Urban Noise
FONSI	Finding of no significant impact
GTRA	Golden Triangle Regional Airport
$L_{max}$	Maximum sound level
MOA	Military operations area
NEPA	National Environmental Policy Act
RAPCON	Columbus Radar Approach Control
ROI	Region of influence
Runway 13L/31R	Runway 13Left/31Right
Runway 13C/31C	Runway 13Center/31Center
Runway 13R/31L	Runway 13Right/31Left
SEL	Sound exposure level
SUPT	Specialized Undergraduate Pilot Training
SUPT EA	Environmental Assessment, Specialized Undergraduate Pilot Training
	Production Increases, United States Air Force, Air Education and Training Command, Columbus AFB, Mississippi, Laughlin AFB, Texas, Vance AFB, Oklahoma, February 1997
USC	United States Code
USEPA	United States Environmental Protection Agency



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## **CHAPTER 1**

### **PURPOSE OF AND NEED FOR ACTION**

The 14th Flying Training Wing (14 FTW) at Columbus Air Force Base (AFB) proposes to conduct T-1 and T-37 instrument and visual approach training, as well as takeoff, landing, and closed pattern training (referred to as traffic pattern training in this document) at the Golden Triangle Regional Airport (GTRA), Columbus, Mississippi.

This chapter has five sections: a statement of the purpose of and need for action; location of the Proposed Action; scope of the environmental review; identification of regulatory requirements; and an outline of the document.

#### **1.1 PURPOSE OF AND NEED FOR ACTION**

The mission of the 14 FTW is to conduct Specialized Undergraduate Pilot Training (SUPT) for Air Force personnel, as well as students from foreign countries. The SUPT program at Columbus AFB has used the T-37 and T-38 aircraft for many years until 1996, when the T-1 was incorporated into the program. The addition of the T-1 increased the number of airfield operations at the Columbus AFB and created a level of operations requiring use of outlying airfields to relieve congestion at the Base. The current use of Columbus AFB, its Shuqualak Auxiliary Airfield, and outlying airfields ensures accomplishment of SUPT. However, 14 FTW personnel continually search for ways to improve the efficiency of the overall SUPT program. The purpose of and need for action is to improve the efficiency of the T-1 and T-37 elements of SUPT conducted by Columbus AFB by using a nearby airport for instrument and visual approach and traffic pattern training.

Columbus AFB has three parallel runways identified as Runways 13Left/31Right (13L/31R), 13Center/31Center (13C/31C), and 13Right/31Left (13R/31L). The runways are used for simultaneous arrivals, departures, and closed patterns by the Base's T-1, T-37, and T-38 aircraft. Under the 3-runway operating condition, T-38 and T-1 aircraft use Runway 13L/31R for visual approaches and traffic patterns, but at separate times due to incompatible operating characteristics; T-37s use Runway 13R/31L for visual approaches and traffic patterns; and Runway 13C/31C is used for T-1 and T-38 departures as well as instrument approach training by all three aircraft.

Runway 13C/31C is the only runway with instrument approaches that can be used in conjunction with closed patterns to Runways 13L/31R and 13R/31L. The combined requirement for all three aircraft types exceeds the number of instrument approaches that can be accomplished in a typical training day on Runway 13C/31C. Therefore, all three aircraft types use outlying airfields that include Tuscaloosa and Huntsville, Alabama, as well as other airfields in Mississippi, for instrument approach training. The closest outlying airfield at 43 miles north of Columbus AFB.

As a result of increased fuel capacity when compared to the T-37 and T-38, the T-1 aircraft can accomplish instrument and visual approach and traffic pattern training at outlying



airports with less disruption to a training sortie than can the other two aircraft. Therefore, to relieve congestion at Columbus AFB, T-1s accomplish a greater number of instrument and visual approaches and traffic patterns at outlying airports than the T-37s and T-38s. However, some of the airports are quite distant from Columbus AFB and the fuel consumed to proceed to and return from the airfields limits the time available for training at the outlying airfield to a minimally acceptable level.

Runway 13R/31L cannot support the total visual approach and traffic pattern training requirements of the T-37 aircraft. Thus, T-37 aircrews use the Base's Shuqualak Auxiliary Airfield, which is about 50 miles south of the Base, and outlying airfields for visual approach and traffic pattern training. The auxiliary airfield has no instrument approaches; therefore, no instrument approach training is conducted at the airfield. The time it takes a T-37 to proceed to Shuqualak Auxiliary Airfield (about 15 minutes), when coupled with the fuel capacity of the aircraft, limits the amount of time available for training at the airfield to a minimally acceptable level.

The T-38 requires a longer runway for operations than the T-1 and T-37 and an aircraft arresting system must be installed on the runway if repeated T-38 traffic patterns are accomplished. These two requirements, when combined with the radius from Columbus AFB within which T-38-compatible airfields must be located due to aircraft fuel capacity, dictate that instrument and visual approach and traffic pattern training be accomplished primarily at Columbus AFB.

For the reasons in the preceding paragraphs, use of an outlying airfield that is closer to Columbus AFB than those currently used for training would improve T-1 and T-37 SUPT program efficiency by reducing the enroute time for T-1 and T-37 aircraft and allow more time for approach and traffic pattern training.

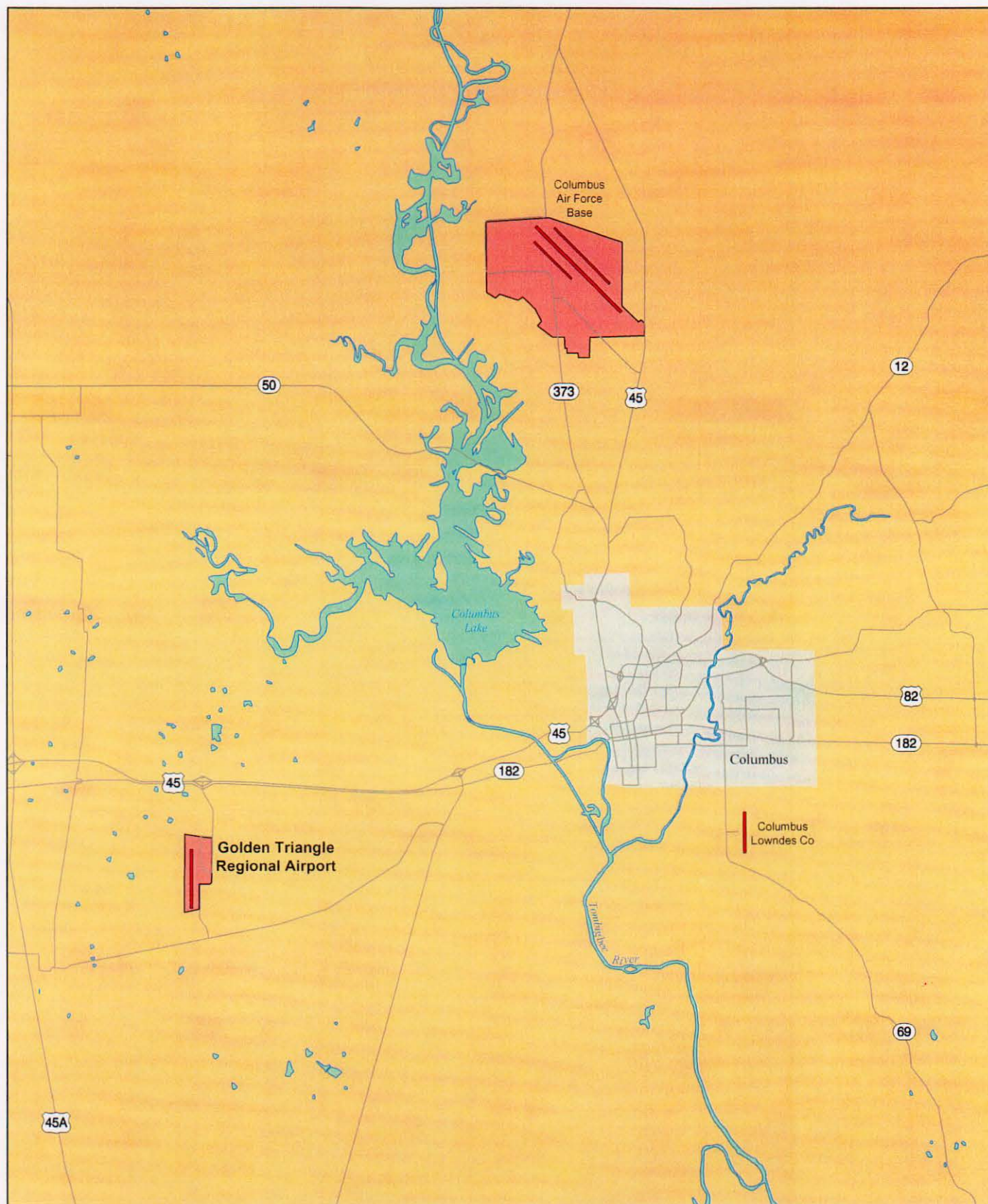
## **1.2 LOCATION OF THE PROPOSED ACTION**

The GTRA is located about 10 miles west of the City of Columbus in Lowndes County, Mississippi, and 13 miles south-southwest of the Base. Columbus AFB also is located in Lowndes County, approximately 10 miles northwest of the City of Columbus. Figure 1.1 indicates the locations of the Base and the GTRA.

## **1.3 SCOPE OF THE ENVIRONMENTAL REVIEW**

The National Environmental Policy Act (NEPA) of 1969, as amended, requires federal agencies to consider environmental consequences in the decision-making process. The President's Council on Environmental Quality (CEQ) issued regulations to implement NEPA that include provisions for both the content and procedural aspects of the required environmental assessment (EA). The Air Force Environmental Impact Analysis Process





# Golden Triangle Regional Airport

## LEGEND

- Runway
- Roadway
- Urbanized Areas



Key Map



# Location of the Golden Triangle Regional Airport and Columbus AFB

Figure 1.1

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(EIAP) is accomplished through adherence to the procedures set forth in CEQ regulations (40 Code of Federal Regulations [CFR] Sections 1500-1508) and 32 CFR 989 (Air Force Environmental Impact Analysis Process), 15 Jul 99, and amended 28 Mar 01. These federal regulations establish both the administrative process and substantive scope of the EIAP designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. CEQ regulations require that an EA:

- Briefly provide evidence and analysis to determine whether the Proposed Action might have significant effects that would require preparation of an environmental impact statement (EIS). If the analysis determines that the environmental effects will not be significant, a finding of no significant impact (FONSI) will be prepared; or
- Facilitate the preparation of an EIS, when required.

### **1.3.1 Identification of Resources Applicable to the Environmental Assessment**

As appropriate, the affected environment and environmental consequences of the Proposed Action and No-Action Alternative may be described in terms of site-specific descriptions or regional overview. Airspace and airfield operations, noise, land use, and environmental justice are assessed in this EA.

For the reasons identified in the following paragraphs, air quality, socioeconomic resources, infrastructure and utilities, water resources, earth resources, biological resources, cultural resources, and hazardous materials and wastes are not analyzed in this EA.

**Air Quality.** A previous EA entitled *Environmental Assessment, Specialized Undergraduate Pilot Training Production Increases, United States Air Force, Air Education and Training Command, Columbus AFB, Mississippi, Laughlin AFB, Texas, Vance AFB, Oklahoma, February 1997*, referred to as the SUPT EA in this document, evaluated the environmental impacts that would result from pilot production at the maximum sustainable levels possible at each base. A FONSI for the action was signed by the Air Force on September 24, 1997. The SUPT EA assessed 244.43 T-1 and 997.54 T-37 daily airfield operations at Columbus AFB, as well as 467.76 T-37 operations at the Shuqualak Auxiliary Airfield. The combined airfield operations at Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA under the Proposed Action assessed in this EA would not exceed the operations assessed by aircraft type at the Base and the Shuqualak Auxiliary Airfield in the SUPT EA. Under the Proposed Action, as many as 20.00 of the T-1 and 660.00 of the T-37 operations accomplished at Columbus AFB and Shuqualak Auxiliary Airfield assessed in the SUPT EA could be accomplished at the GTRA. Table 1.1 reflects the airfield operations proposed for the GTRA as well as the operations estimated for Columbus AFB and Shuqualak Auxiliary Airfield. It is important to note that the GTRA operations listed under the Proposed Action in Table 1.1 reflect the maximum operations for a day. However, if no operations were flown at GTRA for some particular reason (e.g., weather, runway closure, etc.), the operations not



accomplished at GTRA could be flown at Columbus AFB and/or Shuqualak Auxiliary Airfield (T-37 only) at the levels indicated under the SUPT EA columns.

**Table 1.1 T-1 and T-37 Airfield Operations Distribution**

Aircraft	SUPT EA			Proposed Action			
	Columbus AFB	Shuqualak Auxiliary Airfield	Total	Columbus AFB	Shuqualak Auxiliary Airfield	GTRA	Total
T-1	244.43	0.00	244.43	224.43	0.00	20.00	244.43
T-37	997.54	467.76	1,465.30	547.60	257.70	660.00	1,465.30
Total	1,241.97	467.76	1,709.73	772.03	257.70	680.00	1,709.73

Note: Data reflect average daily airfield operations at the respective airfield. The Proposed Action T-37 operations at Columbus AFB and Shuqualak Auxiliary Airfield were estimated by subtracting the proposed GTRA operations from the total operations for the aircraft type (*i.e.*, 1,465.30-660.00=805.30). The respective ratio of operations at Columbus AFB and Shuqualak Auxiliary Airfield to total T-37 operations under the SUPT EA was applied to the remaining operations (*i.e.*, 805.30) to estimate the operations at the Base and auxiliary airfield.

As indicated in Table 1.1, the total operations for each aircraft type at Columbus AFB and GTRA under the Proposed Action, as well as the T-37 operations at Shuqualak Auxiliary Airfield that are not included in the Proposed Action, would not exceed the operations assessed in the SUPT EA. Columbus AFB, the GTRA, and Shuqualak Auxiliary Airfield are all located in Northeast Mississippi Intrastate Air Quality Control Region (AQCR) 135, and the SUPT EA assessed air quality from an AQCR-wide perspective. Since the T-1 and T-37 airfield operations within the AQCR under the Proposed Action that will be assessed in the EA would not exceed that assessed in the SUPT EA, the air emissions within the AQCR from T-1 and T-37 operations at GTRA, Columbus AFB, and Shuqualak Auxiliary Airfield would not exceed the emissions identified in the SUPT EA. No significant air quality impacts were identified in the SUPT EA. The regulatory status of the AQCR has not changed since the SUPT EA was prepared and the FONSI signed. Currently, the AQCR is better than national standards for total suspended particulates and sulfur oxides, unclassifiable for ozone and carbon monoxide, and cannot be classified or better than national standards for nitrogen oxides (USEPA 2003). No combusive emissions would be generated by construction equipment and no fugitive dust would be generated because no construction or earth disturbing activities would occur at the GTRA. In summary, air quality is not assessed in this EA for the reasons presented in this paragraph.

**Socioeconomic Resources, Infrastructure and Utilities, and Water Resources.** There would be no changes to personnel staffing levels at Columbus AFB or GTRA or facility construction. Therefore, no socioeconomic resources (population, housing, employment, and economy) impacts would be anticipated. Because there would be no change in the number of personnel at either the base or GTRA, there would be no change in the use or generation of infrastructure and utilities (water, wastewater, energy, and solid waste). There would be no impacts to surface or ground water features because there would be no change in the use of water or facility construction. For these reasons, socioeconomic resources, infrastructure and utilities, and water resources are not assessed in this EA.



**Earth Resources, Biological Resources, and Cultural Resources.** No new structures would be constructed nor would any existing facilities be modified at GTRA. Therefore, no ground disturbing activities would occur. Additionally, neither the T-1 nor T-37 produces sound pressure levels that would cause structural damage. Therefore, no earth, biological, or cultural resource impacts would be anticipated and the resources are not assessed in this EA.

**Hazardous Materials and Wastes.** No facilities would be constructed nor would aircraft maintenance activities occur at the GTRA. Therefore, no impacts would be anticipated to these resources, which also typically include contaminated sites, asbestos, and lead-based paint. Therefore, these resources are not assessed in this EA.

### **1.3.2 Baseline Condition**

The baseline condition at the GTRA is the baseline from a previous EA entitled *Environmental Assessment, Temporary Use of a Training Airport, January 2003* (USAF 2003), which is referred to as the GTRA EA in this document. The EA evaluated Columbus AFB T-1 and T-37 operations at the airport for the approximate period of February through July 2003 while one runway at the Base was closed for repair. A FONSI for the action was signed by the Air Force on January 28, 2003.

### **1.3.3 Environmental Justice**

Executive Order (EO) 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, was issued by the president on February 11, 1994. In the EO, the president instructed each federal agency to make "achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." Adverse is defined by the Federal Interagency Working Group on environmental justice as "having a deleterious effect on human health or the environment that is significant, unacceptable, or above generally accepted norms." Based on analysis of impacts in this EA, a determination on significance of impacts will be made in a FONSI. If impacts would be significant, the Air Force would either prepare an EIS or not implement the proposal. Accordingly, environmental justice will be addressed either in a FONSI (after determination on significance of impacts) or in a Record of Decision based on an EIS.

## **1.4 APPLICABLE REGULATORY REQUIREMENTS**

No permits would be required by the Proposed Action.

## **1.5 ORGANIZATION OF THE DOCUMENT**

This EA is organized into seven chapters.

<i>Chapter 1</i>	Contains background information; a statement of the purpose of and need for action; the location of the Proposed and Alternative Actions;
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the scope of the environmental review; presents the applicable regulatory requirements; and describes the organization of the EA.

- Chapter 2* Provides a discussion on the development of alternatives; describes the alternatives eliminated from further consideration; details the Proposed Action and No Action Alternative; summarizes the environmental impacts for all alternatives; presents past, present, and reasonably foreseeable actions in the region of influence; and lists mitigation that could reduce the potential for impacts.
- Chapter 3* Contains a general description of the biophysical resources and baseline conditions that potentially could be affected by the Proposed Action or No Action Alternative.
- Chapter 4* Discusses the environmental consequences.
- Chapter 5* Lists preparers of this document.
- Chapter 6* Lists the persons and agencies consulted in the preparation of this EA.
- Chapter 7* Lists the sources of the information used in the preparation of this EA.
- Appendix A* Contains Air Force Form 813.
- Appendix B* Contains interagency and intergovernmental correspondence for environmental planning.



## CHAPTER 2

### ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter has seven sections: a discussion on alternatives development; identification of alternatives eliminated from further consideration; a detailed description of the Proposed Action; a description of the No Action Alternative; discussion of past, present, and reasonably foreseeable future actions in the region of influence; a comparison of the environmental impacts of all alternatives; and discussion of mitigation.

#### 2.1 ALTERNATIVES DEVELOPMENT

Personnel from the 14th Operations Support Squadron (14 OSS), the organization that oversees flying training at Columbus AFB, preliminarily identified six airports as suitable for further consideration as an instrument approach and traffic pattern training airport for T-1 and T-37 aircraft. The 14 OSS supports the training mission by providing air traffic control, airspace management, aircraft scheduling, life support, weather, flight records, intelligence, and quality assurance of contract academic and simulator training and airfield management. The airports were identified by reviewing aeronautical charts for the areas below the Columbus Military Operations Areas (MOA) and the airspaces used for flying training by Columbus AFB aircrews. Table 2.1 lists the six airports identified in the chart review process.

**Table 2.1 Airports Identified for Further Consideration as an Airfield for T-1 and T-37 Training**

Airport
Tupelo Municipal Airport, Tupelo, MS
Tuscaloosa Municipal Airport, Tuscaloosa, AL
Key Field, Meridian, MS
Navy Outlying Field Joe Williams, MS
Golden Triangle Regional Airport, Columbus, MS
Greenwood-LeFlore Municipal Airport, Greenwood, MS

#### 2.2 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Personnel from the 14 OSS developed five criteria for use in selecting a nearby airport at which training could be accomplished and which could thereby improve the efficiency of the T-1 and T-37 portions of the Columbus AFB SUPT program. The following paragraphs describe the criteria used in the selection process.

- **Airport Aircraft Traffic.** The airport must be one at which the T-1 and T-37 would be the primary operating aircraft. Additionally, the airport must not have an existing high use rate by other military or civil aircraft that would limit or restrict use for T-1 and T-37 operations. As a general rule, the airport should not average more than 100 average daily operations by other aircraft. The airport should be able to accommodate as many as 680 average daily T-1 and T-37 operations, the estimated



number of operations to be accomplished at the outlying airfield and which would improve the efficiency of the T-1 and T-37 portions of the SUPT program. This level of operations by Columbus AFB aircraft is necessary should the Shuqualak Auxiliary Airfield be closed for an extended period of time for actions such as airfield repair, as well as for shorter periods (*i.e.*, one day) when the auxiliary airfield could be closed due to weather. The airport must not be near airspace (*i.e.*, MOAs, alert areas, restricted areas, military low-level navigation training routes, or federal airways) or other airports that would have air traffic that would interfere with T-1 and T-37 operations at the training airport. The airspace surrounding the airport must allow the establishment of arrival and departure routes that are compatible with T-1 and T-37 traffic patterns at the airport.

- **Instrument Approaches.** The airport must have instrument approaches that are compatible with the navigation equipment on T-1 and T-37 aircraft.
- **Relationship of the Airport to Columbus AFB.** Locating the airport as close as possible to Columbus AFB would reduce the enroute time between the airport and the base. As a general rule, enroute time to the airport should not be greater than 15 minutes. The desire is to minimize enroute time to training airfields to the maximum extent possible to allow more time to accomplish events such as instrument and visual approach training, takeoffs, and landings. A more distant airport could require extension of the training sortie to offset the increased enroute time. An airport close to Columbus AFB would facilitate the repair of a T-1 or T-37 in the rare situation in which the aircraft would have to make an unscheduled full stop landing due to aircraft equipment malfunction necessitating a landing at the airfield instead of returning to Columbus AFB. The shorter distance would reduce the drive time for aircraft maintenance personnel.
- **Runway Dimensions and Aircraft Arresting Cables.** The minimum runway length and width for T-1 operations is 6,000 feet long and 100 feet wide, while the minimum runway dimensions for T-37 operations is 5,000 feet long and 75 feet wide. Thus, when considering the more restrictive runway length, the airport must be at least 6,000 feet long and 100 feet wide to meet T-1 requirements. No aircraft arresting cables should be installed on the runway because neither the T-1 nor T-37 should operate from runways that have this equipment.
- **Infrastructure.** The airport must have an operating air traffic control tower as well as radar service for arriving and departing aircraft. The airport must have the ability to provide crash, rescue, and fire protection at the level required for T-1 and T-37 aircraft. The airport must have the ability to provide jet fuel should a T-1 or T-37 have to make an unscheduled full stop landing due to aircraft equipment malfunction. Any understandings of agreement between Columbus AFB and the airport must be uncomplicated and easy to execute.

14 OSS personnel gathered the applicable information and data for each airport and compared the data with the five criteria to determine if the airport could be used for T-1 and



T-37 training. An "X" in a criterion column in Table 2.2 indicates the airport *did not meet* the requirements of that specific criterion.

**Table 2.2 Airport Elimination from Further Consideration Matrix**

Airport	Criterion				
	Airport Aircraft Traffic	Instrument Approaches	Relationship of the Airport to Columbus AFB	Runway Dimensions and Aircraft Arresting Cables	Infrastructure
GTRA					
Greenwood-LeFlore	X		X		
Key Field,	X		X		
Navy Outlying Field Joe Williams	X	X	X	X	X
Tupelo	X				
Tuscaloosa	X		X		

Note: An "X" in a criterion column indicates the airport *did not meet* the requirements of that specific criterion.

Based on the criteria and the elimination process described in the preceding paragraphs and as summarized in Table 2.2, the GTRA would be the airport most suitable for use as an nearby T-1 and T-37 training airport. Shuqualak Auxiliary Airfield would continue to be used in conjunction with the GTRA for T-37 visual approach and traffic pattern training.

### 2.3 DESCRIPTION OF THE PROPOSED ACTION

Under the Proposed Action, Columbus AFB T-1 and T-37 aircrews would use the GTRA for practice instrument and visual approach and traffic pattern training. No Columbus AFB aircraft or personnel would be based at GTRA. Crash, rescue, and fire protection for T-1 and T-37 aircraft operations would be provided by the GTRA fire department. The air traffic control tower would be staffed and operated by the GTRA. No aircraft maintenance or refueling activities would occur at the GTRA other than the rare occasion when a T-1 or T-37 aircraft might land at the airport as a result of an emergency that would require maintenance before being capable of a subsequent flight. Routine aircraft maintenance and refueling would be accomplished at Columbus AFB.

A typical T-1 or T-37 sortie would consist of a departure from Columbus AFB on which the aircraft proceeds to the MOA for airmanship maneuvers training or to GTRA for traffic pattern training (or vice versa) and then returns to the base for sortie termination. The Columbus AFB Radar Approach Control (RAPCON) would provide air traffic control services for aircraft proceeding to GTRA by directing the aircraft to points about seven miles to the north of the airport for an instrument approach or five miles to the north or south for a visual approach. From these points, the aircraft would enter the GTRA traffic pattern either by a straight-in instrument approach, a visual straight-in approach initiated from 500 feet



above ground level (AGL), or an arrival at 1,000 feet AGL to an overhead pattern. Aircraft traffic patterns would be accomplished both east and west of Runway 18/36. Overhead patterns would be flown at an altitude of 1,000 feet AGL. The aircraft would depart the airport traffic area by proceeding straight-out to a point about three miles to the north or south of the airport and obtain radar service from the Columbus RAPCON for the return to the base or to proceed to the MOA for airmanship training.

Throughout this document, two terms are used to describe flying operations: sortie; and airfield operation. Each has a distinct meaning and commonly applies to a specific set of activities in particular airspace areas.

- A sortie is a single military aircraft flight from the initial takeoff through the termination landing.
- An airfield operation is the single movement or individual portion of a flight in the airfield environment, such as one departure (takeoff), one arrival (landing), or one transit of the airport traffic area. The airfield environment (*i.e.*, airport traffic area) typically is considered as the airspace allocated to the air traffic control tower and includes the airspace within an approximate 5-mile radius of the airfield and up to 2,500 feet AGL. A touch and go landing, a low approach, or a missed approach consists of two airfield operations, *i.e.*, one arrival and one departure. A closed pattern, which includes touch and go operations, consists of two airfield operations (*i.e.*, one takeoff and one landing), and includes successive takeoffs and landings or low approaches where the aircraft does not exit the traffic pattern. A touch and go landing is accomplished when the aircrew adds power as the aircraft wheels contact the runway on landing and then immediately transitions to a takeoff without stopping. A low approach is similar to a touch and go; however, power is added before the aircraft touches the runway and transitions into a takeoff without landing. The minimum number of airfield operations for one sortie is two operations, one takeoff (departure) and one landing (arrival).

Table 2.3 lists the maximum average daily T-1 and T-37 airfield operations that could occur at the GTRA. The T-37 operations reflect the condition that could occur if the Shuqualak Auxiliary Airfield is unavailable for T-37 operations for an entire day. It is anticipated that flying activity would occur at GTRA five days per week. Operations could occur on weekend days if required to maintain the flying training schedule. No airfield operations would be conducted during the nighttime (10:00 p.m. through 7:00 a.m.).

**Table 2.3 Summary of Average Daily Airfield Operations**

Aircraft	Arrival and Departure Operations	Closed Pattern Operations	Total Operations
T-1	10	10	20
T-37	180	480	660
Total	190	490	680

Note: No T-1 or T-37 airfield operations would occur between 10:00 p.m. and 7:00 a.m.



## **2.4 DESCRIPTION OF THE NO ACTION ALTERNATIVE**

The 14 FTW would not conduct T-1 and T-37 training at the GTRA. Columbus AFB T-1 and T-37 aircrews would continue to use the outlying airfields (to include the Shuqualak Auxiliary Airfield [T-37 only]) currently used for training.

## **2.5 PAST, PRESENT, AND REASONABLY FORESEEABLE ACTIONS IN THE REGION OF INFLUENCE**

A cumulative impact, as defined by the CEQ (40 CFR 1508.7), is the "impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of which agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." GTRA personnel anticipate one action at the airport during the same time T-1 and T-37 aircraft would operate at the airport. Under that action, a helicopter manufacturing facility would be constructed at the airport and helicopters would be test flown at the airfield. Aircraft production is anticipated to begin in March 2004. Approximately 40 helicopters would be produced annually and each helicopter would accomplish two flights for a total of 160 operations (0.65 operation per day based on 245 days per year).

## **2.6 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES**

Table 2.4 summarizes the impacts of the Proposed Action and No Action Alternatives.

## **2.7 MITIGATION**

No mitigation would be required.



**Table 2.4 Summary of Environmental Impacts for the Proposed Action and No Action Alternative**

Resource (Applicable Sections)	Proposed Action	No Action Alternative
Airspace and Airfield Operations (Section 4.2)	The existing standard routings established by Columbus RAPCON and used under the baseline condition for aircraft to proceed to and from the GTRA would accommodate the T-1 and T-37 aircraft. The airspace surrounding the GTRA and the anticipated air traffic control procedures could accommodate the T-1 and T-37 airfield operations without conflict from other aviation activity.	There would be no change from the baseline condition.
Noise (Section 4.3)	There would an additional 2,379 acres and 19 persons within the day-night average sound level (DNL) 65 A-weighted sound pressure levels (dBA) and greater noise exposure area. The maximum sound exposure level at any of the four specific analysis points from T-1 and T-37 operations would be 103 dBA, which is about 6 dBA less than the baseline condition. There would be no noise induced hearing loss or nonauditory health effects. There would be no change from the baseline condition sleep awakenings because the type and number of civil aircraft operations would be the same as the baseline, and T-1 and T-37 aircraft would not operate during normal nighttime sleep periods. However, those individuals who sleep between 7:00 a.m. and 10:00 p.m. likely would be affected just as those persons who sleep during nighttime sleep periods.	There would be no change from the baseline condition.
Land Use (Section 4.4)	Although the noise exposure area would increase, the additionally exposed areas would continue to be farmland and no other land use types would be exposed to aircraft noise. There would be no change to land use patterns and categories.	There would be no change from the baseline condition.



## **CHAPTER 3**

### **AFFECTED ENVIRONMENT**

This chapter describes the existing environmental resources that could be affected by or could affect the Proposed Action and No Action Alternative. Only those specific resources relevant to the potential impacts are described in detail.

#### **3.1 MISSION**

The GTRA is operated by the Golden Triangle Airport Commission, which includes representatives from the Mississippi cities of Columbus, Starkville, and West Point, as well as Lowndes County. Commercial passenger service is provided by on air carrier. The GTRA offers charter flights, air freight service, flight/pilot training, aircraft maintenance, and other aviation needs.

#### **3.2 AIRSPACE AND AIRFIELD OPERATIONS**

Airspace is a finite resource defined vertically, horizontally, and temporally. As such, it must be managed and used in a manner that best serves the commercial, general, and military aviation needs. The Federal Aviation Administration (FAA) is responsible for overall management of airspace and has established different airspace designations to protect aircraft while operating to or from an airport, transiting enroute between airports, or operating within "special use" areas identified for defense-related purposes. Rules of flight and air traffic control procedures published as Federal Aviation Regulations (FAR) have been established to govern how aircraft must operate within each type of designated airspace. The FARs apply to both civil and military aircraft operations unless the FAA grants the military service an exemption or the FAR specifically excludes military operations. All aircraft operate under either Instrument Flight Rules or Visual Flight Rules.

The airspace region of influence (ROI) includes airspace within an approximate 5-mile radius of the GTRA and up to about 2,500 feet AGL. The Columbus AFB RAPCON provides radar service to aircraft proceeding to or departing from the GTRA. The FAA's Memphis Air Route Traffic Control Center provides this service when the Columbus AFB RAPCON is not operating. The Oktibbeha Airport is located about 5 miles northwest of the GTRA. There are no military low-level navigation training routes or special use airspaces within the ROI airspace. One federal airway passes through the ROI airspace.

The ROI airspace is designated as Class D airspace when the air traffic control tower is operating and Class E at other times. Class D airspace is controlled by air traffic control tower personnel and used for arrivals, departures, and closed patterns. Class E airspace is that airspace extending upward from either the surface or a designated altitude to the overlying or adjacent controlled airspace up to but not including 18,000 feet above mean sea level, and excluding other airspace classes. One precision and two nonprecision instrument approach procedures are published for the airport for use in aircraft approaches during low ceiling



and/or visibility conditions. Runway 18/36 is 6,497 feet long and 150 feet wide. There are 16 civil aircraft based at the GTRA.

Table 3.1 lists the baseline condition airfield operations for the GTRA. Both the Learjet and turboprop categories include aircraft used for commercial passengers as well as general aviation. The twin and single engine categories include general aviation aircraft operated for personal use as well as flying training conducted at the airport.

**Table 3.1 Baseline Airfield Operations, Golden Triangle Regional Airport**

Aircraft	Arrival and Departure Operations	Closed Pattern Operations	Total Operations
Learjet	19.84	0.00	19.84
Turboprop	24.00	0.00	24.00
Twin Engine	4.68	0.84	5.52
Single Engine	4.66	0.84	5.50
Total	53.18	1.68	54.86

Source: Ratliff 2002.

### 3.3 NOISE

Aviation-related activities at the GTRA dominate the acoustic environment. Vehicular activity associated with airfield operations contributes little to the general background noise levels around the airport. Thus, vehicle-generated noise will not be further analyzed.

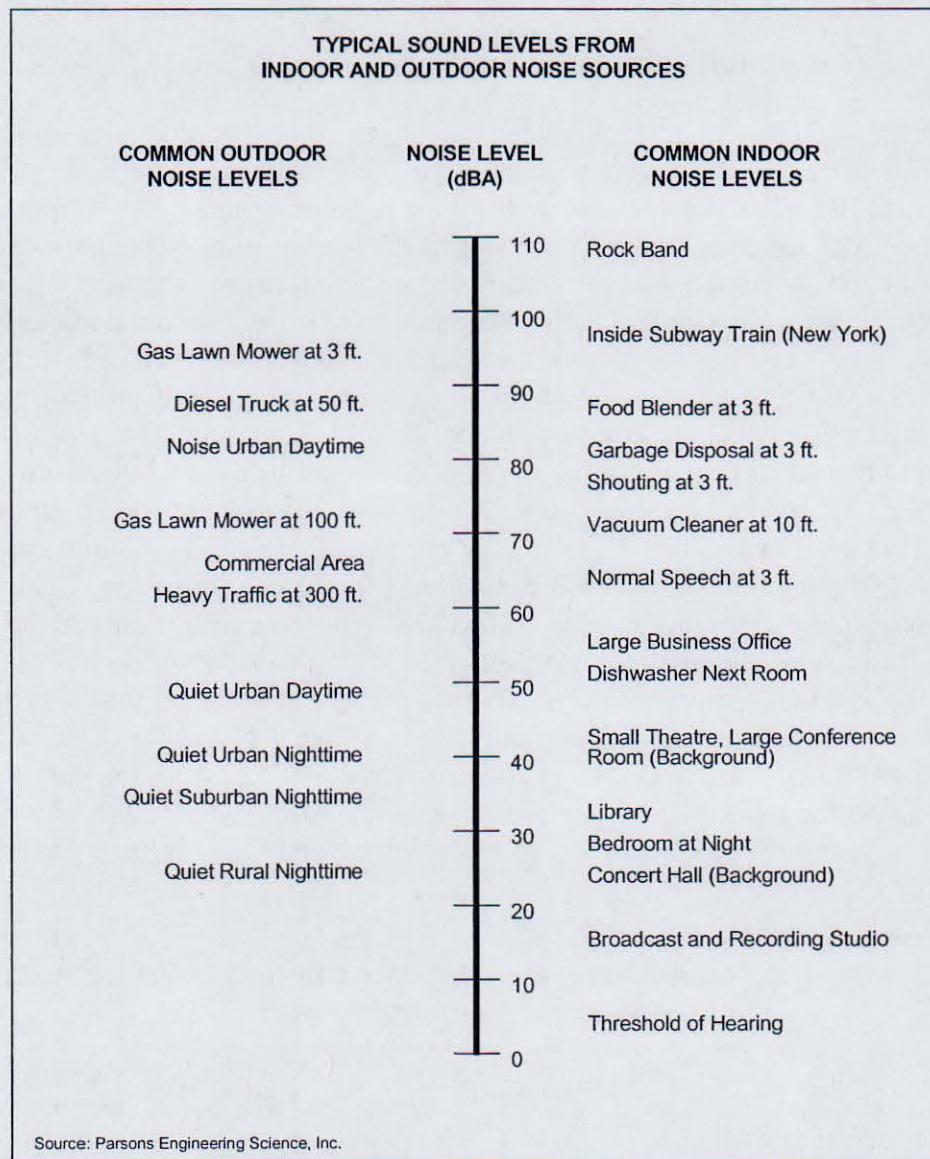
The characteristics of sound include parameters such as amplitude (loudness), frequency (pitch), and duration. Sound varies over an extremely large range of amplitudes. The decibel (dB) is the accepted standard unit for describing levels of sound. Decibels are expressed in logarithmic units to account for the variations in amplitude. On the decibel scale, an increase of 3 dB represents a doubling of sound energy. A difference on the order of 10 dB represents a subjective doubling of loudness.

Different sounds have different frequency contents. Because the human ear is not equally sensitive to sound at all frequencies, a frequency-dependent adjustment, called A-weighting, was developed to measure sound similar to the way the human hearing system responds. The adjustments in amplitude, established by the American National Standards Institute (ANSI 1983), are applied to the frequency content of the sound. Figure 3.1 depicts typical A-weighted sound pressure levels (dBA) for various sources. As indicated in the figure, 65 dBA is equivalent to normal speech at a distance of 3 feet.

Noise is defined as sound that is undesirable because it interferes with speech and hearing, is intense enough to damage hearing, or is otherwise annoying. Noise levels change with time and the distance of the receptor from the noise source.



**Figure 3.1 Typical A-Weighted Noise Levels**



### 3.3.1 Sound Metrics and Analysis Methodology

A variety of metrics may be used to assess the impacts of noise. Depending on the specific situation, appropriate analysis may include single event or averaged metrics. Single event metrics are used to assess the potential impacts of noise on structures and animals, and are sometimes used in the assessment of human effects. Sound Exposure Level (SEL), a single event metric, is commonly used to evaluate sleep disturbance. Averaged noise metrics are useful in characterizing the overall noise environment and are primarily used to analyze community (population) exposure to noise. Averaged noise exposure is expressed as the DNL



metric. The United States Environmental Protection Agency (USEPA) selected DNL as the uniform descriptor of averaged noise exposure. Subsequently, Federal agencies, including the DoD, adopted DNL for expressing averaged sound.

### 3.3.1.1 Single Event Sound Metrics

Although the highest dBA level measured during an event (*i.e.*, maximum sound level or  $L_{\max}$ ) is the most easily understood descriptor for a noise event, alone it provides little information. Specifically, it provides no information concerning either the duration of the event or the amount of sound energy. Thus, SEL, which is a measure of the physical energy of the noise event and accounts for both intensity and duration, is used for single event noise analysis. Subjective tests indicate that human response to noise is a function not only of the maximum level, but also of the duration of the event and its variation with respect to time. Evidence indicates that two noise events with equal sound energy will produce the same response. For example, a noise at a constant level of 85 dBA lasting for 10 seconds would be judged to be equally as annoying as a noise event at a constant level of 82 dBA and duration of 20 seconds (*i.e.*, 3 dBA decrease equals one half the sound energy but lasting for twice the time period). This is known as the "equal energy principle." The SEL value represents the A-weighted level of a constant sound with a duration of 1 second, providing an amount of sound energy equal to the event under consideration. By definition, SEL values are referenced to a duration of 1 second and should not be confused with either the average or maximum noise levels associated with a specific event. When an event lasts longer than 1 second, the SEL value will be higher than the  $L_{\max}$  of the event. Table 3.2 provides SEL values for representative aircraft operating at GTRA at a distance of 1,000 feet from the aircraft during takeoff. The  $L_{\max}$  would typically be 5 to 10 dBA below the SEL value for aircraft overflight. SEL is used in this report when discussing sleep disturbance and  $L_{\max}$  is used for effects on structures.

**Table 3.2 Sound Exposure Level and Maximum Sound Level for Aircraft at Golden Triangle Regional Airport**

Aircraft Type	Sound Exposure (SEL) (dBA)	Maximum Sound Level ( $L_{\max}$ ) (dBA)*
Learjet	109	99
Turboprop	87	77

Note: At nominal takeoff thrust and airspeed and at a slant distance of 1,000 feet from the aircraft.

The frequency, sound level, and duration of aircraft overflight noise events depend on variables including aircraft type and model (engine type), aircraft configuration (*i.e.*, flaps, landing gear, *etc.*), engine power setting, aircraft speed, distance between the observer and the aircraft flight track, temperature, humidity, and altitude above sea level. Therefore, extensive noise data are collected for various types of aircraft/engines at different power settings and phases of flight. This extensive database of aircraft noise data provides a basis for calculation of average individual-event sound descriptors for specific aircraft operations at any location

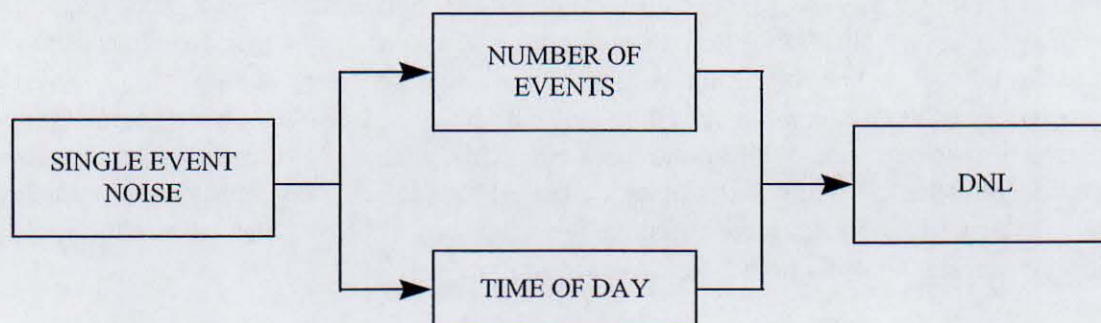


under varying meteorological conditions. The reference values are adjusted to any location by applying appropriate corrections for the variables.

### 3.3.1.2 Averaged Noise Metrics

Single event analysis has a major shortcoming -- single event metrics do not describe the overall noise environment. DNL measures the total noise environment. DNL is the sum of the noise energy for all aircraft noise producing events over a 24-hour period, with a 10 dBA adjustment added to each nighttime event (*i.e.*, between 10:00 p.m. and 7:00 a.m.). Figure 3.2 depicts the relationship of the single event, the number of events, the time of day, and DNL. This adjustment is an effort to account for increased human sensitivity to nighttime noise events. The summing of sound during a 24-hour period does not ignore the louder single events, it actually tends to emphasize both the sound level and number of those events. The logarithmic nature of the dB unit causes sound levels of the loudest events to control the 24 hour average.

Figure 3.2 Day-Night Average A-Weighted Sound Level



DNL is an accepted unit for quantifying annoyance to humans from general environmental noise, including aircraft noise. The Federal Interagency Committee on Urban Noise (FICUN) developed land use compatibility guidelines for noise exposure areas. Based upon these FICUN guidelines, the FAA developed recommended land uses in aircraft noise exposure areas. The DoD uses the DNL descriptor as the method to estimate the amount of exposure to aircraft noise and predict impacts. Land use compatibility and incompatibility are determined by comparing the predicted DNL level at a site with the recommended land uses.

### 3.3.1.3 Noise Analysis Methodology

The noise analysis methodology used for airfield operations in this EA is based on the noise contours produced by the NOISEMAP noise model. NOISEMAP is a suite of computer programs developed by the Air Force to predict noise exposure in the vicinity of an airfield due to aircraft flight, maintenance, and ground run-up operations. Data describing flight tracks and flight profile use, power settings, ground run-up information by type of aircraft/engine, and meteorological variables are assembled and processed for input into



NOISEMAP. The model uses this information to calculate SEL and DNL values at points on a regularly spaced grid surrounding the airfield. A plotting program generates contour lines connecting points of equal DNL values in a manner similar to elevation contours shown on topographic maps. Contours are generated as 5 dB intervals beginning at DNL 65 dBA, the maximum level considered acceptable for unrestricted residential use. The contours produced by NOISEMAP are used in the averaged noise analysis sections in this EA. While there is no technical reason why a lower level cannot be measured or calculated for comparison purposes, DNL 65 dBA:

- provides a valid basis for comparing and assessing community noise effects; and
- represents a noise exposure level which is normally dominated by aircraft noise and not other community or nearby highway noise sources.

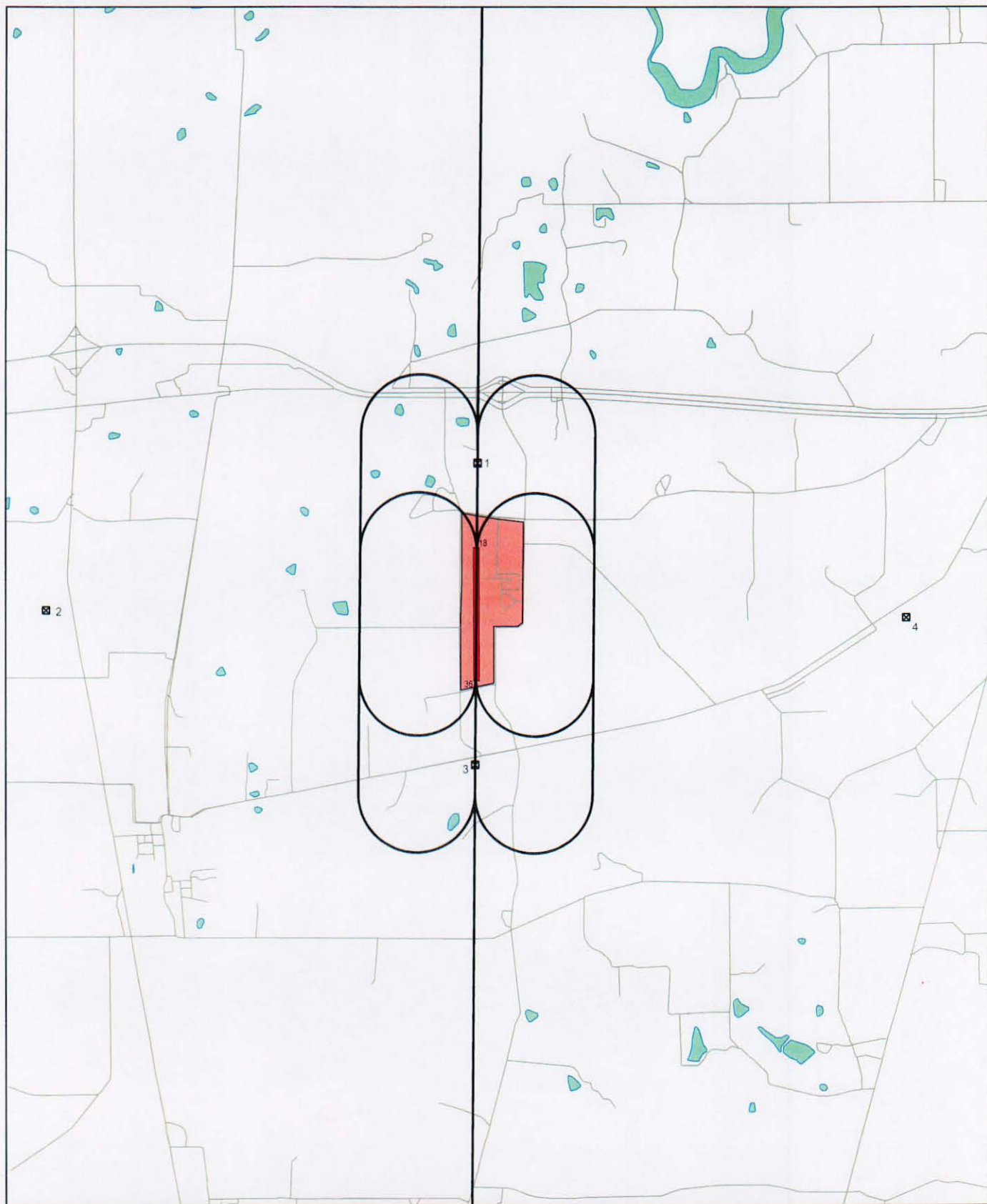
### **3.3.2 Baseline Noise Analysis**

The primary source of noise in the vicinity of GTRA is from airfield operations. Approximately 16 percent of the operations occur during the nighttime (10:00 p.m. to 7:00 a.m.). Figure 3.3 shows the aircraft ground tracks and Figure 3.4 depicts the noise exposure area for the baseline condition. Residences and public use facilities such as schools, libraries, hospitals, churches, and nursing homes are more sensitive to noise than those in other types of facilities because the activities that take place in these structures require lower sound levels. However, none of these facilities occur in the areas off the ends of the runway or below the flight tracks. Thus, two points off the ends of the runway and two points below the closed pattern flight tracks were selected for analysis. Table 3.3 lists the outdoor SEL values for the specific analysis points for this assessment.

#### **3.3.2.1 Single Event Noise Analysis**

Single event analysis is conducted to evaluate sleep disturbance and effects on structures. Figures 3.3 and 3.4 show four specific analysis points in the area surrounding the airfield. These points are residences and other facilities that may be sensitive to noise from single aircraft flyover events.





### Golden Triangle Regional Airport LEGEND

- |                |         |                                  |
|----------------|---------|----------------------------------|
| Flight Track   | Runway  | Golden Triangle Regional Airport |
| Analysis Point | Roadway |                                  |



**Baseline Aircraft Ground  
Tracks  
Golden Triangle Regional  
Airport**  
Figure 3.3



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### Golden Triangle Regional Airport

#### LEGEND

- DNL 65 dB Contour
- DNL 70 dB Contour
- DNL 75 dB Contour
- DNL 80 dB Contour

- Runway
- Roadway
- Analysis Point

Golden Triangle Regional Airport



### Baseline Noise Contours Golden Triangle Regional Airport

Figure 3.4



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**Table 3.3 Baseline SEL from Airfield Operations at Analysis Points,  
Golden Triangle Regional Airport**

Analysis Point Number	Description	SEL (dBA)	Aircraft
1	Below North Extended Runway Centerline	109	Learjet
2	Below West Closed Pattern	60	Learjet
3	Below South Extended Runway Centerline	109	Learjet
4	Below East Closed Pattern	60	Learjet

Note: The specific analysis point number and description correspond to the point as reflected on the noise contour and aircraft ground track figures. Aircraft column reflects the aircraft operating at the GTRA that generates the maximum estimated SEL for the specific analysis point.

### *Sleep Disturbance*

Noise from low-flying aircraft arriving at and departing from an airfield at night may cause sleep disturbance. DNL incorporates consideration of sleep disturbance by assigning a 10 dBA penalty to the SELs of nighttime noise events (10:00 p.m. to 7:00 a.m.). However, single noise events, not average sound levels, correlate better with sleep disturbance.

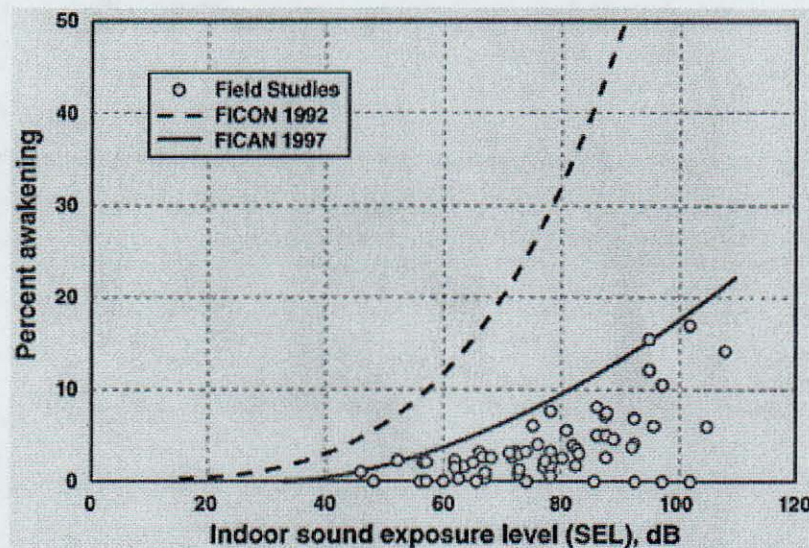
Studies have estimated the percentage of awakenings that may be experienced by people exposed to different SELs. Based on those studies, the Federal Interagency Committee on Noise (FICON) in 1992 recommended use of an interim dose-response curve to predict the percentage of the exposed population expected to be awakened as a function of the exposure to single-event noise levels expressed in terms of SEL. Since the adoption of the interim curve in 1992, substantial field research has been completed using a variety of test methods and a number of locations. The data from these studies show a consistent pattern, with a smaller percentage of the exposed population expected to be behaviorally awakened than had been shown in laboratory studies.

The Federal Interagency Committee on Aviation Noise (FICAN) (formed in 1993 as recommended by FICON) now recommends a new dose-response curve for predicting awakening. Figure 3.5 compares the FICAN recommendation of 1997 to the FICON recommendation of 1992. FICAN takes the conservative position that, because the adopted curve represents the upper limit of the data presented, it should be interpreted as predicting the maximum percentage of the exposed population expected to be awakened. Based on this new position, it is estimated that outdoor SELs of 80 to 100 dBA could result in 4 to 10 percent awakenings in the exposed population. Noise must penetrate the residence to disturb sleep. Interior noise levels are lower than exterior levels due to the attenuation of the sound energy by the structure. The amount of attenuation provided by the building is dependent on the type of construction and whether the windows are open or closed. The approximate national



average attenuation factors are 15 dBs for open windows and 25 dBs for closed windows. Twenty dBA is conservatively used to estimate attenuation for a typical dwelling unit (USEPA 1974).

**Figure 3.5 Recommended Sleep Disturbance Dose-Response Relationship**



### *Effects of Noise on Structures*

Possible noise-related impacts on structures should be considered in the context of accepted research results. The recent development of larger commercial and military aircraft has prompted research into the effects of noise vibrations on both modern and historic structures.

Some building materials are more sensitive than others to external pressures and induced vibrations. Windows with large panes of glass are most vulnerable. Plaster walls in frame buildings are susceptible to cracking. Components that are least likely to experience damage are masonry walls of stone, concrete block, adobe, or brick. Appropriate building design can also reduce the possibility of damage from vibration. Research has not proven categorically that old buildings are more vulnerable to vibration than newer buildings, but prudence dictates special consideration be given to unique structures of historical significance. Table 3.4 lists the effects of sound on structures.



**Table 3.4 Effects of Sound on Structures**

Decibels	psf <sup>a</sup>	Effects Summary	
0-127	0-1	Typical community exposures  (generally below 2 psf)	No damage to structures No significant public reaction
127-131	1.0-1.5		Rare minor damage Some public reaction
131-140	1.5-4.0	Window damage possible, increasing public reaction, particularly at night	
140-146	4.0-8.0 <sup>b</sup>	Incipient damage to structures	
146-171	8.0-144.0	Measured booms at minimum altitudes experienced by humans; no injury	
185	720.0	Estimated threshold for eardrum rupture (maximum overpressure)	
194	2,160.0	Estimated threshold for lung damage (maximum overpressure)	

a psf = pounds per square foot.

With the exception of window glass breakage, booms less than 11 psf should not damage "building structures in good repair" (Clarkson and Mayes 1972).

Source: Speakman 1992.

### 3.3.2.2 Averaged Noise Analysis

Figure 3.4 shows DNL noise contours. The contours are long and narrow because of the greater number of straight-in and straight-out arrivals and departures than closed patterns. The DNL 65 dBA contour extends about 1.5 miles north and 1.3 miles south of the respective runway end.

Noise annoyance is defined by the USEPA as any negative subjective reaction to noise by an individual or group. Table 3.5 presents results of over a dozen studies on the relationship between noise and annoyance levels. This relationship was suggested by Schultz (1978) and was reevaluated (Fidell *et al.* 1988) for use in describing people's reactions to environmental noise. These data provide a perspective on the level of annoyance that might be anticipated. For example, 12 to 22 percent of people exposed on a long-term basis to DNL 65 to 70 dBA are expected to be highly annoyed by noise events. The study results summarized in Table 3.5 were based on outdoor noise levels.

**Table 3.5 Theoretical Percentage of Population Highly Annoyed by Noise Exposure**

DNL Intervals in dBA	Percentage of Persons Highly Annoyed
<65	<12
65-70	12-22
70-75	22-37
75-80	37-54
>80	>54

Note: Noise impacts on individuals vary as do individual reaction to noise. This is a general prediction of the percent community highly annoyed based on environmental noise surveys conducted around the world.

Source: Adapted from NAS 1977



Table 3.6 lists the number of acres and people within the DNL 65 dBA and greater noise exposure area for the baseline condition, as well as the estimated number of people who might be highly annoyed by noise at those levels.

**Table 3.6 Baseline Noise Exposure, Golden Triangle Regional Airport**

Category	DNL Noise Zone (dBA)				Total
	65-70	70-75	75-80	80+	
Acres	553	137	91	40	821
People	1	0	0	0	1
People Highly Annoyed	0	0	0	0	0

*Note:* It was assumed that population was equally distributed within a census block-group area from the United States Census Bureau 2000 census. Using this assumption, the total acreage and population in each block-group surrounding the GTRA was collected and assessed. The number of acres of land in each noise zone was divided by the number of acres of land in each census block-group to determine what portion of the census block-group was contained within each noise zone. The population total in each census block-group was then multiplied by this ratio to estimate affected population. The number of people highly annoyed was determined by multiplying the population for the noise zone by the higher number of the range for the noise zone from Table 3.5. The population determination and people highly annoyed processes were used throughout the EA.

Elevated noise levels can interfere with speech, cause annoyance or communication difficulties, and disrupt sleep. Based on a variety of studies, there is a good probability of frequent speech disruption at DNL or DNL 75 dBA. This level produces ratings of “barely acceptable” for intelligibility of spoken communication (AIHA 1996).

### 3.4 LAND USE

Land use around GTRA consists primarily of rural farmland with residences scattered along the county roads and highways. The farmland is used for agricultural activities such as cropland and grazing, while the land not used for agriculture is wooded. The only concentration of urban development in the area around the GTRA is the City of Artesia, which is about 4 miles west-southwest of the GTRA. The city had a population of 498 persons according to the 2000 census. An industrial park is located about 1 mile east of the GTRA. The Mississippi Sheriffs Boy’s Ranch is located about 1.5 miles northeast of the airfield.



## CHAPTER 4 ENVIRONMENTAL CONSEQUENCES

This chapter provides the scientific and analytic basis for the environmental consequences of the Proposed Action and No Action Alternative.

### 4.1 MISSION

Implementation of the Proposed Action would not impair the regularly scheduled air carrier operations or the general aviation activities that occur at GTRA.

### 4.2 AIRSPACE AND AIRFIELD OPERATIONS

Impacts associated with the Proposed Action are assessed by comparing projected military flight operations and proposed airspace utilization with baseline conditions, to include civil aviation activities. This EA analyzes the capability of the affected airspace elements to accommodate the projected level of military and civil flight activities, and determining whether such changes would have an adverse impact on overall use of the airspace. This includes consideration of such factors as the interaction of the proposed use of specific airspace with adjacent controlled, uncontrolled, or other military training airspace; possible impacts on other nonparticipating civil and military aircraft operations; and possible impacts on civil airports underlying or near the airspace projected for use in the Proposed Action.

#### 4.2.1 Proposed Action

Table 4.1 lists the projected average daily airfield operations for T-1, T-37, and civil aircraft at GTRA.

**Table 4.1 Proposed Action Airfield Operations, Golden Triangle Regional Airport**

Aircraft	Arrival and Departure Operations	Closed Pattern Operations	Total Operations
T-1	10.00	10.00	20.00
T-37	180.00	480.00	660.00
Civil Aircraft	53.18	1.68	54.86
Total	243.18	491.68	734.86

Note: Table 3.1 details the civil aircraft airfield operations.

Other than the closed box pattern to outside downwind, the altitudes and dimensions of T-1 and T-37 traffic patterns would be very similar to those flown by the civil aircraft under the baseline condition. The T-1 and T-37 aircraft tracks would avoid overflying residential



areas to the maximum extent possible. T-1 and T-37 aircraft operations at GTRA would follow five basic flight patterns (see Figure 4.1).

- Straight-out takeoff/departure;
- Straight-in arrival/landing/overhead pattern;
- Overhead pattern;
- Closed pattern to the inside downwind; and
- Closed box pattern to the outside downwind.

The existing standard routings established by Columbus RAPCON and used under the baseline condition for aircraft to proceed to and from GTRA would accommodate T-1 and T-37 aircraft. Likewise, the T-1 and T-37 on-board navigation equipment is compatible with the instrument approach procedures established for the GTRA. The airspace within the airport ROI and the existing air traffic control procedures could accommodate the T-1 and T-37 airfield operations without conflict from other aviation activity. The airfield has the capacity to support the projected level and type of operations.

#### **4.2.2 No Action Alternative**

No T-1 or T-37 airfield operations would occur at the airport. All Air Force activity would occur at Columbus AFB. Airfield and airspace operations at the GTRA would continue at the baseline levels.

#### **4.2.3 Mitigation**

Mitigation would not be necessary.

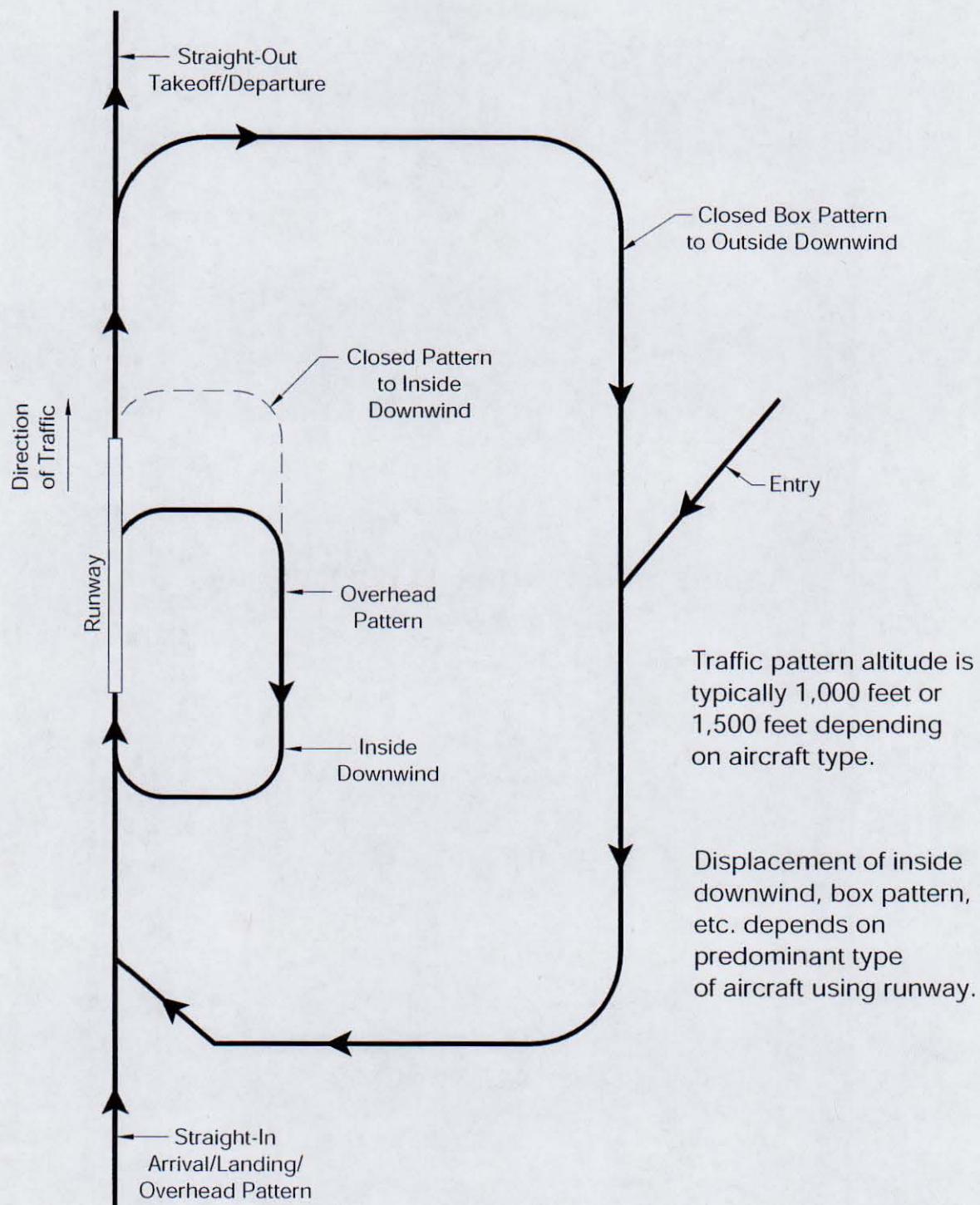
#### **4.2.4 Cumulative Impacts**

Each of the 40 helicopters produced at the production plant at GTRA under the other action would accomplish two flights for a total of 160 annual airfield operations (0.65 operation per day). The addition of less than one airfield operation per day, when combined with the Proposed Action and on-going civil operations, would not impact operations or air traffic control at the airport.

### **4.3 NOISE**

One of the principal environmental concerns resulting from airfield operations is noise. There are several characteristics of noise, including loudness (amplitude), sharpness or pitch (sound-wave frequency), and the length of time over which the noise is transmitted to a receptor (duration). The noise most often experienced as a result of airfield operations is generally moderately loud, high-pitched, and lasting for up to several minutes per event (e.g., takeoffs, landings, and overflight). The overall level of noise perceived by an individual





Golden Triangle Regional Airport

**Typical T-1 and T-37  
Aircraft Traffic Patterns**

Figure 4.1

742927 GT-PAT.DWG

Not to Scale



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depends upon the distance from the source. The noise figures in this EA illustrate the calculated noise contours for the airfield and the surrounding areas. These contours consider loudness, pitch, duration, flight track profiles, and distance for the various aircraft operations generated during a 24-hour day. These noises are calculated in terms of SEL dBA or maximum sound pressure for single event analysis and DNL dBA for averaged noise analysis.

Several items were examined in evaluating potential noise impacts, including (1) the degree to which noise levels generated by airfield operation activities were different than the baseline noise levels, (2) the degree to which there may be annoyance and/or activity interference, and (3) the areas where noise-sensitive receptors might be exposed to noise above DNL 65 dBA.

#### 4.3.1 Proposed Action

Figure 4.2 depicts the flight tracks for T-1 and T-37 operations at the GTRA as well as the baseline civil operations. Figure 4.3 depicts the noise exposure area based on the T-1, T-37, and civil aircraft operations identified in Table 4.1. No T-1 or T-37 airfield operations would be conducted during the nighttime (10:00 p.m. and 7:00 a.m.). The overall number of nighttime operations would be about 0.3 percent. Figure 4.4 compares the Proposed Action noise contours with the baseline contours.

The Proposed Action contours extend about 1.5 miles farther to the north and 2.0 miles farther to the south along the runway centerline when compared to the baseline. Figure 4.3 shows that noise exposure continues to be influenced primarily by the straight-in arrivals and departures. When compared to the baseline, the influence of the additional closed pattern operations is indicated by the widening of the contours at distances about 1.5 miles off both ends of the runway.

Table 4.2 provides SEL and  $L_{max}$  values for T-1 and T-37 aircraft at GTRA at a distance of 1,000 feet from the aircraft. Table 4.3 lists the SEL for the T-1 and T-37 aircraft at the specific analysis points. Table 4.4 compares the land area and population exposed to noise of DNL 65 dBA and greater for the Proposed Action with the baseline condition, as well as the population potentially highly annoyed for both conditions.

**Table 4.2 Sound Exposure Level and Maximum Sound Level for T-1 and T-37 Aircraft at Golden Triangle Regional Airport Aircraft**

Aircraft Type	Sound Exposure (SEL) (dBA)	Maximum Sound Level ( $L_{max}$ ) (dBA)*
T-1	97	87
T-37	97	87

Note: At nominal takeoff thrust and airspeed and at a slant distance of 1,000 feet from the aircraft.



**Table 4.3 SEL from Proposed T-1 and T-37 Airfield Operations at Specific Analysis Points, Golden Triangle Regional Airport**

Analysis Point Number	Description	SEL (dBA)/Aircraft	
		T-1	T-37
1	Below North Extended Runway Centerline	103	102
2	Below West Closed Pattern	97	97
3	Below South Extended Runway Centerline	103	102
4	Below East Closed Pattern	97	97

Note: The specific analysis point number and description correspond to the point as reflected on the noise contour and aircraft ground track figures. Aircraft column reflects the SEL generated by T-1 and T-37 aircraft at the specific analysis point.

#### 4.3.1.1 Single Event Noise Analysis

##### *Sound Exposure Level*

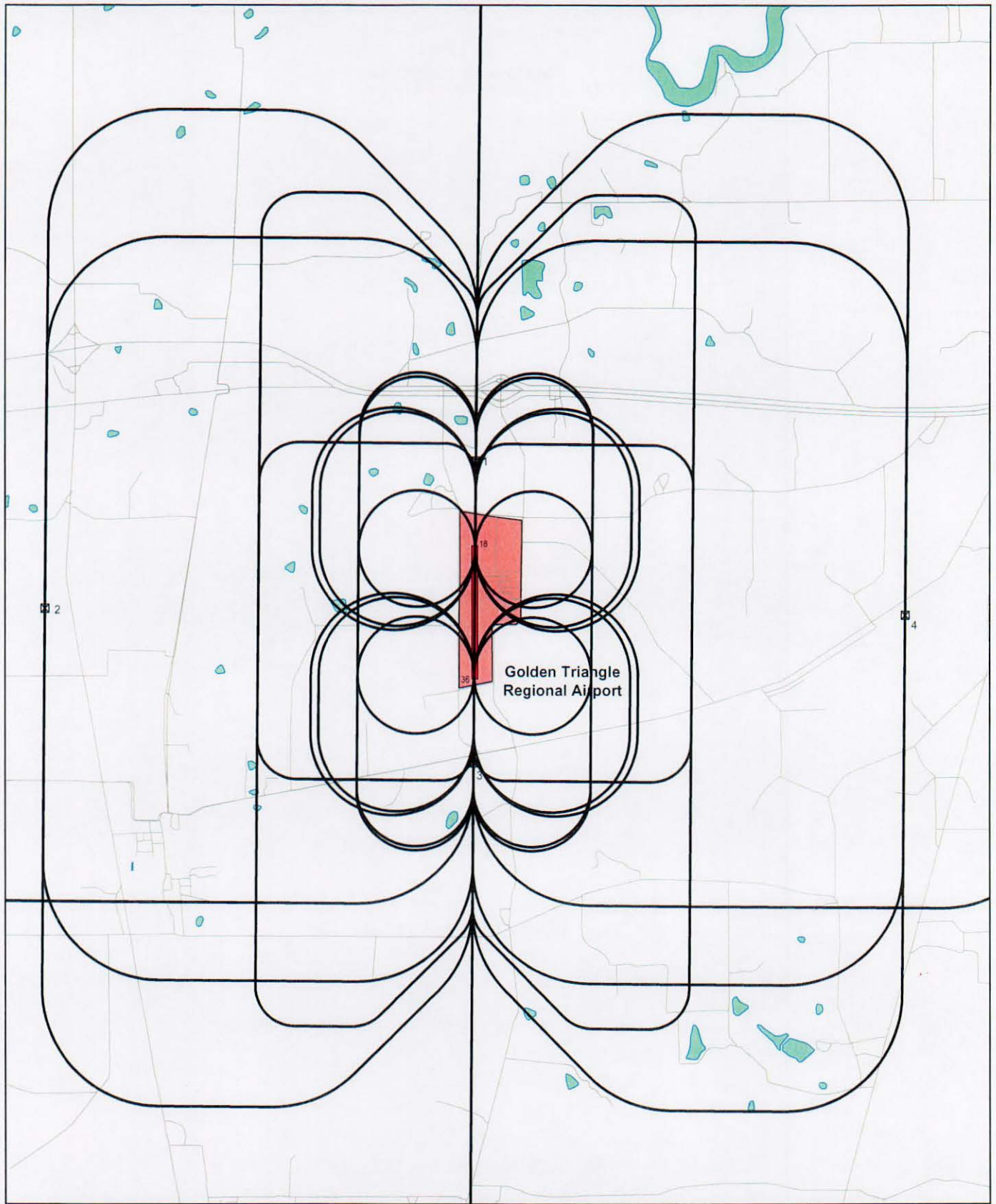
Each aircraft overflight produces a single-event noise level, presented as SEL. Four representative specific points were selected to calculate the SEL from aircraft overflight: runway ends and below the closed pattern flight tracks. The noise contour and aircraft ground track figures show the locations of the specific analysis points.

The civil aircraft types and operations for the baseline would continue under the Proposed Action. Since SEL is related to single overflight, there would be no changes for the SEL for the baseline aircraft that continue to operate under the Proposed Action (see Tables 3.2 and 3.3). Tables 4.2 and 4.3 present the SEL for T-1 and T-37 operations under the Proposed Action. The SEL from T-1 and T-37 operations at the points north and south of the runway would be about 6 or 7 dBA less than that from Learjet operations under the baseline (see Tables 3.3 and 4.3).

##### *Sleep Disturbance*

Based on FICAN recommendations, outdoor SELs of 80 to 100 dBA (65 to 85 dBA indoors) could result in 4 to 10 percent awakenings, respectively, in the exposed population. Over the course of sleeping, different individuals might be awakened by different events, and some individuals might be awakened more than once. Individuals in residences below the arrival and departure aircraft tracks, and closer to the runway ends (*i.e.*, where aircraft are closer to the ground and at higher power settings), would be the most likely to be exposed to indoor SEL of





### Golden Triangle Regional Airport LEGEND

- |                |         |                                  |
|----------------|---------|----------------------------------|
| Flight Track   | Runway  | Golden Triangle Regional Airport |
| Analysis Point | Roadway |                                  |

7,000 0 7,000  
Feet



**Proposed Action Aircraft  
Ground Tracks,  
Golden Triangle Regional  
Airport**  
Figure 4.2



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### Golden Triangle Regional Airport LEGEND

- DNL 65 dB Contour
- DNL 70 dB Contour
- DNL 75 dB Contour
- DNL 80 dB Contour

- Runway
- Roadway
- X Analysis Point

Golden Triangle Regional Airport

5,000 0 5,000  
Feet



**Proposed Action Noise  
Contours,  
Golden Triangle Regional  
Airport**  
Figure 4.3



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### Golden Triangle Regional Airport

#### LEGEND

- Baseline Noise Contours
- Proposed Action Noise Contours
- Runway
- Roadway
- Golden Triangle Regional Airport

5,000 0 5,000  
Feet



### Comparison of Baseline and Proposed Action Noise Contours, Golden Triangle Regional Airport

Figure 4.4



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**Table 4.4 Summary of Land Area and Population Exposed to, and Population Potentially Highly Annoyed by, DNL 65 dBA and Greater, Golden Triangle Regional Airport**

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Land Area					
Baseline Acres	553	137	91	40	821
Proposed Action	1,657	886	412	245	3,200
Change	+1,104	+749	+321	+205	+2,379
Percent Change	+200%	+547%	+353%	+513%	+290%
Population					
Baseline Population	1	0	0	0	1
Proposed Action	14	5	1	0	20
Change	+13	+5	+1	0	+19
Percent Change	1,300%	--	--	--	1,900%
Highly Annoyed					
Baseline Population	0	0	0	0	0
Proposed Action	3	2	1	0	6
Change	+3	+2	+1	0	+6
Percent Change	--	--	--	--	--

Note: The methodology explained in the Table 3.6 footnote was used to determine population and population highly annoyed for the Proposed Action.

65 to 85 dBA during normal sleep periods (10:00 p.m. to 7:00 a.m.). As previously mentioned, a 10 dBA adjustment is added to each nighttime (10:00 p.m. to 7:00 a.m.) airfield operation to account for increased human sensitivity to nighttime noise events. There would be no change from the baseline condition sleep awakenings because the type and number of civil aircraft operations would be the same as the baseline, and T-1 and T-37 aircraft would not operate during normal sleep periods. However, those individuals who sleep between 7:00 a.m. and 10:00 p.m. likely would be affected just as those persons who sleep during normal nighttime sleep periods.

#### ***Effects of Noise on Structures***

Studies have shown that damage to structures from sound pressure (e.g., window breakage, wall cracks, and foundation cracks) would not occur at 127 dBs and below. The maximum sound pressure produced by the T-1 and T-37 at 200 feet would be 103 and 102 dBA, respectively. Therefore, no damage to structures in the area surrounding the GTRA would be anticipated because the sound pressure produced by the aircraft would not exceed the level at which structural damage could occur.



#### **4.3.1.2 Averaged Noise Analysis**

As indicated in Table 4.4, 19 additional people would be exposed to noise of DNL 65 dBA and greater. Six persons would be highly annoyed by noise exposure.

On the basis of a variety of studies, there is good probability of frequent speech disruption from aircraft overflight that produces outdoor DNL 75 dBA. This level produces ratings of "barely acceptable" for intelligibility of spoken communication. However, since the total duration is no more than a few seconds during each overflight, only a few syllables may be lost. As a result of potential Proposed Action aircraft overflight noise above this level, speakers may have to raise their voices during conversation, or move closer to listeners to compensate for intruding noise in face-to-face communication. As the intruding (masking) noise level rises, speakers may cease talking until conversation can be resumed at comfortable levels. If the speech source is a radio or television, the listener may increase the volume during noise intrusion. In addition to losing information contained in masked speech, the listener may lose concentration because of the interruptions and become annoyed. Assuming the number of conversations is proportional to the increase in exposed population, it is anticipated there would be a corresponding increase in the potential for speech disruption for people in the noise exposure area.

An outdoor DNL 75 dBA is considered the threshold above which the risk of noise-induced hearing loss should be evaluated. An average of 1 dBA of hearing loss could be expected for people exposed to DNL equal to or greater than 75 dBA. For the most sensitive 10 percent of the exposed population, the maximum anticipated hearing loss would be 4 dBA. These hearing loss projections must be considered conservative, as calculations are based on an average daily outdoor exposure of 15 hours (7:00 a.m. to 10:00 p.m.) over a 40-year period. It is doubtful that any individual would spend this amount of time outdoors within the noise exposure area. Therefore, noise-induced hearing loss would not be anticipated from airfield operations associated with the Proposed Action.

Predictions of nonauditory health effects from aircraft noise cannot be made. Therefore, nonauditory health effects cannot be analyzed.

#### **4.3.2 No Action Alternative**

No T-1 or T-37 airfield operations would occur at the GTRA. All Air Force activity would occur at Columbus AFB. Noise exposure at the GTRA would continue at the baseline levels.

#### **4.3.3 Mitigation**

No mitigation would be necessary.



#### **4.3.4 Cumulative Impacts**

The 0.65 average daily helicopter airfield operation, when combined with the Proposed Action and on-going civil operations, would not increase the noise exposure area above that anticipated for the Proposed Action.

#### **4.4 LAND USE**

In considering the basis for evaluating impacts on land use, two items were examined, including: 1) the degree to which the airfield operations would impact existing sensitive land use; and 2) the degree to which airfield operations would interfere with the activities or functions of adjacent existing or proposed land uses.

##### **4.4.1 Proposed Action**

Noise modeling indicates the DNL 65 dBA and greater noise exposure area would extend about 1.5 miles further to the north and 2.0 miles farther to the south of the runway ends. The areas that would be exposed to DNL 65 dBA and greater are used for agriculture. When comparing current land use with that described in the 1984 *Airport Noise Control and Land Use Compatibility Program*, Golden Triangle Regional Airport (GTRA 1984) report, land use in the area around the airport has been consistent and remained primarily rural farmland. Although the noise exposure area would increase from the Proposed Action, the additionally exposed areas would continue to be farmland and no other land use types would be exposed to aircraft noise.

##### **4.4.2 No Action Alternative**

Noise exposure from airfield operations would remain the same as the baseline condition, which do not affect land use.

##### **4.4.3 Mitigation**

Mitigation would not be necessary.

##### **4.4.4 Cumulative Impacts**

The discussion for the Proposed Action applies to the cumulative condition because the noise exposure for the cumulative condition would be the same as the Proposed Action (see subchapter 4.3.4).



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## **CHAPTER 5**

### **LIST OF PREPARERS**

<b>Name</b>	<b>Degree</b>	<b>Resource</b>	<b>Years of Experience</b>
Miller, Dorothy	B.S., Mathematics	Aircraft Noise Modeling	25
Wallin, John	B.A., Biology M.A., Management	Airspace and Airfield Operations; Noise Analysis, Land Use	32
Wooten, R.C., Ph.D.	Ph.D., Ecology and Biology	Technical Management	36



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## **CHAPTER 6**

### **PERSONS AND AGENCIES CONSULTED**

The following persons and agencies were consulted during preparation of this EA.

#### **Brooks Air Force Base, Texas, Headquarters Air Force Center For Environmental Excellence**

Kissler, Tracy (HQ AFCEE/ICE)

#### **Columbus Air Force Base, Mississippi, 14th Flying Training Wing**

Altizer, Eddie Maj (14 OSS/OSOS)

Lockhart, Frank (14 CES/CEVN [Star Digital])

Smith, Mike (14 CES/CEV)



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**APPENDIX A**  
**Air Force Form 813**



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# REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS

Report Control Symbol  
RCS: 03 - 23

INSTRUCTIONS: Section I to be completed by Proponent; Sections II and III to be completed by Environmental Planning Function. Continue on separate sheets as necessary. Reference appropriate item number(s).

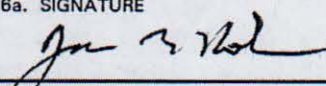
## SECTION I - PROPONENT INFORMATION

1. TO (Environmental Planning Function) 14 CES/CEV	2. FROM (Proponent organization and functional address symbol) 14 OG/OGV	2a. TELEPHONE NO. 742-7452
---	---	-------------------------------

3. TITLE OF PROPOSED ACTION  
Use of Golden Triangle Regional Airport by 14 FTW Aircraft

4. PURPOSE AND NEED FOR ACTION (Identify decision to be made and need date)  
(continuation sheet)

5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.)  
(continuation sheet)

6. PROPONENT APPROVAL (Name and Grade) JAMES M. HOLMES, Colonel, USAF Commander, 14th Operations Group	6a. SIGNATURE 	6b. DATE 20031002
--	---	----------------------

SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY. (Check appropriate box and describe potential environmental effects including cumulative effects.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)

+	0	-	U
---	---	---	---

7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)

8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)

9. WATER RESOURCES (Quality, quantity, source, etc.)

10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, bird/wildlife aircraft hazard, etc.)

11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)

12. BIOLOGICAL RESOURCES (Wetlands/floodplains, threatened or endangered species, etc.)

13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)

14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)

15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)

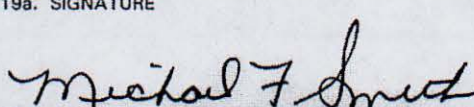
16. OTHER (Potential impacts not addressed above.)

## SECTION III - ENVIRONMENTAL ANALYSIS DETERMINATION

17. ☒ PROPOSED ACTION QUALIFIES FOR CATEGORICAL EXCLUSION (CATEX) # \_\_\_\_\_ ; OR  
☐ PROPOSED ACTION DOES NOT QUALIFY FOR A CATEX; FURTHER ENVIRONMENTAL ANALYSIS IS REQUIRED.

18. REMARKS

Columbus Air Force Base is located in an area that is in attainment; therefore, a conformity determination is not required.

19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name and Grade) MICHAEL F. SMITH, REM Chief, Environmental Flight	19a. SIGNATURE 	19b. DATE 280203
--	--	---------------------



**4. PURPOSE AND NEED FOR THE PROPOSED ACTION (Identify decision to be made and need date)**

The proposed action is to use Golden Triangle Regional (GTR) airport as an instrument and contact location for T-37 operations, the primary solo divert base for T-37s, and an alternate site for T-1 operations once a tower is in place. The use will overlap with the proposed 6-month Shuqualak (Gunshy) closure starting in December 2003. A temporary tower will be set up in December 2003 with an operational control tower in place in January of 2004. With an operational control tower in place at GTR, 14th Flying Training Wing (FTW) aircraft will augment training by using GTR for visual patterns, instrument approaches and simulated emergency procedures training. This increase in daily operations warrants the need for an environmental assessment, as operations are planned to begin once the temporary tower is in place and continue once the permanent control tower is operational.

**5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPPA) (Provide sufficient details for evaluation of the action).****A. Routine-use action.**

The 14th Flying Training Wing (14 FTW) at Columbus AFB (CBM) trains over 450 pilots per year and continually looks for opportunities to improve mission effectiveness and operational safety. Specialized Undergraduate Pilot Training (SUPT) is conducted using T-37, T-1 (BE-40), T-38, and soon, T-6 aircraft. Inflight training in these aircraft include multiple visual approaches, instrument approaches, landings, and take-offs. At the present time, Columbus AFB aircraft utilizes three runways at Columbus and one runway at our auxiliary field (Gunshy) in Shuqualak, Mississippi for most of our visual pattern training. Instrument approach training is conducted at Columbus AFB, and tower-controlled airfields in the local area. Currently, the closest airfield for instrument training is Tupelo Regional Airport, Tupelo, MS.

VFR pattern operations are continuously saturated at Columbus and Gunshy. Traffic counts exceeded 289,000 in FY 2001, 311,000 in FY 2002 and are expected to remain high in the future. The auxiliary field alone produced traffic counts more than 27,000 in FY 2001, 24,000 in FY 2002 and will continue to remain high as well.

**B. Proposed-site action**

Gunshy is approximately 40 miles from Columbus AFB. This distance makes the aux field a good place to conduct visual pattern training. Due to fuel and aircraft sortie duration (ASD), training time at Gunshy is somewhat limited. For example, time to cruise to Gunshy is approximately 15 minutes. In 15 minutes an aircraft can fly 2-3 patterns. GTR is 13 miles from CBM. This close proximity requires less fuel and enroute time. This maximizes pattern time, making GTR an excellent place for the visual pattern training normally accomplished at Gunshy.

With an operational control tower at GTR, T-37/T-6 VFR straight-in and/or VFR overhead visual patterns at GTR could be as high as 25 events per day (each event assumes 1 arrival, 1 departure, 1 landing and 1 takeoff totaling 4 operations per event). With an estimated 20 fly days per month, these numbers alone produce an estimated increase of up to 2000 military operations per month. With Gunshy closed for repairs, GTR will absorb the additional traffic. Operations during the 6-month period will be up to 205 VFR patterns per day causing 10,400 total VFR operations per month.

Instrument approach training requires published instrument procedures and an operational control tower. The 14 FTW currently has adequate resources for instrument training, but GTR's close proximity could improve training. Maximum estimated instrument training at GTR could increase by 35 T-37/T-6 approaches per day and 5 T-1 approaches per day totaling 3200 military/instrument operations per month. With Gunshy closed, IFR traffic would remain the same.

Estimated total VFR and IFR operations are 260 per day and up to 5200 per month with an operational tower. During the Gunshy closure, traffic could be as high as 680 operations per day and 13,600 per month. These numbers are based on clear weather with all procedures in place for all the planned operations: Gunshy traffic, instrument & normal contact, formation and continuation training (CT) with and without Gunshy open. See table on following page:



	<u>CP Events</u>	<u>CP Operations</u>	<u>Arrival Operations</u>	<u>Departure Operations</u>	<u>Total Operations</u>
* Temporary Use EA when Gunshy Closed *					
T-1	5	10	5	5	20
T-37 (GT)	180	360	30	30	420
T-37 (I)	30	60	30	30	120
T-37 (C)	20	40	20	20	80
T-37 (F)	5	10	5	5	20
T-37 (CT)	5	10	5	5	20
Total	245	490	95	95	680
* Proposed Permanent with Gunshy operational *					
T-1	5	10	5	5	20
T-37 (VFR)	25	50	25	25	100
T-37 (INST)	35	70	35	35	140
Total	65	130	65	65	260

Legend (GT) = Gunshy traffic at GTR when Gunshy closed  
(I) = Instrument training  
(C) = Contact training other than Gunshy  
(F) = Formation training  
(CT) = Cont. Training  
(VFR) = All VFR patterns (C + F from above)  
(INST) = All instrument approaches (I + CT from above)

In the preceding table, a CP event = closed pattern event / instrument approach, i.e., one event. CP events equate to 2 operations for each event, i.e., one takeoff and one landing. An arrival equals one operation and a departure equals one operation. The total column is for operations and does not include events.

Planned cruising altitudes to and from GTR are between 3000 feet and 6000 feet MSL (2800-5800 feet AGL). Because GTR already has traffic patterns established and controlled by Columbus Radar Approach Control (RAPCON), flight routes to and from GTR should not affect Columbus AFB flight patterns.

#### C. Alternate-site action.

One alternative is to have the Gunshy traffic absorbed at Columbus AFB. During times of heavy operations at Columbus AFB, aircraft are sometimes required to leave the pattern or land to allow other aircraft to conduct minimum training requirements. Columbus AFB absorbing the Gunshy traffic aggravates this situation. Furthermore, Columbus often remains on the same runway direction (13 or 31) for days or weeks inhibiting opposite direction traffic. Without the opposite traffic pattern available, flexibility for student training is lost. While this option is possible, it has many quality-of-training drawbacks.

Aircraft can use other locations to conduct training. These locations include Tupelo Regional Airport, Tupelo, MS, Tuscaloosa Municipal Airport, Tuscaloosa, AL, Meridian Key Field, Meridian, MS and Greenwood Leflore Airport, Greenwood, MS. These airports are up to 80 miles away from Columbus AFB and can be saturated with civilian and other military traffic. Many of these sites do not have radar coverage. Other sites, such as Navy Joe Williams, MS, would not work out due to coordination issues. With GTR, logistical support is minutes away; aircraft can use the same training airspace, no additional costs for billeting aircrews, etc.

#### No-Action alternate:

1. No 14 FTW usage of GTR allowed once control tower is in place.

If GTR is unavailable for 14 FTW aircraft usage, these aircraft must continue to use the airports mentioned in paragraph C and will not optimize training resources possible at GTR.

2. If GTR does not get an operational control tower in, continue use under the 14 FTW waiver (dated January 24th, 2003 authorizing T-37 / T-1 operations into GTR as an uncontrolled airfield) on a permanent basis.



This option, operating without a tower, is not feasible. Commuter and regional airlines, charters and several private operators use GTR. On a VFR day, there are 100 runway operations per day into GTR. There is a mix of single-engine and multi-engine jet aircraft (regional jets, Beechjets and some others). The intent of the waiver is to allow T-1 and T-37 aircraft into GTR to conduct familiarization training with the airport and GTR personnel. It would be much safer to have the tower in place before conducting the volume of training mentioned above.



**APPENDIX B**  
**Interagency and Intergovernmental Correspondence for**  
**Environmental Planning**



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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI

4 January 2004

Ms. Kathy Lunceford  
Vicksburg Ecological Service  
United States Fish and Wildlife Service  
6578 Dogwood View Parkway, Suite A  
Jackson, MS 39213

Dear Ms. Lunceford,

The U.S. Air Force has prepared the attached Draft Environmental Assessment (EA) to assess the potential environmental impacts of the proposed use of the Golden Triangle Regional Airport, Columbus, Mississippi by Columbus Air Force Base (AFB) aircraft.

The Air Force is requesting input from federal, state, and local agencies on the Draft EA and Draft Finding of No Significant Impact in accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*. Please identify any resources or projects within your agency's purview that may be potentially impacted or could add to the cumulative impact analysis. Please provide detailed information for any resources or projects that would occur during the same period as the Air Force's proposal.

Please provide any comments or information by 2 February 2003. Responses should be sent directly to:

Mr. Frank Lockhart  
14 CES/CEV (Star digital)  
555 Simler Blvd.  
Columbus AFB MS 39710-6010

Your assistance in providing information is greatly appreciated. Mr. Lockhart can be reached at (662)-434-3130.

Sincerely,

  
MICHAEL F. SMITH, REM  
Chief, Environmental Flight

Attachment:

Draft Environmental Assessment; Draft Finding of No Significant Impact









## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

Mississippi Field Office  
6578 Dogwood View Parkway, Suite A  
Jackson, Mississippi 39213  
January 26, 2004

Mr. Frank Lockhart  
Department of the Air Force  
14 CES/CEV (Star digital)  
555 Simler Boulevard  
Columbus Air Force Base, Mississippi 39710-6010

Dear Mr. Lockhart:

The U.S. Fish and Wildlife Service (Service) has reviewed the draft environmental assessment dated January 2004, regarding a proposed change in aircraft training at the Golden Triangle Regional Airport (GTRA) in Lowndes County, Mississippi. The 14th Flying Training Wing at Columbus AFB proposes to increase the frequency of T-37 and T-1 aircraft training flights at the GTRA. Our comments are submitted in accordance with the Endangered Species Act (16 U.S.C. 1531 et seq.).

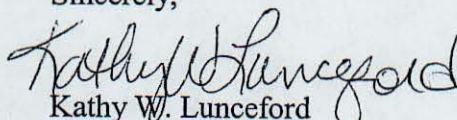
There will be no ground disturbing activity resulting from the proposed project activities. However, the federally listed threatened bald eagle (*Haliaeetus leucocephalus*) is known to nest along the Tennessee-Tombigbee Waterway. The bald eagle is the only species of "sea eagle" regularly occurring on the North American continent. The bald eagle is predominantly a winter migrant in the southeast; however, increasing occurrences of nesting have been observed. The bald eagle nests in the transitional area between forest and water. Their nests are constructed in dominant living pines or bald cypress trees. Eagles often use alternate nests in different years with nesting activity occurring between September and January of each year. Young are usually fledged by mid-summer.

The bald eagle is very sensitive to human disturbance, especially during the courtship, mating, and nesting season. Therefore, the Service recommends a 1500 foot horizontal buffer and a 500-foot vertical buffer be maintained between nest sites and any aircraft activity to avoid detrimental impacts on eagle nesting. For specific nest locations on the COE properties, please contact the COE in Columbus, telephone: (662) 327-2142.



If you have any questions, please feel free to contact our office, telephone: 601-321-1132.

Sincerely,

A handwritten signature in cursive script, reading "Kathy W. Lunceford". The signature is written in dark ink and is positioned above the printed name and title.

Kathy W. Lunceford  
Fish and Wildlife Biologist





DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI

2 Mar 04

Ms. Kathy Lunceford  
Vicksburg Ecological Service  
United States Fish and Wildlife Service  
6578 Dogwood View Parkway, Suite A  
Jackson MS 39213

Lt Gary Moore  
14 CES/CEV  
555 Simler Blvd.  
Columbus AFB MS 39710

Dear Ms. Lunceford

Your 26 January 2004 letter recommends maintaining a 1500 foot horizontal and a 500 foot vertical buffer between bald eagle nest sites and any aircraft activity to avoid detrimental impacts on eagle nesting. The US Army Corps of Engineers (COE), Waterway Management Center, Columbus, MS provides the specific nest locations on COE properties around Columbus Air Force Base and Golden Triangle Regional Airport.

The attached correspondence from 14 OG/OGV, indicates no nest sites are in the flight paths of our aircraft. They also plotted the locations on maps indicating the nest locations as areas to be avoided.

Please review and provide concurrence with these actions no later than 12 March 2004, which is when the public review period for the Draft Environmental Assessment ends. Your concurrence is requested to demonstrate that United States Fish and Wildlife Service concerns were appropriately addressed.

If you have any questions or require any additional information please send your response directly to Mr. Frank Lockhart at the address listed above.

Sincerely,

*Gary J Moore*

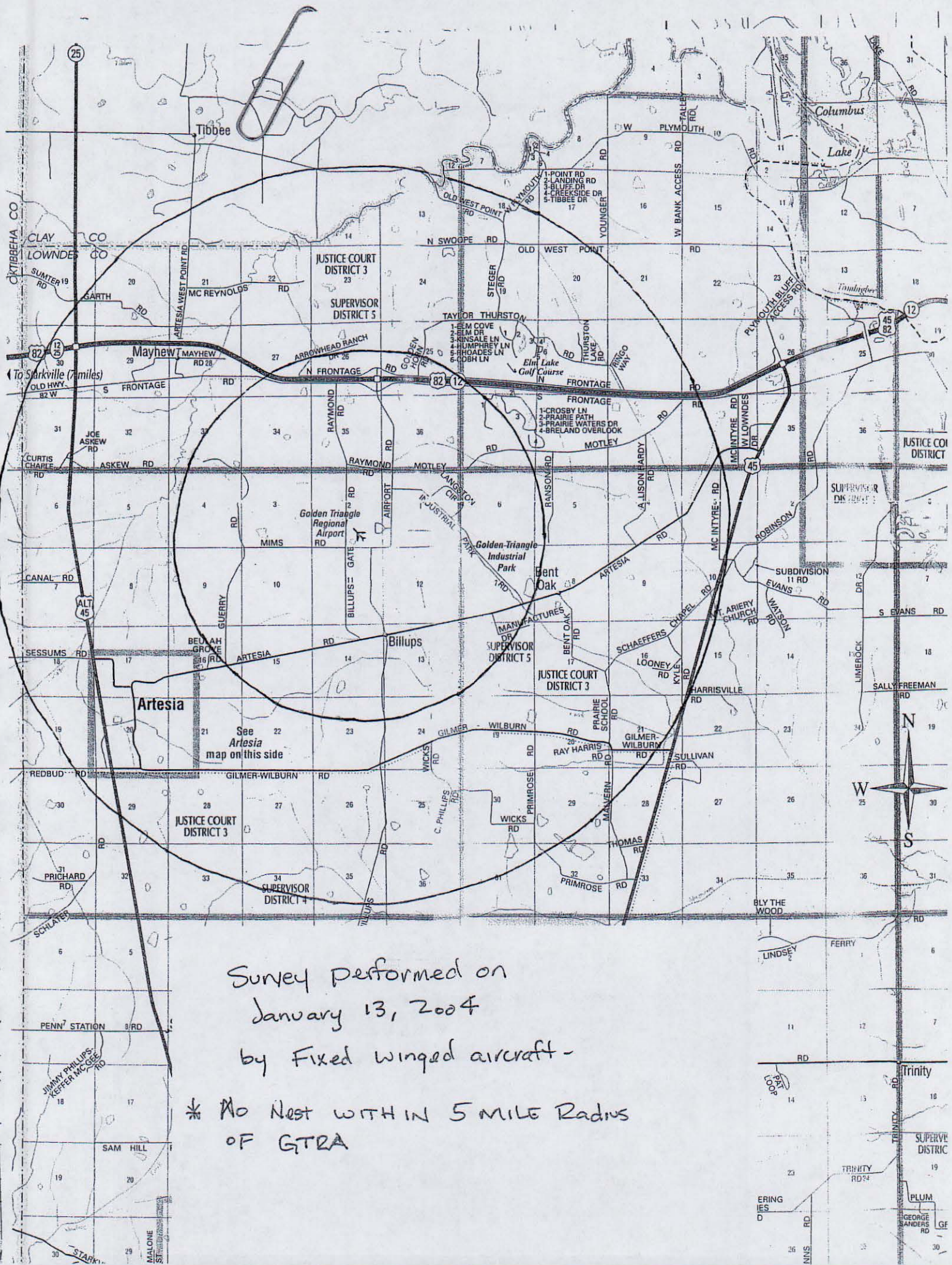
GARY MOORE, 1st Lt, USAF  
Deputy Commander, Environmental Flight

Attachments:  
Eagle nest locations maps, Corps of Engineers  
Correspondence, 14 OG/OGV  
Flight Map





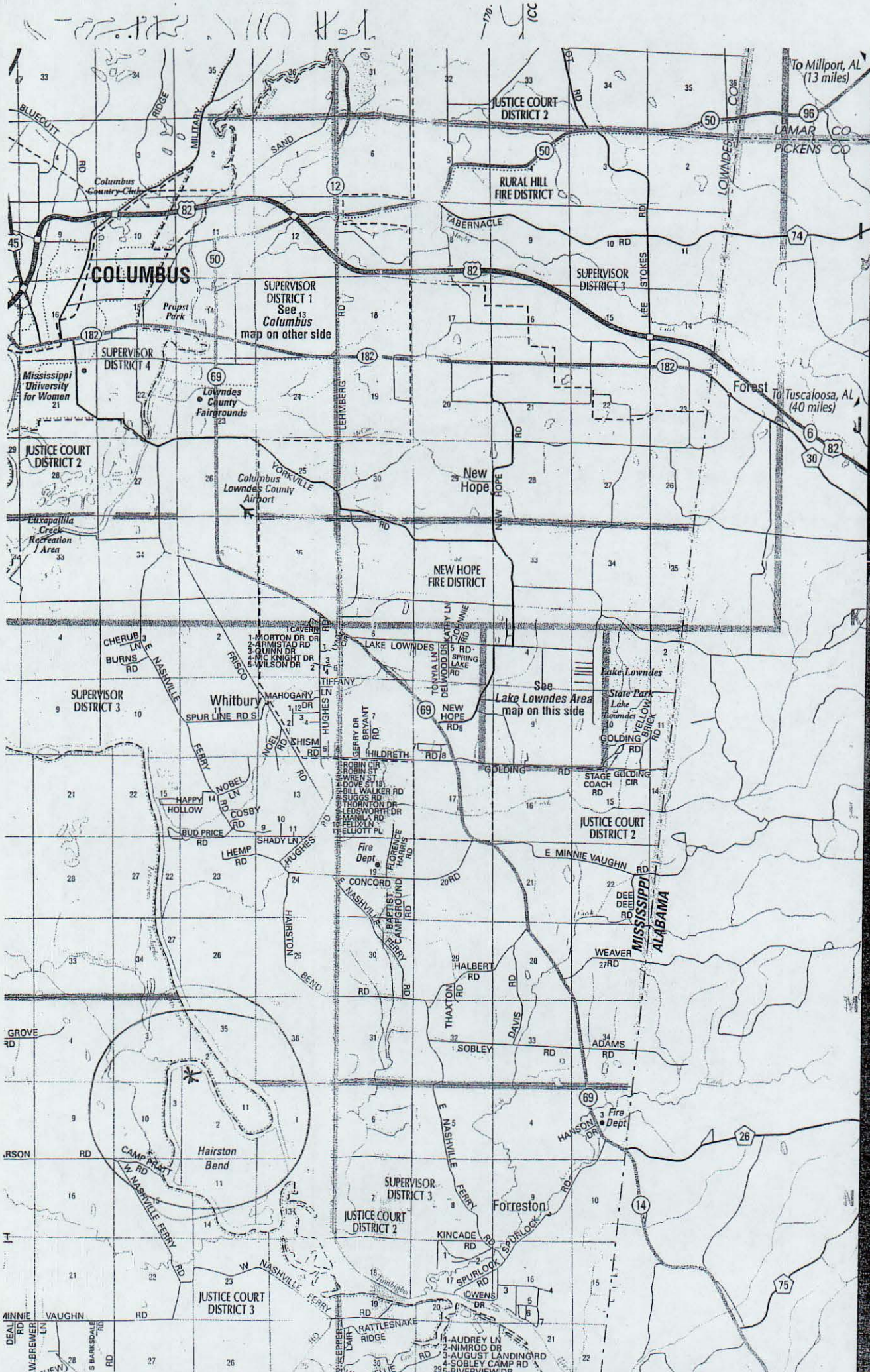




Survey performed on  
January 13, 2004  
by Fixed winged aircraft -

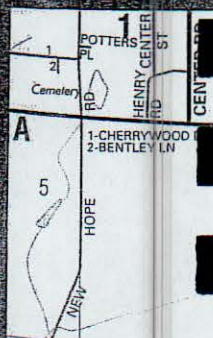
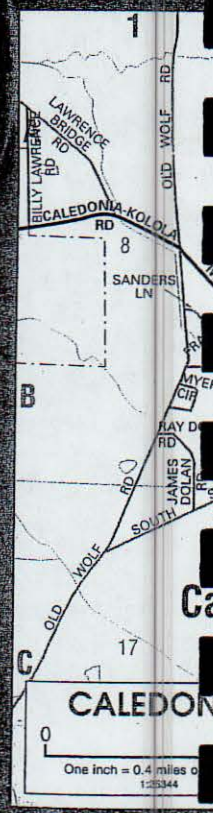
\* No Nest WITHIN 5 mile Radius  
OF GTRA



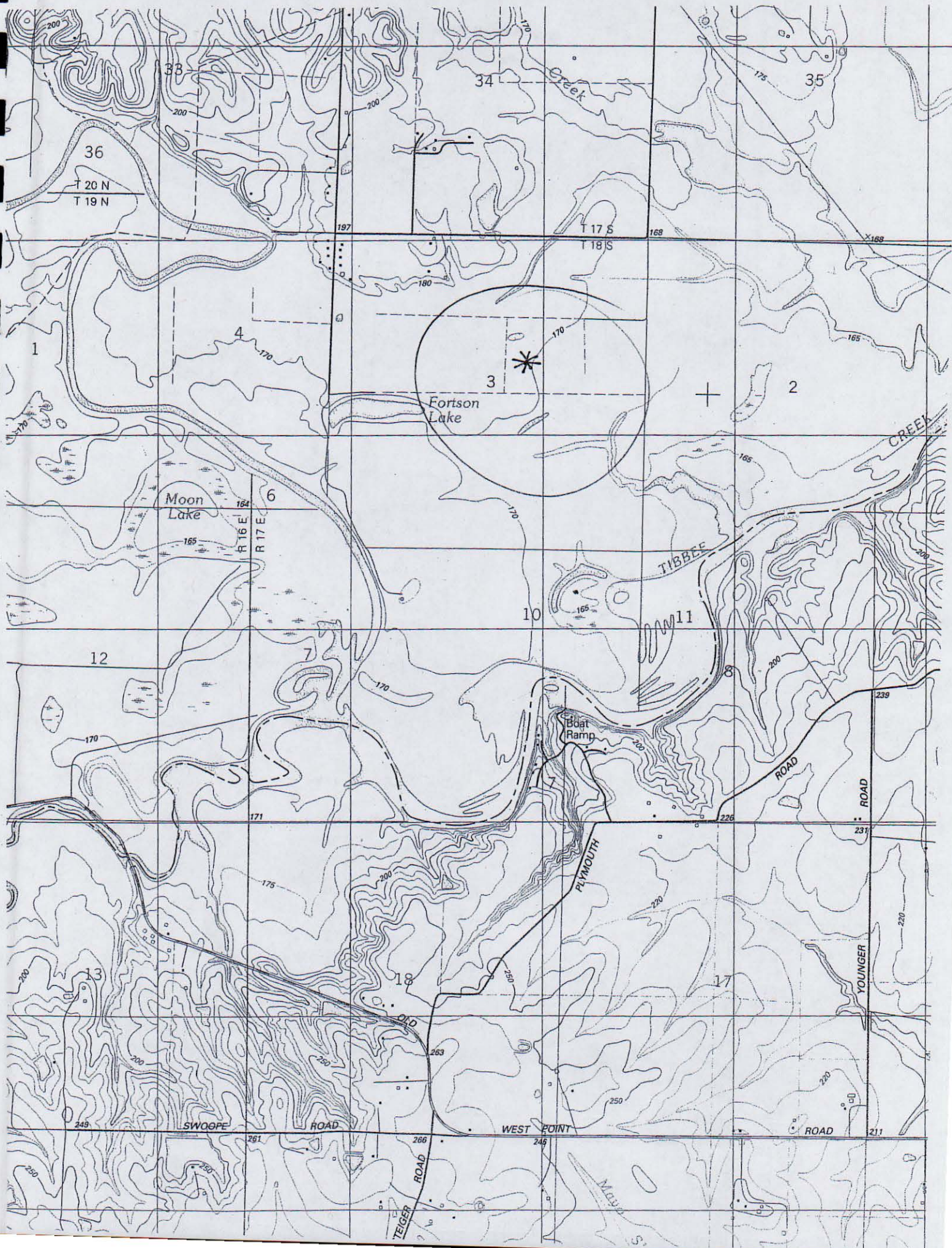


716 2nd Avenue North  
Columbus, MS 39701

Men

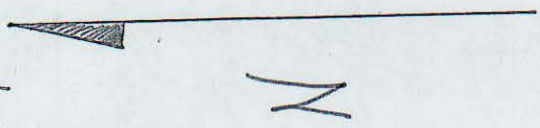








\* NEST PRESENT  
 - 1 MATURE  
 EAGLE SITTING  
 ON EGGS @  
 TIME OF  
 SURVEY





## **Lockhart Frank D Contr 14CES/CEV**

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**From:** Wolfe Kevin S Maj 41FTS/DOV  
**Sent:** Wednesday, February 25, 2004 10:41 AM  
**To:** Lockhart Frank D Contr 14CES/CEV  
**Subject:** Eagle's nests

Mr. Lockhart,

I have the information about the eagle's nest. What we have done already is plot the positions out on a Map locating where they are exactly. However, drawing a circle on this map is not to scale as even a small circle depicts about 1 mile. We have some satellite imagery of our area and have used them in the past for depicting ground tracks of where we fly in our VFR pattern. What we are in the process of doing now taking these pictures and plotting these nests on them which will identify area/s to avoid. We will place these very large pictures in each flight room as well as the tweetworld Duty Desk area.

Of the nesting sites we have plotted, only one is anywhere close to areas that we normally fly and it is here at Columbus. Even this area we do not currently fly directly over or in the required windows of avoidance. Although these nests are not in the flight path of our aircraft, we will identify these areas anyway in an effort to educate all our pilots. None of these areas are anywhere near the areas we fly at GTR. They are quite a few miles away from the closet part of the patterns we fly there. However, they have been identified and as mentioned, the information will be passed on. These birds are to be revered and respected and nobody flying here on base wants to bother them in any way. I hope this meets with satisfaction as we have taken appropriate steps in order to preserve their way of life.

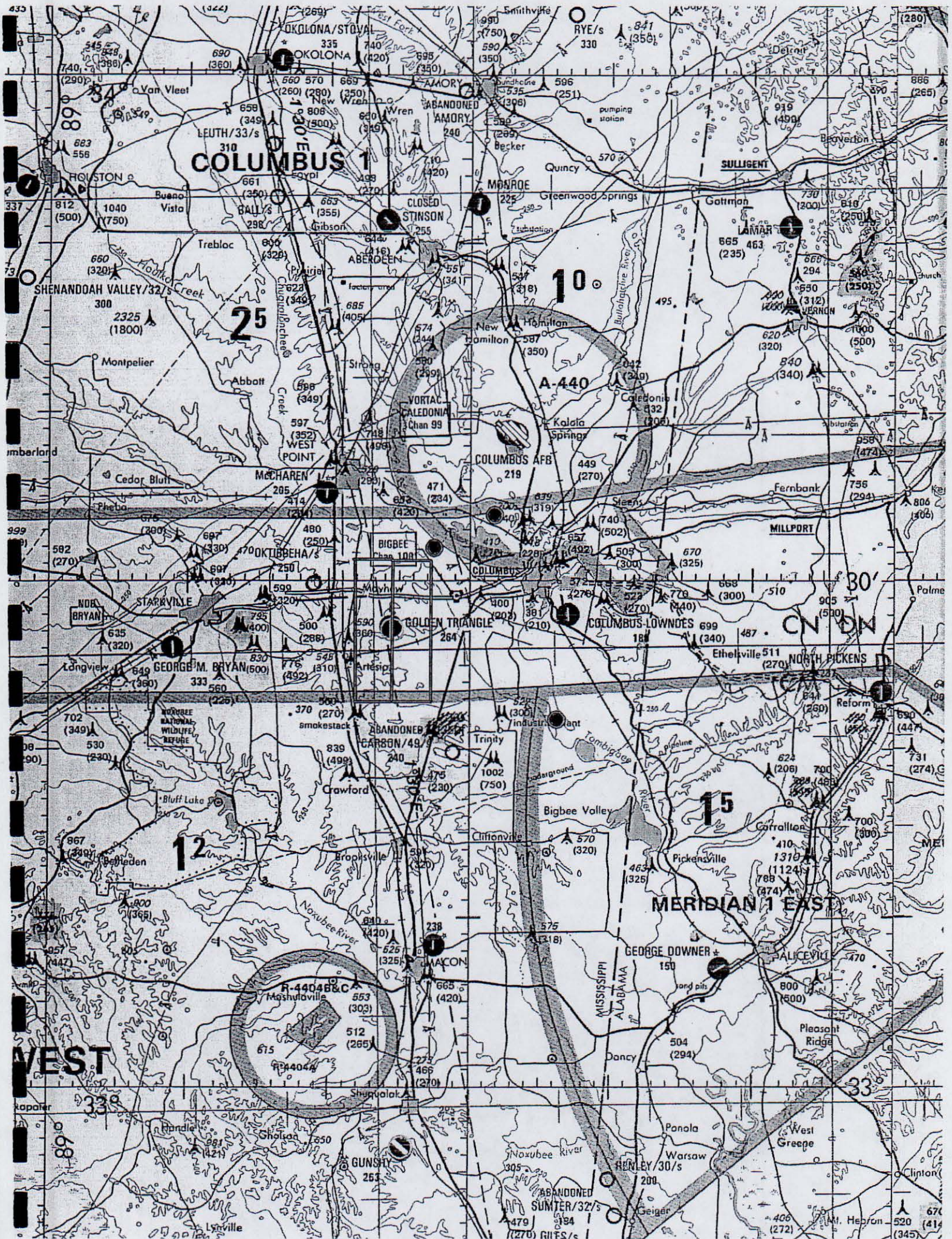
Thanks,

Maj Wolfe  
14 OG/OGV

















DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 14TH FLYING TRAINING WING  
COLUMBUS AIR FORCE BASE MISSISSIPPI

21 January 2004

Ms. Mildred Tharpe  
State Clearinghouse for Federal Programs  
1301 Woolfolk Building, Suite E  
501 North West St.  
Jackson, MS 39213

Dear Ms. Tharpe,

The U.S. Air Force has prepared the attached Draft Environmental Assessment (EA) to assess the potential environmental impacts of the proposed use of the Golden Triangle Regional Airport, Columbus, Mississippi by Columbus Air Force Base (AFB) aircraft.

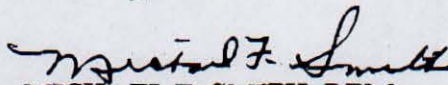
The Air Force is requesting input from federal, state, and local agencies on the Draft EA and Draft Finding of No Significant Impact in accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*. Please identify any resources or projects within your agency's purview that may be potentially impacted or could add to the cumulative impact analysis. Please provide detailed information for any resources or projects that would occur during the same period as the Air Force's proposal.

Please provide any comments or information by 2 February 2003. Responses should be sent directly to:

Mr. Frank Lockhart  
14 CES/CEV (Star digital)  
555 Simler Blvd.  
Columbus AFB MS 39710-6010

Your assistance in providing information is greatly appreciated. Mr. Lockhart can be reached at (662)-434-3130.

Sincerely,

  
MICHAEL F. SMITH, REM  
Chief, Environmental Flight

Attachment:  
Draft Environmental Assessment; Draft Finding of No Significant Impact









STATE OF MISSISSIPPI  
DEPARTMENT OF FINANCE AND ADMINISTRATION

MEMORANDUM

TO: COLUMBUS AIR FORCE BASE  
DEPARTMENT OF THE AIR FORCE  
555 SIMLER BLVD.  
COLUMBUS AFB MS 39710 6010

DATE: FEB 16 2004

FROM: STATE CLEARINGHOUSE FOR FEDERAL PROGRAMS

SUBJECT: REVIEW COMMENTS - Activity:  
ENVIRONMENTAL ASSESSMENT TO ASSESS THE POTENTIAL  
ENVIRONMENTAL IMPACTS OF THE PROPOSED USE OF THE GOLDEN  
TRIANGLE REGIONAL AIRPORT, COLUMBUS, MISSISSIPPI, BY  
COLUMBUS AIR FORCE BASE AIRCRAFT.

State Application Identifier Number MS040123-002

Location: LOWNDES

Contact: FRANK LOCKHART

The State Clearinghouse, in cooperation with state agencies interested or possibly affected, has completed the review process for the activity described above.

INTERGOVERNMENTAL REVIEW PROCESS COMPLIANCE:

- ( ) We are enclosing the comments received from the state agencies for your consideration and appropriate actions. The remaining agencies involved in the review did not have comments or recommendations to offer at this time. A copy of this letter is to be attached to the application as evidence of compliance with Executive Order 12372 review requirements.
- ( ) Conditional clearance pending Archives and History's approval.
- (✓) None of the state agencies involved in the review had comments or recommendations to offer at this time. This concludes the State Clearinghouse review, and we encourage appropriate action as soon as possible. A copy of this letter is to be attached to the application as evidence of compliance with Executive Order 12372 review requirements.
- ( ) The review of this activity is being extended for a period not to exceed 60 days from the receipt of notification to allow adequate time for review.

COASTAL PROGRAM COMPLIANCE (Coastal area activities only):

- ( ) The activity has been reviewed and complies with the Mississippi Coastal Program. A consistency certification is to be issued by the Mississippi Department of Marine Resources in accordance with the Coastal Zone Management Act.
- ( ) The activity has been reviewed and does not comply with the Mississippi Coastal Program.

cc: Funding Agency (As requested by applicant)





# GOLDEN TRIANGLE

## Planning and Development District, Inc.

Post Office Box 828

Starkville, MS 39760-0828

Telephone (662) 324-7860

Fax (662) 324-7328

**Cecil Hamilton**  
President

**David Winfield**  
Vice President

**Larry Crowley**  
Secretary / Treasurer

**Rupert L. "Rudy" Johnson**  
Executive Director

TO: Columbus Air Force Base  
Dept. of the Air Force  
555 Simler Blvd.

Columbus AFB, Mississippi 39710-6010

DATE: February 6, 2004

CLEARINGHOUSE NUMBER: MS040123-002

The Golden Triangle Planning & Development District, as Regional Clearinghouse for Federal Programs, has been notified of the intent to apply for Federal assistance as described below:

**Environmental Assessment to Assess the Potential Environmental Impacts of the Proposed Use of the Golden Triangle Regional Airport, Columbus, Mississippi, by Columbus Air Force Base Aircraft.**


Total Project Cost:

Federal Agency/Funds:

- ☐ The Regional Clearinghouse has received and reviewed the application for Federal assistance as described above.
- ☐ The Regional Clearinghouse has notified appropriate local and regional agencies of this proposed project, and
  - ☐ Interest has been expressed in conferring with the applicant(s).
  - ☐ The attached comments were submitted and are to become a part of this Review.
  - ☐ No response was received from these agencies.
- ☒ The proposed project appears to be consistent with the following plan(s) for economic/community development in the District
  - ☒ GTPDD DISTRICT DEVELOPMENT PROGRAM
  - ☐ Comprehensive Economic Development Strategy
- ☐ The proposed project is not consistent with applicable economic/community development plan(s) for this District.
- ☒ This notice constitutes final Regional Clearinghouse Review and Comment on the proposed project, and requirements of E.O. 12372 have been met at the Regional level.

Comments:

c: State Clearinghouse

  
Rupert L. "Rudy" Johnson  
Executive Director





## United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Mississippi Field Office  
6578 Dogwood View Parkway, Suite A  
Jackson, Mississippi 39213

March 2, 2004

Lt. Gary Moore  
Department of the Air Force  
14 CES/CEV  
555 Simler Boulevard  
Columbus AFB, Mississippi 39710

Dear Lt. Moore:

The U.S. Fish and Wildlife Service has reviewed the information in your letter dated March 2, 2004, regarding the potential impact of aircraft training activities on the federally listed threatened bald eagle (*Haliaeetus leucocephalus*) near the Golden Triangle Airport, Lowndes County, Mississippi. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e), and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

The U.S. Army Corps of Engineers has provided your office with specific eagle nest locations in and around the subject site. You have assessed these locations and determined that there would be no adverse impacts by the proposed aircraft activities on any eagle nest or individual. After review of the enclosed surveys, we concur with that finding. Therefore, no additional consultation under Section 7 of the Endangered Species Act will be necessary.

If you have any questions, please feel free to contact this office, telephone: (601) 321-1132.

Sincerely,

Kathy W. Lunceford  
Mississippi Environmental Coordinator



