

ENVIRONMENTAL ASSESSMENT T-6 AIRCRAFT BASING AND OPERATION



**DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND
14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE, MISSISSIPPI**

JUNE 2004

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14. ABSTRACT The purpose of the Proposed Action is to replace the T-37 aircraft and associated ground-based training system used in Specialized Undergraduate Pilot Training (SUPT) at Columbus AFB with the Joint Primary Aircraft Training System (JPATS). The JPATS includes the T-6 aircraft, which is a higher performance and more modern aircraft than the T-37, and a ground-based training system consisting of aircraft simulators and academic courseware. The T-37 aircraft has shortcomings in performance and design, training effectiveness, safety, and supportability. Production of the aircraft began in 1952 and ended in 1968. As aircraft are lost to attrition, they cannot be replaced. This EA evaluates the Proposed Action and the No-Action Alternative. Under the No-Action Alternative, the T-37 aircraft would continue to be used in the SUPT program. Resources considered in the impact analysis were: airfield and airspace operations (to include bird-aircraft strike hazard and safety); noise; land use; air quality infrastructure and utilities; biological resources; hazardous materials and wastes; and environmental justice.					
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FINDING OF NO SIGNIFICANT IMPACT T-6 AIRCRAFT BASING AND OPERATION

AGENCY

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

BACKGROUND

The T-37 aircraft currently used as the primary training aircraft in Specialized Undergraduate Pilot Training (SUPT) has shortcomings in performance and design, training effectiveness, safety, and supportability. Production of the aircraft began in 1952 and ended in 1968. As aircraft are lost to attrition, they cannot be replaced.

Pursuant to National Environmental Policy Act (NEPA) guidance, 32 Code of Federal Regulations (CFR) 989 (*Air Force Environmental Impact Analysis Process*), and other applicable regulations, the Air Force completed an environmental assessment (EA) of the potential environmental consequences of the Proposed Action and the No-Action Alternative.

PROPOSED ACTION

The Proposed Action converts Columbus AFB to the Joint Primary Aircraft Training System, which includes the higher performance and more modern T-6 aircraft and a ground-based training system consisting of aircraft simulators and academic courseware. A warehouse will be constructed. Columbus AFB T-6 aircrews will accomplish airfield operations at the base, the Shuqualak Auxiliary Airfield, and the Golden Triangle Regional Airport (GTRA), as well as low-level navigation training on two military training routes (MTRs). The number of military, government civilian, and contractor personnel at the base, as well as the average daily student load will remain at approximately the current levels.

NO ACTION ALTERNATIVE

The Air Force will continue to use the T-37 as the primary training aircraft in the SUPT program at Columbus AFB. The number of military, government civilian, and contractor personnel at the base, as well as the average daily student load will remain at approximately the current levels.

SUMMARY OF FINDINGS

The following paragraphs summarize the findings of the attached EA for the Proposed Action and No-Action Alternative.

EVALUATION OF THE PROPOSED ACTION

Airspace and Airfield Operations, Aircraft Safety, and Bird-Aircraft Strike Hazard. **Columbus AFB and Shuqualak Auxiliary Airfield.** The operating characteristics of the T-6 are similar to the T-37. Thus, the T-6 traffic pattern aircraft ground tracks, profiles, and airspeeds are anticipated to be nearly identical to those currently flown by the T-37. T-6 aircrews will accomplish emergency landing pattern (ELP) patterns at both airfields. The air traffic control infrastructure at each airfield can accommodate the ELP as well as other T-6 patterns. Both airfields have the capacity to support the anticipated T-6 airfield operations. **GTRA.** The airspace surrounding the GTRA and the anticipated air traffic control procedures can accommodate the T-6 airfield operations (to include T-6 ELPs) without conflict from other aviation activity. **MTRs.** Both MTRs have the capacity and structure to accommodate T-6 operations. The potential for conflict between aircraft operating on the MTRs as well as other civil aircraft operating in the airspace around the MTRs is low because the existing scheduling and air traffic control procedures are designed to minimize conflict between aircraft. The probability is low that an aircraft involved in an accident at or around the Columbus AFB, Shuqualak Auxiliary Airfield, or GTRA airfields or on a MTR will strike a person or structure on

the ground. The potential for bird-aircraft strikes associated with aircraft operations is expected to remain about the same as the current condition because the number of sorties and flying hours will not change and the T-6 and T-37 are comparable in size and operating characteristics.

Noise. **Columbus AFB.** The number of people exposed to Day-Night Average Sound Level (DNL) 65 decibels (dBA) and greater will decrease by 14 percent. It is anticipated there will be a corresponding decrease in the potential for sleep awakenings and speech disruption when compared to the existing condition. Construction noise will be temporary, will occur only during daytime, and will cease when the project is completed. **Shuqualak Auxiliary Airfield.** The number of people exposed to DNL 65 dBA and greater will decrease by 94 percent. Correspondingly, the potential for sleep awakenings and speech disruption decreases. Noise-induced hearing loss is not anticipated. **GTRA.** Eight additional persons will be exposed to DNL 65 dBA and greater noise levels. There will be no noise induced hearing loss or nonauditory health effects. There will be no change from the baseline condition sleep awakenings because the type and number of civil aircraft operations will be the same as the baseline, and T-1 and T-6 aircraft will not operate during normal 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 normal nighttime sleep periods. **MTRs.** The onset rate-adjusted monthly day-night average A-weighted sound level will decrease by 2 dBA and 7 dBA on the 2 MTRs that T-6 aircraft will use. Noise from MTR operations will not exceed 55 dBA, the level above which the general population could be at risk from the effects of noise. No structural damage is expected from T-6 MTR operations.

Land Use. **Columbus AFB.** Facility construction will be consistent with existing and future land use plans identified in the Columbus AFB General Plan. The Air Installation Compatible Use Zone program-identified aircraft noise and accident potential zones incompatibilities that occur under the current condition will continue. **Shuqualak Auxiliary Airfield.** The homes along a rural road that passes northwest of the airfield will continue to be within the DNL 65 dBA and greater noise exposure area and will continue to be incompatible due to noise exposure. **GTRA.** 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. **MTRs.** Neither aircraft overflight nor the resultant noise will cause changes to existing land uses within the MTR corridors.

Air Quality. **Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA.** All three airfields and portions of the two MTRs are within the same air quality control region (AQCR). The greatest increase for any of the criteria air pollutants within the AQCR will be 1,435.97 tons per year (tpy) for carbon monoxide (CO), which equates to 0.38 percent of the baseline emissions. The Clean Air Act General Conformity Applicability Analysis concluded that the net change in emissions for criteria pollutants is not regionally significant, will not exceed thresholds, and that a Conformity Determination is not required. **MTRs.** The greatest increase in emissions for any of the criteria air pollutants from MTR operations within the two affected AQCRs will be CO (2.825 tpy), which equates to 0.0042 percent of the CO emissions in the specific AQCR. The air emissions from MTR operations within these two AQCRs are not considered significant and a Conformity Determination is not required.

Infrastructure and Utilities. The electricity and natural gas distribution systems capacities are more than adequate to handle the respective 0.45 and 0.39 percent increases in demand for the new facility. The disposal of construction debris equates to less than 0.0002 percent of the total remaining landfill capacity. Storm water runoff could increase by 0.5 percent as a result of the additional impervious cover. Construction-related traffic will be localized to the specific construction project area as well as to the route between the project site and the base gate. Construction-related traffic will be temporary, lasting as long as the project activity.

Biological Resources. MTR overflights will be infrequent, random, and pose no threat to wildlife at the behavioral, population, or species level. MTR operations likely will not adversely affect any threatened, endangered, or special status species.

Hazardous Materials and Wastes. The contractor will comply with regulatory guidance for the use and disposal of hazardous materials and wastes during construction activities. The primary waste producing processes will continue to include aircraft parts cleaning, fluid changes for routine aircraft and vehicle maintenance, aircraft corrosion control, facility, and infrastructure maintenance. It is not anticipated any new hazardous materials will be needed. Hazardous material procurement and hazardous waste generation will not exceed current levels because the number of aircraft at Columbus AFB will decrease by seven aircraft. The existing hazardous materials handling and hazardous waste disposal processes and procedures will accommodate the activities associated with T-6 operation and maintenance.

EVALUATION OF THE NO ACTION ALTERNATIVE

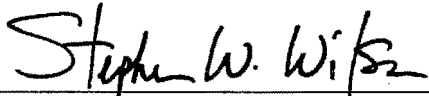
No significant impacts occur from the existing activities at Columbus AFB, Shuqualak Auxiliary Airfield, or on the MTRs.

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 W. WILSON, Colonel, USAF
Commander, 14th Flying Training Wing



Date

**ENVIRONMENTAL ASSESSMENT
T-6 AIRCRAFT BASING AND OPERATION**

COLUMBUS AIR FORCE BASE, MISSISSIPPI

**DEPARTMENT OF THE AIR FORCE
AIR EDUCATION AND TRAINING COMMAND**

June 2004



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COVER SHEET
ENVIRONMENTAL ASSESSMENT
T-6 AIRCRAFT BASING AND OPERATION

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

Proposed Action: Base and operate T-6 aircraft at Columbus AFB

Written comments and inquiries regarding this document should be directed to: Mr. Mike Smith, 14 CES/CEV, 555 Simler Blvd., Columbus AFB, Mississippi 39710, (662) 434-7328.

Report Designation: Environmental Assessment.

Abstract: The purpose of the Proposed Action is to replace the T-37 aircraft and associated ground-based training system used in Specialized Undergraduate Pilot Training (SUPT) at Columbus AFB with the Joint Primary Aircraft Training System (JPATS). The JPATS includes the T-6 aircraft, which is a higher performance and more modern aircraft than the T-37, and a ground-based training system consisting of aircraft simulators and academic courseware. The T-37 aircraft has shortcomings in performance and design, training effectiveness, safety, and supportability. Production of the aircraft began in 1952 and ended in 1968. As aircraft are lost to attrition, they cannot be replaced. This EA evaluates the Proposed Action and the No-Action Alternative. Under the No-Action Alternative, the T-37 aircraft would continue to be used in the SUPT program. Resources considered in the impact analysis were: airfield and airspace operations (to include bird-aircraft strike hazard and safety); noise; land use; air quality; infrastructure and utilities; biological resources; hazardous materials and wastes; and environmental justice.

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ACRONYMS AND ABBREVIATIONS

µg/m ³	Microgram(s) per cubic meter
AETC	Air Education Training Command
AFB	Air Force Base
AFI	Air Force Instruction
AGL	Above ground level
AICUZ	Air Installation Compatible Use Zone
APZ	Accident potential zone
AQCR	Air quality control region
BASH	Bird-Aircraft Strike Hazard
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CO	Carbon monoxide
CO ₂	Carbon Dioxide
COMBS	Contractor-operated and managed base supply
CY	Calendar year
CZ	Clear zone
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
E.O.	Executive Order
EA	Environmental Assessment
EIAP	Environmental impact analysis process
EIS	Environmental impact statement
ELP	Emergency landing pattern
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAR	Federal aviation regulation
FICAN	Federal Interagency Committee on Aviation Noise
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FONSI	Finding of no significant impact
FY	Fiscal year
GLOC	Gravity-induced loss of consciousness
GTRA	Golden Triangle Regional Airport
HAP	High Accident Potential
HMMP	Hazardous Materials Management Plan
HUD	United States Department of Housing and Urban Development
HW	Hazardous waste
HWMP	Hazardous waste management plan
IFR	Instrument Flight Rules
IR	Military training route flown using IFR procedures

IRP	Installation Restoration Program
JPATS	Joint primary aircraft training system
kWh	Kilo Watt hour
lbs	Pounds
lbs/ft ³	Pound(s) per cubic foot
L _{dnmr}	Onset rate-adjusted monthly day-night average A-Weighted sound level
L _{max}	Maximum Sound Level
MBtu	Thousand British thermal unit
Mcf	Million cubic feet
MFH	Military family housing
MOA	Military operations area
mph	Miles per hour
MSL	Mean sea level
MSW	Municipal solid waste
MTR	Military training route
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NLR	Noise level reduction
NM	Nautical mile(s)
NO	Nitric oxide
N ₂ O	Nitrous oxide
NO ₂	Nitrogen dioxide
NO _x	Nitrogen oxides
O ₃	Ozone
Pb	Lead
PM ₁₀	Particulate matter equal to or less than 10 micrometers in aerodynamic diameter
ppm	Parts per million
psf	Pounds per square foot
RAPCON	Radar approach control
RCRA	Resource Conservation and Recovery Act
ROI	Region of influence
RSU	Runway supervisory unit
SEL	Sound exposure level
SIP	State Implementation Plan
SO ₂	Sulphur dioxide
SO _x	Sulphur oxides
SR	Slow-speed, low-altitude training route
SUPT	Specialized Undergraduate Pilot Training
SWPPP	Storm Water Pollution and Prevention Plan
the Base	Columbus AFB
tpy	Tons per year
TSP	Total suspended particulates
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VFR	Visual Flight Rules

VOC	Volatile organic compound
VR	MTR flown using VFR procedures

CHAPTER 1

PURPOSE OF AND NEED FOR ACTION

This chapter has five sections: a statement of the purpose of and need for action; the location of the action; a summary of the scope of the environmental review; identification of applicable regulatory requirements; and an overview of the organization of the document.

1.1 PURPOSE OF AND NEED FOR ACTION

The purpose of the action is to replace the T-37, a twin-engine jet primary training aircraft, and associated ground-based training system (simulators and courseware) used in Specialized Undergraduate Pilot Training (SUPT) at Columbus Air Force Base (AFB), Mississippi, with the Joint Primary Aircraft Training System (JPATS). The JPATS includes the T-6 aircraft, which is a higher performance and more modern single-engine turboprop aircraft, and a ground-based training system consisting of aircraft simulators and academic courseware.

The SUPT program is a four-track program. At the completion of the T-37 phase, students are placed in one of four tracks to train student pilots in the category of aircraft to which the student will be assigned after graduation. The four tracks are categorized as Bomber-Fighter, Tanker-Transport, Tactical Airlift, and Helicopter, and use the T-38, T-1, T-44, and helicopter aircraft, respectively. Upon completion of SUPT, new pilots are assigned to other Air Force installations to fly various Air Force aircraft.

The Air Force has determined a need to replace the T-37 aircraft, which has reached the end of its useful life cycle. The aircraft has shortcomings in performance and design, training effectiveness, safety, and supportability. Production of the aircraft began in 1952 and ended in 1968. As aircraft are lost to attrition, they cannot be replaced. The T-37 has been used as the primary training aircraft in Air Force pilot training since the 1950s.

The T-37 does not provide adequate training for the four SUPT tracks. Pilot attrition rates from the tracks are higher than desired and can be partially attributed to the current T-37-based program. Due to the aircraft shortcomings, primary aircraft training instructors have difficulty predicting the students' potential to complete more advanced programs based on their performance in the T-37. The aircraft has analog instrumentation and navigation systems designed in the 1950s. Modern instrumentation (such as digital cockpit displays and global positioning navigational systems) is needed to train future military pilots during the SUPT program.

The T-37 also has safety-related concerns. The ejection seat is not safe to operate during takeoff or landing. The aircraft is not pressurized, causing pressure-related physiological incidents to occur at an unacceptable rate. Gravity-induced loss of consciousness (GLOC) occurs in the aircraft, which cannot be retrofitted with anti-gravity force restraining systems due to weight and power limitations. The T-37 GLOC rate is twice that of the T-38, which is equipped with an anti-gravity force restraining system.

The T-37 has many aircraft components that are out of production. Spare parts are not regularly produced, requiring special production runs when parts are needed. Thus,

spare parts cost more than parts for aircraft currently in production. While Department of Defense (DoD) aircraft are not required to meet Federal Aviation Administration (FAA) Stage III noise standards, the T-37 emits two to five times the noise level permitted by the Federal Aviation Regulation (FAR) 36.

1.2 LOCATION OF THE PROPOSED ACTION

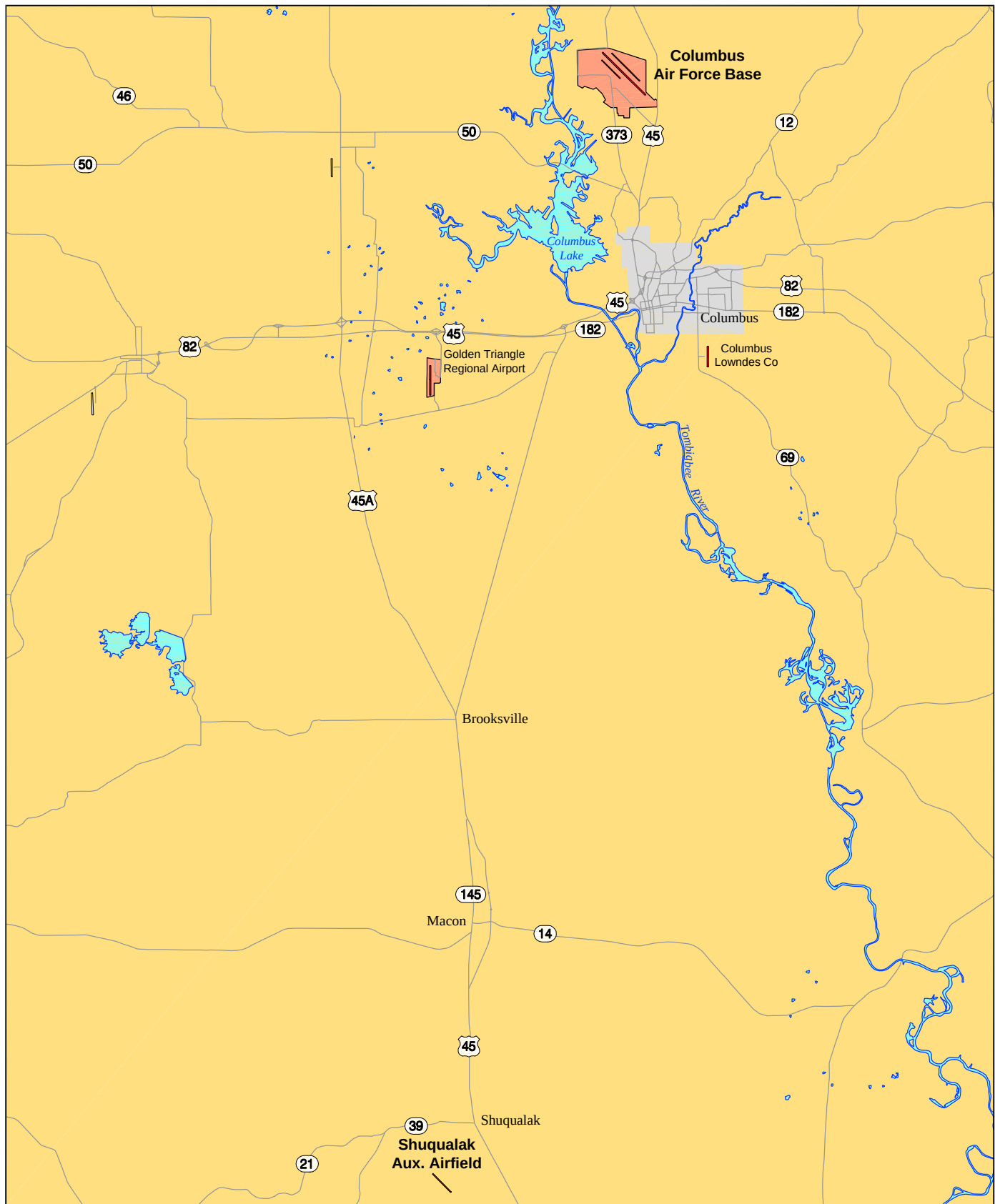
Columbus AFB is located in Lowndes County, approximately ten miles north of the City of Columbus, Mississippi. Columbus AFB T-6 aircrews also would accomplish takeoffs and landings at the Base's Shuqualak Auxiliary Airfield in Noxubee County, which is about 50 miles south of Columbus AFB, as well as at the Golden Triangle Regional Airport (GTRA), which is 13 miles southwest of the Base. Two military training routes (MTRs) that overfly portions of Mississippi and Alabama would be used by Columbus AFB T-6 aircrews for low-level navigation training flights. Figure 1.2-1 indicates the locations of the Base, Shuqualak Auxiliary Airfield, and the GTRA. Figure 1.2-2 shows the two MTRs.

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 analysis. The Air Force Environmental Impact Analysis Process (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 environmental impact evaluation designed to ensure that deciding authorities have a proper understanding of the potential environmental consequences of a contemplated course of action. The CEQ regulations require that an environmental assessment (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 analysis determines that the environmental effects would not be significant, a finding of no significant impact (FONSI) will be prepared;
- Facilitate preparation of an EIS, when required; or
- Aid an agency's compliance with NEPA when no EIS is necessary.

This EA assesses the proposed basing and operation of T-6 aircraft at Columbus AFB as well as the No Action Alternative. This document identifies, describes, and



Columbus AFB EA

LEGEND

- Runway
- Roadway
- Urbanized Areas



Key Map



Location Map Columbus AFB

Figure 1.2-1

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LEGEND



SR Slow-Speed, Low Altitude Training Route
VR MTR Flown Using Visual Flight Rules

Columbus AFB T-6 Military Training Routes

Figure 1.2-2

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evaluates the potential environmental impacts that may result from implementation of the Proposed Action or No Action Alternative, as well as possible cumulative impacts from other reasonably foreseeable actions planned for the Base. This EA also identifies required environmental permits relevant to the Proposed Action. 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. Finally, the EA identifies mitigation measures to prevent or minimize environmental impacts, if required.

The following biophysical resources are assessed in this EA: airspace and airfield operations (to include aircraft safety and bird-aircraft strike hazard); noise; land use; air quality; infrastructure and utilities (energy, solid waste, storm water, and transportation); biological resources (MTRs only); hazardous materials and wastes; and environmental justice.

Resources not Considered in this Environmental Assessment

The lowest floor of any Columbus AFB military operations area (MOA) is 8,000 feet above ground level (AGL) in the southern half of the Columbus 1 MOA. MOAs are used to practice training events such as aerobatic maneuvers, stall recovery, and other airmanship maneuvers. The volume of airspace required by the T-6 to execute these events is nearly identical to that required by the T-37. Thus, no change to the dimensions of any MOA would be anticipated by the action. Changes to the use of MOAs that have a base altitude of 3,000 feet AGL or higher, as well as non-supersonic aircraft activities at or above 3,000 feet AGL, are categorically excluded from environmental analysis according to 32 CFR 989, Appendix B, A2.3.35. For these reasons, airspace operations, noise, and air quality analysis are not accomplished for aircraft operations in the MOAs that would be used by T-6 aircraft.

The project associated with the Proposed Action is located in a portion of the Base that has been disturbed and altered by previous activities. For these reasons, no geologic, physiographic, or soils impacts would be anticipated from the proposed activities, and earth resources are not assessed in this EA.

There are no surface water features in or adjacent to the Proposed Action construction site. The water table is approximately 10 feet below ground surface at the Base, and it is not anticipated that construction activity would occur at this depth. The one construction project associated with the T-6 basing would not be located within or adjacent to the 100-year floodplain. Standard erosion control measures to prevent storm water pollution would be implemented during construction activities to minimize soil disturbance, and prevent erosion and sedimentation at the work site. For these reasons, no surface water, ground water, or floodplain impacts would be anticipated and the resources are not assessed in this EA.

There would be no change in the number of personnel authorizations or the maximum sustainable number of students at Columbus AFB as a result of the proposed activities. Therefore, there would be no long-term change in water consumption or wastewater generation from the current levels. For these reasons, no water or wastewater system impacts would be anticipated and the resources, which are typically included in infrastructure and utilities, are not assessed in this EA.

The Proposed Action construction project would occur within a developed, maintained area of Columbus AFB that has highly modified and disturbed landscape. There would be no disturbance of vegetation outside the developed areas of the Base or outside the Base boundary. A 1993 Nature Conservancy field survey found no endangered, threatened, or special status species on the Base (USAF 2001a). The Proposed Action construction project would not occur in or adjacent to a wetland. Thus, no adverse effects would be anticipated to biological resources and the resource is not assessed at Columbus AFB in this EA. However, aircraft operations on the MTRs have the potential to affect wildlife, especially bird species. Therefore, the biological resources evaluation in this EA is limited to wildlife within the MTR corridors.

A National Park Service report of an archaeological reconnaissance survey states that Columbus AFB has little potential for containing archaeological sites. The report concluded that no further archaeological testing was required on the Base (Ehrenhard 1986). No significant properties, structures, or sites eligible for the National Register of Historic Places or other formal recognition have been identified on Columbus AFB. In addition, the Base has few items considered to be historically significant (USAF 2001a). The construction project site would be located in an area of the Base that has been disturbed by previous activities. However, if any suspected archaeological sites are encountered during a project, the contractor must protect the site in place and report the discovery to the government. No adverse effects on archaeological or historical resources would be anticipated from activities at Columbus AFB. The potential for effects to archaeological and historical sites from aircraft overflight while operating on a MTR would be limited to noise. Neither the T-6 nor any of the other aircraft that would operate on the MTRs produces noise at or above the level (*i.e.*, 127 decibels) at which damage could begin to occur to archaeological sites or historical structures. Therefore, archaeological and architectural resources are not addressed in this EA.

There would be no change in the number of personnel authorizations or the maximum sustainable number of students at Columbus AFB as a result of the Proposed Action. Thus, no long-term changes would be anticipated to area population, housing requirements, school enrollment, or economic factors (*i.e.*, sales volume, income, or employment). It is not anticipated that construction workers would relocate to the Columbus, Mississippi area as a result of the proposed activities. Thus, there would be no short-term impacts to area population, housing requirements, or school enrollment. There could be a positive benefit to the economic factors from the proposed construction activities. However, these benefits would end when the project is completed. For these reasons, socioeconomic resources are not assessed in this EA.

The distance between the one proposed construction project and the nearest Installation Restoration Program (IRP) site is about 1,300 feet. The site consists of fuel floating on the water table, which occurs 5 to 10 feet below ground surface. The Air Force anticipates initiating remediation activities for the site by the end of 2003. No IRP impacts would be anticipated due to the distance between the proposed construction site and the IRP site. No facilities demolition is anticipated under the proposed activities. Thus, asbestos containing materials and lead-based paint would not be encountered. The one new facility that would be constructed under the proposed activities would be constructed without either of these materials. For these reasons, IRP, asbestos, and lead-

based paint, which are typically included in hazardous materials and wastes, are not assessed in this EA.

1.3.1 Baseline Conditions

Baseline conditions used for environmental evaluation are assumed to be fiscal year (FY) 2002 (which begins October 1, 2001), except for resources directly related to aircraft operations (e.g., airspace and airfield operations, noise, and air quality). However, if FY02 data are not available, the most recent information will be used. For analysis purposes, a 7-year period from FY05 through FY11 will be assessed to represent the potential impacts at Columbus AFB for the duration of the Proposed Action.

The baseline conditions for airspace and airfield operations (to include MTR operations), noise, and air quality at Columbus AFB and the Shuqualak Auxiliary Airfield are the Proposed Action from a previous document 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* (USAF 1997a), which is referred to as the SUPT EA in this document. The EA 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 baseline conditions for airspace and airfield operations and noise at the GTRA are the baseline from a previous document entitled *Environmental Assessment, Temporary Use of a Training Airport, January 2003* (USAF 2003a), 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. Columbus AFB prepared separate Air Installation compatible Use Zone (AICUZ) studies in 1998 for the Base and Shuqualak Auxiliary Airfield. Each AICUZ Study was based on the Proposed Action noise contours for the respective airfield from the SUPT EA.

1.3.2 Analysis Incorporated by Reference

Columbus AFB T-37 aircrews conduct operations at outlying civil airfields at locations that include Tuscaloosa and Huntsville, Alabama, as well as other airfields in Mississippi. The SUPT EA assessed the potential impact from T-37 operations at these and other airfields for airspace and airfield operations, noise, land use, and air quality. No significant impacts were identified for T-37 operations at any of the airports. It is anticipated that T-6 aircrews from Columbus AFB also would use the same airfields for training and that the level of operations at the airfields would be approximately the same as that for the T-37. The airspace requirements for the T-6 are very similar to those for the T-37. Thus, the existing airspace environment could accommodate T-6 operations. Previously accomplished environmental studies for the basing and operation of the T-6 aircraft at Randolph and Laughlin AFBs in Texas have concluded that the noise and emissions from the T-6 are less than that from the T-37 (USAF 1997b, USAF 1999a). Thus, on a one-operation to one-operation comparison, it is anticipated that the noise and emissions from Columbus AFB T-6 operations at the outlying civil airfields likely would be less than that identified for T-37 operations at the particular airfields. Since these other airfields are civil airports, there are numerous other aircraft types operating at the

airports and contributing to the overall noise environment, and the T-6 would not be the sole source for noise. Overall, the noise and emissions from T-6 operations would not exceed that identified in the SUPT EA. For these reasons, the outlying civil airfields Columbus AFB T-6 aircrews would use are not included in this EA.

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

Additional permits and amendments to existing permits may be required by the Proposed Action. It would be the construction contractor’s responsibility to ensure permits are identified and obtained from Base, local, state, and federal agencies. Columbus AFB would coordinate permit requirements identified by the construction contractor during the project. Although the area for the one construction project for the Proposed Action is less than one acre, the contractor would ensure that a storm water pollution prevention plan is completed and approved before initiating construction activities if the site exceeds one acre.

1.5 ORGANIZATION OF THE DOCUMENT

This EA is organized into seven chapters.

<i>Chapter 1</i>	Contains an introduction; a statement of the need for the action; objectives for the action; scope of the environmental review; presentation of the applicable regulatory requirements; and the organization of the EA.
<i>Chapter 2</i>	Has an introduction; lists the selection criteria for alternatives; describes the alternatives considered but eliminated from further consideration; details the proposed alternatives; presents information on past, present, and reasonably foreseeable future actions; identifies the preferred alternative; and summarizes the environmental impacts for all alternatives.
<i>Chapter 3</i>	Contains a general description of the biophysical resources and baseline conditions that potentially could be affected by the Proposed Action or No Action Alternative.

<i>Chapter 4</i>	Discusses the environmental consequences.
<i>Chapter 5</i>	Lists preparers of this document.
<i>Chapter 6</i>	Lists the persons and agencies consulted in preparation of this EA.
<i>Chapter 7</i>	Lists the sources of the information used in preparation of this EA.
<i>Appendix A</i>	Air Force Form 813
<i>Appendix B</i>	Detailed Information on the Proposed Action MTRs
<i>Appendix C</i>	Interagency and Intergovernmental Correspondence for Environmental Planning

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CHAPTER 2

ALTERNATIVES, INCLUDING THE PROPOSED ACTION

This chapter has eight sections: a discussion of alternatives development; a discussion of the alternatives eliminated from further consideration; a description of the Proposed Action; a description of the No Action Alternative; descriptions of past, present, and reasonably foreseeable future actions; identification of the preferred alternative; a comparison of the environmental effects of all alternatives; and a discussion of mitigation requirements.

2.1 ALTERNATIVES DEVELOPMENT

The Air Force selected the T-6 to be the JPATS aircraft through a competitive process. The T-6 is a single-engine, tandem two-seat, turboprop primary training aircraft. The aircraft combines low fuel consumption with the overall economy of a turboprop. The T-6 burns about 108 gallons of fuel per hour, while the T-37 consumes about 182 gallons per hour. This equates to an approximate 41 percent reduction in fuel consumption. The T-6 has a maximum cruising speed of 270 knots indicated airspeed, a ceiling of 31,000 feet above mean sea level, and a maximum range of about 900 miles. The T-6 aircraft will provide improvements over the T-37 aircraft in several areas, including:

- An advanced avionics package with digital cockpit displays and navigation systems;
- An ejection seat that can operate during takeoff and landing operations;
- A pressurized cockpit;
- An anti-gravity restraining system; and
- Access to spare parts for an aircraft that is currently in-production.

The Air Education and Training Command (AETC) has provided undergraduate pilot training for Air Force pilots for many years. As such, the Command has experience in developing training syllabi to meet the needs of follow-on assignments for operational pilots. The command's current pilot training installations are organized to teach the skills necessary to produce a primary pilot. Due to AETC's responsibility for conducting undergraduate pilot training for many years, other commands have not developed the installation infrastructure, multitude of training aircraft, instructor pilots and ancillary requirements necessary to support the full spectrum of pilot training. The cost of establishing these resources in other commands is not feasible. Further, the lack of standardization from initial screening through advanced pilot training, if training were conducted at every installation where flying occurs, is of concern to the Air Force. Thus, the AETC was selected as the Command to develop and implement the JPATS primary pilot training program.

2.1.1 Selection of an Air Education and Training Command Installation

There are ten AETC installations that conduct formal flying training programs: Altus AFB, Oklahoma; Columbus AFB, Mississippi; Keesler AFB, Mississippi; Laughlin AFB, Texas; Little Rock AFB, Arkansas; Luke AFB, Arizona; Randolph AFB, Texas; Sheppard AFB, Texas; Tyndall AFB, Florida; and Vance AFB, Oklahoma.

The AETC conducts “large” aircraft flying training at Altus AFB. The base training includes transport aircraft such as the C-5, C-17, and KC-135R. Because of special facility requirements such as large hangars to accommodate these aircraft, it is not economically feasible to relocate the JPATS to Altus AFB. The flight characteristics of the “large aircraft” and the operational tempo at the Base also were considered. The difference in airspeeds of a large aircraft, as well as their altitudes and approach patterns, are not compatible with the flight characteristic of a primary training aircraft. In addition, the routine use of the same airspace around the Base by two different types of aircraft (*i.e.*, large and trainer) was considered a significant safety issue. Safety concerns include mixing the flight profiles of two different types of aircraft, having different airspeeds, approach and departure patterns, and the air turbulence associated with these aircraft. This safety issue would adversely affect the training programs for both types of aircraft since each type of aircraft would require its own block of time in which it would operate. With the current training tempo at Altus AFB, there would not be sufficient hours in a day to minimize conflict between these two totally different types of training programs. Therefore, after considering the existing installation mission and the additive effects of the JPATS program, Altus AFB was eliminated from further consideration.

Keesler AFB, which has only one runway, is the site for C-21 training. The C-21 is a small personnel transport jet. There is no room to add a second runway that would be needed for SUPT. For this reason, Keesler AFB was eliminated from further consideration.

Little Rock AFB is the site for C-130 training. The installation has undergone recent facility enhancements and modifications to support the C-130 pilot and loadmaster training programs. Additionally, the Base’s airspace would not allow for the supersonic flight phases of SUPT. Like Altus AFB, the beddown of the JPATS program with the existing flying training program would routinely place very dissimilar aircraft in the same airspace. This becomes a significant safety issue. Little Rock AFB was eliminated from further consideration for the JPATS program based on the economic cost of relocating its existing C-130 training, the types and availability of airspace, and the lack of compatibility between the C-130 and the T-6 flying training programs.

Luke and Tyndall AFBs respectively train F-16 and F-15 pilots. Each of these bases has developed infrastructures that support the respective programs, which have been at the installations for many years. Like Altus and Little Rock AFBs, the beddown of the JPATS program with the existing flying training program at Luke and Tyndall AFBs would routinely place dissimilar aircraft in the same airspace. This becomes a significant safety issue. Luke and Tyndall AFBs were eliminated from further consideration for the JPATS program based on the economic cost of relocating existing training, the types and availability of airspace, and the lack of compatibility between the F-16 and F-15 and the T-6 flying training programs.

The AETC, which is responsible for training Air Force and International military student pilots, uses the T-37 as the primary training aircraft in SUPT at Columbus AFB, as well as at Laughlin and Vance AFBs. T-37 instructor pilot training is accomplished at Randolph AFB. Additionally, the T-37 is used as the primary training aircraft in the Euro-North Atlantic Treaty Organization Joint Jet Pilot Training Program conducted at Sheppard AFB. The Air Force has a phased plan that would convert the T-37 squadrons at each of these bases to the JPATS.

2.1.2 Installation Considerations

The AETC has five bases where the conversion from T-37 aircraft to the JPATS and its T-6 aircraft could occur. Since the purchase of these aircraft is dependent on the funding received each year from the United States Congress, the timing of the conversion at any given installation is temporally staggered. In addition, each of these bases is geographically separated to the extent their aircraft and training programs do not overlap on a routine basis. The exception is the infrequent cross-country navigation trips from one base to another. Each installation records these transient arrivals and departures and considers them in their analysis of potential impacts. Thus, there is a temporal and spatial basis for considering each installation individually when considering the conversion to a new primary training aircraft.

Partial conversion at each installation was considered and dismissed for the following reasons:

- A portion of the primary aircraft training syllabus is conducted in simulators. Like the aircraft, funds to acquire simulators are phased. The initial funding would not support the number of simulators needed to make the training program efficient and effective under a partial conversion at each installation. Thus, the number of simulators that would be available would not support basing the aircraft and training programs for partial conversion at each of the bases.
- To ensure they maintain the highest instructional proficiency, as well as familiarity with the handling characteristics of the aircraft, instructor pilots are trained to fly a specific aircraft. Operating squadrons with a mix of T-37 and T-6 instructor pilots and aircraft for any time period other than that required to convert from one aircraft to the other is not an effective and efficient means of training.
- The T-6 and T-37 have different flying characteristics or capabilities and are configured differently. While scheduling the takeoffs, landings, and traffic pattern work to minimize conflict between T-37 and T-6 training events can be accomplished during the short transition period currently anticipated for each installation's conversion, a long-term conversion at any installation would be unacceptable to training efficiency and instructor pilot proficiency. Adding to the resultant lack of efficiency and proficiency is the disparity between the side-by-side instructor and student seating of the T-37 and the front and back seating of the T-6. The cockpit configuration affects the visual perspective for various facets of flying training. Changing between the two aircraft requires additional instructor pilot proficiency training, which reduces the overall efficiency of SUPT. Flying hours from the SUPT

programs would have to be transferred to the instructor pilot proficiency programs to support the additional requirement. This would impact the number of students that could be trained. Additional instructor pilot proficiency flying hours (and cost) would be required if the SUPT flying hour program were not decreased and the instructor pilot program were increased.

Alternatives that would base a number of fewer aircraft at each of the three SUPT bases were not considered because aircraft allocation is predicated on the number of aircraft each base needs to assure it can meet the operational levels associated with maximum sustainable pilot production for the respective installation.

2.2 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

The T-6 based JPATS was selected through a competitive process to fulfill the future pilot training requirements for the Air Force. Thus, the procurement process negated the need to consider other aircraft types as alternatives.

The use of other non-SUPT Air Force bases for the JPATS basing and operation was not considered a viable option. The purpose of the action is to replace only one (the T-37) of the three aircraft currently used in SUPT, which is conducted at three AETC SUPT bases, with a new primary training aircraft (T-6).

The JPATS conversions are currently in progress at Laughlin and Vance AFBs. Thus, Columbus AFB is the only base conducting SUPT at which the conversion has not occurred. For these reasons, there are no alternatives other than the Proposed Action and No Action Alternative at Columbus AFB.

2.3 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action is to convert from the T-37 to the T-6 at Columbus AFB. The conversion is expected to begin with facility construction in FY05. The first aircraft would arrive in FY06, with the last aircraft being delivered in FY11. The basing and operation plan keys on a gradual transition of aircraft, with the T-37s being removed from the Base at about the same rate as T-6s arrive. Columbus AFB currently has 96 T-37 aircraft. The conversion would place as many as 89 T-6s at the Base. There would be an estimated six-month overlap from the initial T-6 delivery until the departure of the first T-37. Beginning with the initial departure, T-37 aircraft would depart on a one-for-one basis with T-6 arrivals. Upon receipt of the last T-6, all T-37s would be relocated.

Military personnel requirements would remain at current levels. The T-6 instructor pilot changeover would continue at the same rate as that experienced for the T-37. As with the T-37, government civilian personnel, supported by contractor personnel, would perform T-6 aircraft maintenance activities. The total number of T-6 maintenance personnel would be nearly the same as that currently supporting the T-37.

Pilot production during and after the conversion is complete would be similar to current levels. Thus, the combined, total, SUPT average daily student load for Columbus AFB would be about 487 students.

No change in the types of support functions would be anticipated at Columbus AFB due to the conversion. Although the T-37 and T-6 are different aircraft, both have the same mission and neither aircraft is complex, requiring unique support.

2.3.1 Airfield and Military Training Route Operations

T-6 flying training operations would occur at Columbus AFB, the Shuqualak Auxiliary Airfield, and the GTRA. Traffic pattern altitude for the T-6 aircraft at Columbus AFB and Shuqualak Auxiliary Airfield would be 1,000 feet AGL, the same as the T-37. Because the T-6 is a single engine aircraft, aircrews would practice emergency landing patterns (ELPs) at Columbus AFB, Shuqualak Auxiliary Airfield, and the GTRA. The ELP would begin at 3,000 feet above the runway and descend to land in one continuous 360 degree turn (either right or left, depending on the runway in use and other aircraft in the traffic pattern) at 15 to 30 degrees of bank and a diameter of about 1.4 miles.

The sortie duration, the number and types of training events per sortie type (*i.e.*, contact, instrument, formation, and navigation), and the training sortie profile in the T-6 syllabus are very similar to the T-37 syllabus. Therefore, the number of T-6 airfield and sortie operations would be approximately the same as that currently flown by the T-37. Table 2.3-1 lists the airfield operations anticipated at Columbus AFB after the T-6 conversion is complete; Table 2.3-2 lists the operations projected for Shuqualak Auxiliary Airfield; and Table 2.3-3 presents the T-6 and other airfield operations expected at the GTRA. The annual T-6 operations at the GTRA are the same as that for Shuqualak Auxiliary Airfield. This level of operations presents the extreme condition that could occur at GTRA if the Shuqualak Auxiliary Airfield were closed for an extended period for an activity such as runway repair. Flying training would occur approximately 245 days per year at Columbus AFB and the GTRA and 200 days per year at Shuqualak Auxiliary Airfield. Table 2.3-4 lists the annual and monthly sortie operations that Columbus AFB T-6 aircrews would fly on the two MTRs. T-6 training also would occur at outlying civil airfields as discussed in Section 1.3.2.

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

- A sortie is a single military aircraft flight from initial takeoff through final landing.
- An airfield operation is the single movement or individual portion of a flight in the airfield airspace environment, such as one departure (takeoff), one arrival (landing), or one transit of the airport traffic area. The airfield airspace environment typically is referred to 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 low approach or a missed approach consists of two airfield operations, *i.e.*, one arrival and one departure. A closed pattern consists of two airfield operations (*i.e.*, one takeoff and one landing accomplished as a touch and go). The minimum number of airfield operations for one sortie is two operations, one takeoff (departure) and one landing (arrival).

- A sortie operation is defined as the use of one airspace unit (e.g., MOA, restricted area, MTR, or radar approach control airspace) by one aircraft. A sortie operation applies to flight activities outside the airfield airspace environment. Each time a single aircraft conducting a sortie operates in a different airspace unit, one sortie operation is counted for that unit.

Table 2.3-1 Annual and Average Daily Airfield Operations, Proposed Action, Columbus AFB

Aircraft	Arrivals and Departures		Closed Patterns		Total	
	Annual	Avg. Daily	Annual	Avg. Daily	Annual	Avg. Daily
Based						
T-1	20,959	85.55	38,925	158.88	59,884	244.43
T-6	70,875	289.29	173,521	708.25	244,396	997.54
T-38	27,256	111.25	64,824	264.59	92,080	375.84
subtotal	119,090	486.09	277,270	1,131.72	396,840	1,617.81
Transient						
C-12	87	0.28	0	0.00	87	0.28
C-21	100	0.32	0	0.00	100	0.32
KC-135	41	0.13	0	0.00	41	0.13
T-1	22	0.07	0	0.00	22	0.07
T-6	193	0.62	0	0.00	193	0.62
T-38	564	1.81	0	0.00	564	1.81
F-16	334	1.07	0	0.00	334	1.07
SE	28	0.09	0	0.00	28	0.09
CH-46	37	0.12	0	0.00	37	0.12
Subtotal	1,406	4.51	0	0.00	1,406	4.51
Total	120,496	490.60	277,270	1,131.72	398,246	1,622.32

Note: SE=single engine. Transient aircraft operations are based on 312 days per year.

Table 2.3-2 Annual and Average Daily Airfield Operations, Proposed Action, Shuqualak Auxiliary Airfield

Aircraft	Arrivals and Departures		Closed Patterns		Total	
	Annual	Avg. Daily	Annual	Avg. Daily	Annual	Avg. Daily
T-6	23,388	116.94	70,164	350.82	93,552	467.76

Table 2.3-3 Annual and Average Daily Airfield Operations by Columbus AFB Aircraft, Proposed Action, Golden Triangle Regional Airport

Aircraft	Arrivals and Departures		Closed Patterns		Total	
	Annual	Avg. Daily	Annual	Avg. Daily	Annual	Avg. Daily
Columbus AFB Aircraft						
T-6	23,388	116.94	70,164	350.82	93,552	467.76
Civil Aircraft						
Learjet	7,242	19.84	0	0.00	7,242	19.84
Turboprop	7,300	24.00	0	0.00	7,300	24.00
Twin Engine	1,708	4.68	307	0.84	2,015	5.52
Single Engine	1,701	4.66	307	0.84	2,008	5.50
Subtotal	17,951	53.18	614	1.68	18,565	54.86
Total	41,339	170.12	70,778	352.50	112,117	522.62

Source: USAF 2003 for average daily civil aircraft operations. Annual civil aircraft operations are based on 365 days per year. The civil aircraft operations also reflect the baseline condition for the GTRA.

Table 2.3-4 Proposed Action Military Training Route Operations

	Aircraft Type			
Route	T-1	T-6	T-38	Total
VR-1014				
Annual	63	805	522	1,390
Monthly	5	67	44	116
SR-137				
Annual	0	2,416	0	2,416
Monthly	0	201	0	201

Note: Monthly operations rounded to the nearest whole number. Figure 1.2-2 depicts the locations of the two MTRs.

As indicated in Table 2.3-4, Columbus AFB T-6 aircrews would accomplish low-level navigation training on two existing MTRs that are scheduled and coordinated by Columbus AFB. Routes flown using Visual Flight Rules (VFR) procedures (VR routes) allow aircraft to operate below 10,000 feet above mean sea level (MSL) at speeds in excess of 250 knots (288 mph) along DoD/FAA mutually developed and published routes in VFR conditions. Slow Routes (SR) are slow-speed, low-altitude training routes that operate below 1,500 feet AGL at airspeeds of 250 knots or less. The routes would be flown at altitudes as low as 500 feet AGL. MTRs are defined along a route centerline with boundaries that parallel the centerline on each side. The boundaries for the routes considered for the Proposed Action extend to distances as great as five miles from the centerline. The term “MTR corridor” used in this EA includes the airspace as well as the ground surface between the route boundaries.

Construction Project

Several existing facilities would be used to support the T-6 aircraft during and after the conversion. One facility would be constructed beginning in 2005. A 12,000 square foot Contractor Operated and Managed Base Supply (COMBS) facility would be constructed in 2005 and used for storage of T-6 aircraft spare parts and equipment, shipping and receiving of material, engine uncrating, removal and application of preservation material, and for quick engine change kit removal and installation. Minor maintenance of ground support equipment would occur in the facility. The facility would have an oil/water separator to remove petroleum materials from wastewater prior to entry into the wastewater collection system. Figure 2.3-1 depicts the location of the project.

2.4 DESCRIPTION OF THE NO ACTION ALTERNATIVE

The Air Force would continue to use the T-37 as the primary training aircraft in the SUPT program at Columbus AFB. The number of military, government civilian, and contractor personnel at the Base, as well as the average daily student load would remain at approximately the current levels associated with maximum SUPT pilot production at the Base. Likewise, T-37 operations would continue at the baseline levels. Columbus AFB T-37 aircrews would continue to use the airspaces and airfields currently used for flying training. Table 2.4-1 lists the airfield operations at Columbus AFB, Table 2.4-2 presents the Shuqualak Auxiliary Airfield operations, and Table 2.4-3 lists the MTR operations for all Columbus AFB aircraft. Figure 2.4-1 shows the location of the 10 MTRs.

Table 2.4-1 Annual and Average Daily Airfield Operations, Baseline, Columbus AFB

	Arrivals and Departures		Closed Patterns		Total	
Aircraft	Annual	Avg. Daily	Annual	Avg. Daily	Annual	Avg. Daily
Based						
T-1	20,959	85.55	38,925	158.88	59,884	244.43
T-37	70,875	289.29	173,521	708.25	244,396	997.54
T-38	27,256	111.25	64,824	264.59	92,080	375.84
subtotal	119,090	486.09	277,270	1,131.72	396,840	1,617.81
Transient						
T-1	184	0.50	0	0.00	184	0.50
T-37	216	0.59	0	0.00	216	0.59
T-38	910	2.49	0	0.00	910	2.49
SE	106	0.29	0	0.00	106	0.29
C-12	210	0.58	0	0.00	210	0.58
C-21	68	0.19	0	0.00	68	0.19
A-10	184	0.50	0	0.00	184	0.50
C-9	172	0.47	0	0.00	172	0.47
F-16	276	0.76	0	0.00	276	0.76
UH-1	138	0.38	0	0.00	138	0.38
Subtotal	2,464	6.75	0	0.00	2,464	6.75
Total	121,554	492.84	277,270	1,131.72	399,304	1,624.56

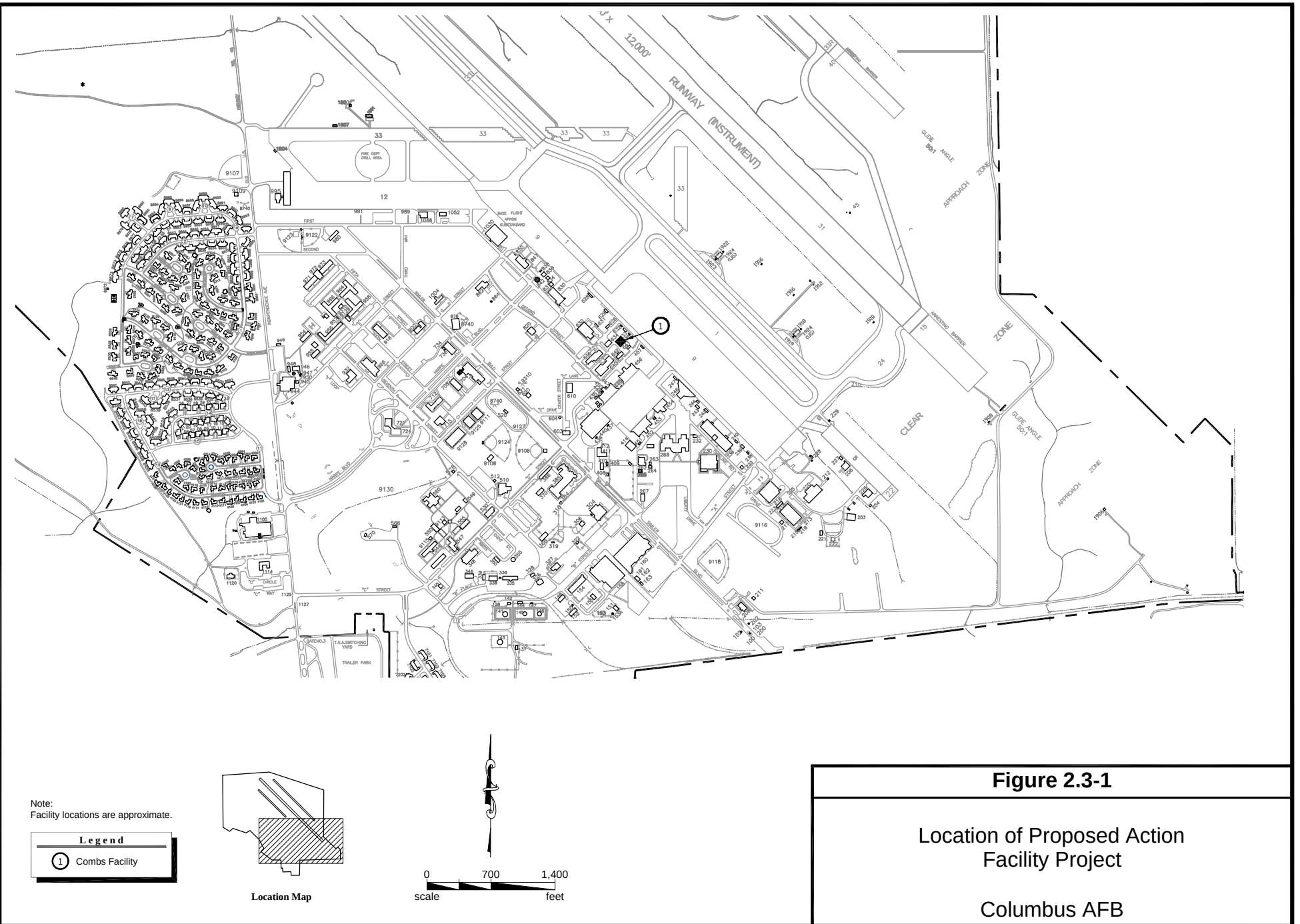
Note: SE=single engine.

Source: USAF 1997a.

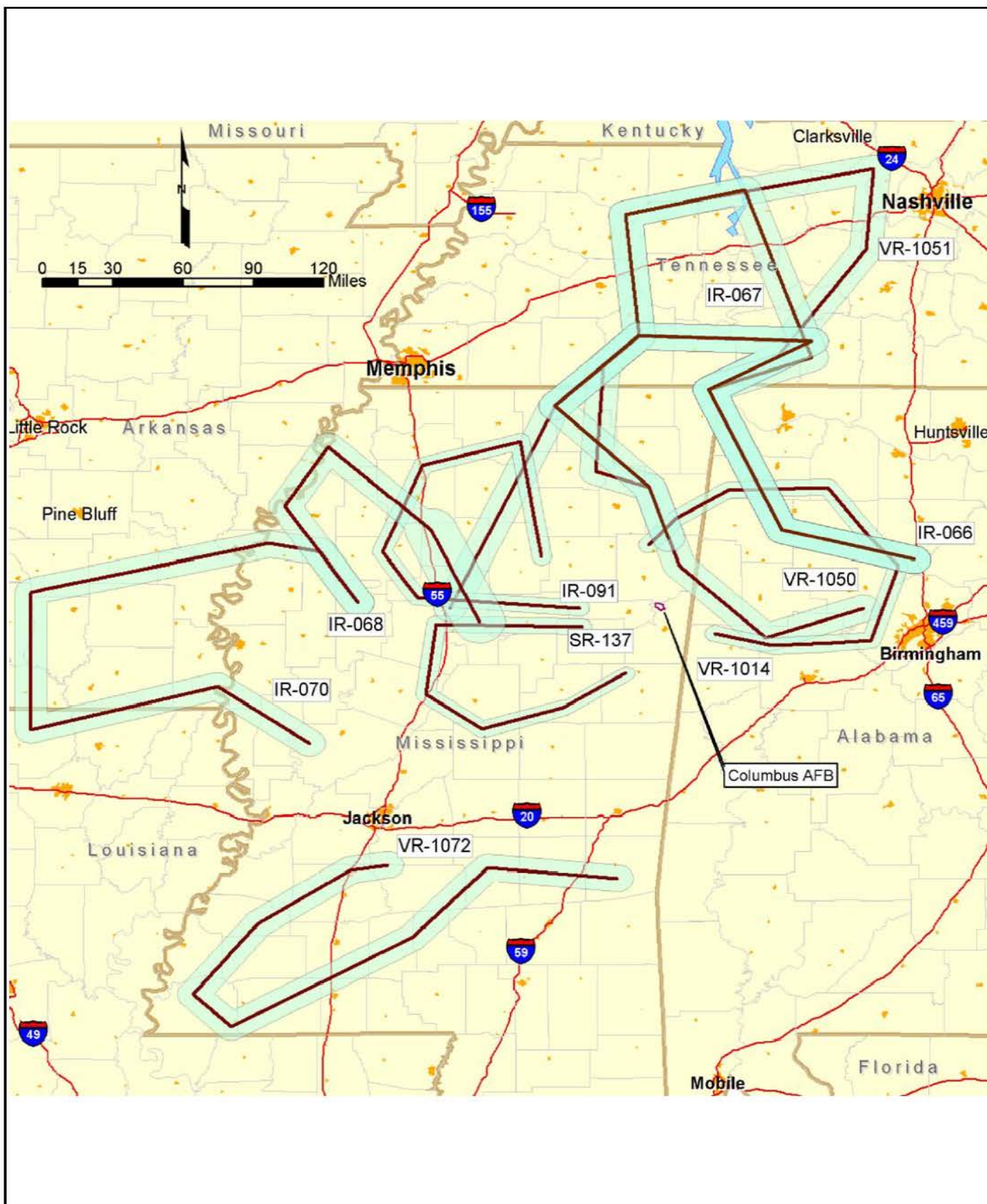
Table 2.4-2 Annual and Average Daily Airfield Operations, Baseline, Shuqualak Auxiliary Airfield

	Arrivals and Departures		Closed Patterns		Total	
Aircraft	Annual	Avg. Daily	Annual	Avg. Daily	Annual	Avg. Daily
T-37	23,388	116.94	70,164	350.82	93,552	467.76

Source: USAF 1997a.



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LEGEND

-  Military Training Route Centerline
-  Corridor Boundary
- SR** Slow-Speed, Low Altitude Training Route
- VR** MTR Flown Using Visual Flight Rules
- IR** MTR Flown Using Instrument Flight Rules

Columbus AFB Military Training Routes

Figure 2.4-1

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Table 2.4-3 Baseline Military Training Route Operations

	Aircraft Type			
Route	T-1	T-37	T-38	Total
IR-066				
Annual	125	0	522	647
Monthly	10	0	44	54
IR-067				
Annual	63	0	0	63
Monthly	5	0	0	5
IR-068				
Annual	63	0	0	63
Monthly	5	0	0	5
IR-070				
Annual	312	0	0	312
Monthly	26	0	0	26
IR-091				
Annual	125	200	522	847
Monthly	10	17	44	71
VR-1014				
Annual	63	805	522	1,390
Monthly	5	67	44	116
VR-1050				
Annual	63	0	0	63
Monthly	5	0	0	5
VR-1051				
Annual	313	0	0	313
Monthly	26	0	0	26
VR-1072				
Annual	313	0	0	313
Monthly	26	0	0	26
SR-137				
Annual	0	2,416	0	2,416
Monthly	0	201	0	201

Note: Monthly operations rounded to the nearest whole number.

Sources: USAF 1997a.

As indicated in Table 2.4-3, Columbus AFB aircrews would continue to accomplish low-level navigation training at altitudes as low as 500 feet AGL on 10 existing MTRs that are scheduled and coordinated by Columbus AFB. Routes flown using Instrument Flight Rules (IFR) procedures (IRs) allow aircraft to operate below 10,000 feet above MSL at speeds in excess of 250 knots (288 mph) along DoD/FAA mutually developed and published routes in IFR conditions.

2.5 DESCRIPTION OF PAST, PRESENT, AND REASONABLY FORESEEABLE FUTURE ACTIONS

Complete environmental impact analysis of the Proposed Action and alternatives must consider cumulative impacts due to other actions. 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.” Columbus AFB personnel identified 16 other action construction projects that would occur during the time period associated with the Proposed Action. A 17th action would include changes to T-1 and T-38 operations at Columbus AFB, GTRA, and on the MTRs as well as a

modification to the T-38 aircraft. The following paragraphs describe the other projects. Table 2.5-1 presents data for the respective projects, while Figure 2.5-1 shows the location of the other action projects. The following paragraphs briefly describe each of the projects.

Table 2.5-1 Construction Project Information, Cumulative Condition, Columbus AFB

Project	Location Number	New Construction (Square Feet)	Demolition (Square Feet)	Net Change in Square Feet	Start Date	Duration (months)
Repair Taxiway D	1	576 ¹	576	0	05	6
Construct Chapel Annex	2	2,800	0	+2,800	05	9
Demolish Capitol Village Military Family Housing	3	0	80,000 ⁵	-80,000	05	6
Privatize Capitol Village Military Family Housing	4	247,660 ²	539,200 ²	-291,540	05	24
Construct Fire Station	5	29,278	0	+29,278	06	12
Replace State Village Military Family Housing Units	6	217,210 ³	171,200 ³	+46,010	07	24
Construct T-1 Squadron Operations Facility	7	22,927	0	+22,927	07	12
Replace Magnolia Village Military Family Housing Units	8	154,044 ⁴	140,800 ⁴	+13,244	06	24
Construct Parking Lot, Building 216	9	6,428	0	+6,428	07	3
Construct Addition to Vehicle Maintenance Facility	10	1,939	0	+1,939	07	6
Construct Addition to and Alter Open Mess and Golf Complex	11	19,600	0	+19,600	07	12
Construct Child Development Center	12	20,656	8,310	+12,346	06	9
Construct Base Logistics Complex	13	181,695	126,185	+55,510	09	24
Construct Combat Arms Training Facility	14	8,800	0	+8,800	09	12
Construct Nondestructive Inspection Facility	15	9,688	8,805	+883	07	12
Construct Unaccompanied Officers' Quarters Commons Area	16	7,998	0	+7,998	08	9
Total	--	931,299	1,075,076	-143,077	--	--

1 Size for Repair Taxiway D is the area within the taxiway estimated to be removed and replaced by the project.

2 Size reflects the estimated area of the 122 units that would be constructed based on an assumed 1,630 square feet per unit. It is estimated the area of the 337 units to be demolished averages 1,200 square feet per unit. It is also assumed that 400 square feet of driveway and sidewalk would be demolished and constructed for each unit.

3 Size reflects the estimated area of the 107 units that would be constructed based on 1,630 square feet per unit plus 400 square feet of driveway and sidewalk per unit. It is estimated that the area of the 107 units to be demolished averages 1,200 square feet per unit plus 400 square feet of driveway and sidewalk per unit.

4 Size reflects the estimated area of the 88 units that would be constructed based on 1,350 square feet per unit plus 400 square feet of driveway and sidewalk per unit. It is estimated that the area of the 88 units to be demolished averages 1,200 square feet per unit plus 400 square feet of driveway and sidewalk per unit.

5 It is estimated that the area of the 50 units to be demolished averages 1,200 square feet per unit plus 400 square feet of driveway and sidewalk per unit.

Note: Location number corresponds to project location on Figure 2.5-1. Size depicts total surface area for the facility. Start date reflected as FY.

T-1 and T-38 Airfield and MTR Operations Changes and T-38 Aircraft Modification. Other flying training changes have occurred at Columbus AFB since the SUPT EA was completed. The AT-38 flying training program was transferred to Moody AFB, Georgia. Additionally, T-1 and T-38 aircraft flight tracks and profiles at Columbus AFB, as well as the number of T-1 and T-38 airfield operations accomplished at the Base and on the MTRs, have changed since the SUPT EA was accomplished. As a result of refinements to how Columbus AFB accomplishes the SUPT program and as assessed in the SUPT EA, T-1 airfield operations at the Base have decreased since the SUPT EA was completed and T-38 operations have increased. Additionally, the numbers of T-1 and T-38 MTR operations have changed since the SUPT EA was completed. The Air Force is modifying T-38 aircraft from the current T-38A to the T-38C. One of the aircraft modifications is a minor change to the engine and the air inlet, which changes the noise produced by the aircraft. Thus, the cumulative condition would include the proposed T-6 basing, T-1 and T-38 airfield and MTR operations refinements, and the T-38 engine modification. Additionally, T-1 aircraft would conduct airfield operations at the GTRA concurrent with planned T-6 operations at the airport. Table 2.5-2 lists the anticipated Columbus AFB airfield operations, Table 2.5-3 presents the GTRA operations, and Table 2.5-4 contains the MTR operations for the cumulative condition. The IRs, VRs, and SR would be flown at altitudes as low as 500 feet AGL. Cumulative impacts would not occur at Shuqualak Auxiliary Airfield since no T-1 or T-38 operations would be conducted at the airfield.

Table 2.5-2 Annual and Average Daily Airfield Operations, Cumulative Condition, Columbus AFB

Aircraft	Arrivals and Departures		Closed Patterns		Total	
	Annual	Avg. Daily	Annual	Avg. Daily	Annual	Avg. Daily
Based						
T-1	21,560	88.00	4,900	20.00	26,460	108.00
T-6	70,875	289.29	173,521	708.25	244,396	997.54
T-38	44,100	180.00	104,885	428.10	148,985	608.10
subtotal	136,535	557.29	283,306	1,156.35	419,841	1,713.64
Transient						
C-12	87	0.28	0	0.00	87	0.28
C-21	100	0.32	0	0.00	100	0.32
KC-135	41	0.13	0	0.00	41	0.13
T-1	22	0.07	0	0.00	22	0.07
T-6	193	0.62	0	0.00	193	0.62
T-38	564	1.81	0	0.00	564	1.81
F-16	334	1.07	0	0.00	334	1.07
SE	28	0.09	0	0.00	28	0.09
CH-46	37	0.12	0	0.00	37	0.12
Subtotal	1,406	4.51	0	0.00	1,406	4.51
Total	137,942	561.80	283,306	1,156.35	421,248	1,718.15

Note: SE=single engine. Transient aircraft operations are based on 312 days per year.

Table 2.5-3 Annual and Average Daily Airfield Operations by Columbus AFB Aircraft, Cumulative Condition, Golden Triangle Regional Airport

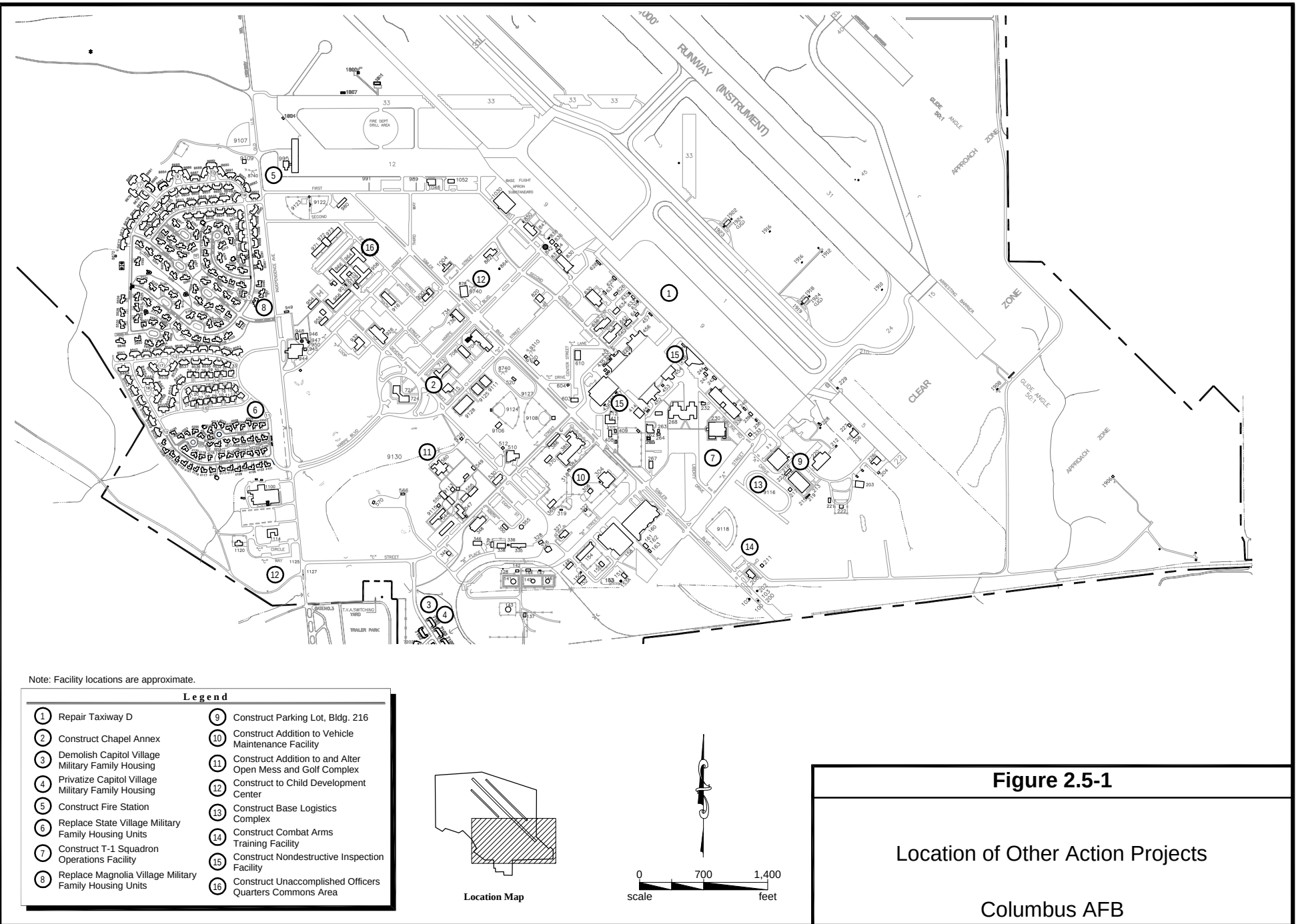
Aircraft	Arrivals and Departures		Closed Patterns		Total	
	Annual	Avg. Daily	Annual	Avg. Daily	Annual	Avg. Daily
Columbus AFB Aircraft						
T-6	23,388	116.94	70,164	350.82	93,552	467.76
T-1	7,350	30.00	9,800	40.00	17,150	70.00
Subtotal	30,738	146.94	79,964	390.82	110,702	537.76
Civil Aircraft						
Learjet	7,242	19.84	0	0.00	7,242	19.84
Turboprop	7,300	24.00	0	0.00	7,300	24.00
Twin Engine	1,708	4.68	307	0.84	2,015	5.52
Single Engine	1,701	4.66	307	0.84	2,008	5.50
Subtotal	17,951	53.18	614	1.68	18,565	54.86
Total	48,689	200.12	80,578	392.50	129,267	592.62

Source: USAF 2003 for average daily civil aircraft operations. Annual civil aircraft operations are based on 365 days per year. The civil aircraft operations also reflect the baseline condition for the GTRA.

Table 2.5-4 Cumulative Condition Military Training Route Operations

	Aircraft Type			
Route	T-1	T-6	T-38	Total
IR-066				
Annual	0	0	360	360
Monthly	0	0	30	30
IR-067				
Annual	63	0	0	63
Monthly	5	0	0	5
IR-068				
Annual	120	0	0	120
Monthly	10	0	0	10
IR-070				
Annual	720	0	0	720
Monthly	60	0	0	60
IR-091				
Annual	72	0	360	432
Monthly	6	0	30	36
VR-1014				
Annual	0	805	360	1,165
Monthly	0	67	30	97
VR-1050				
Annual	63	0	0	63
Monthly	5	0	0	5
VR-1051				
Annual	120	0	0	120
Monthly	10	0	0	10
VR-1072				
Annual	72	0	0	72
Monthly	6	0	0	6
SR-137				
Annual	0	2,416	0	2,416
Monthly	0	201	0	201

Note: Monthly operations rounded to the nearest whole number.



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Repair Taxiway D. The area has an underground hydrant refueling system that has eight lateral lines and several covered refueling outlets. Seven of the lateral lines were abandoned in place in the early 1980s. One line remains active and is used to refuel transient aircraft. The valves connecting the seven lateral abandoned fuel lines that run to the refueling outlets have been removed at the two pump houses on the east edge of the apron. However, there is no record that the lateral lines were purged of residual fuel. Additionally, 24 covered refueling outlets that are approximately 6 foot by 4 foot and that extend about 3 inches above the surface still remain. The concrete associated with the refueling outlets would be shaved to be flush with the surrounding surface, existing pipes in the outlet would be capped, and voids would be filled with concrete. Additionally, the abandoned fuel lines would be purged.

Construct Chapel Annex. The additional space would be used to support existing activities at which attendance frequently exceeds the capacity of the current facility.

Demolish Capitol Village Military Family Housing. Under this action, 50 military family housing (MFH) units in the Capitol Village MFH area would be demolished because they are in excess of the Air Force's requirements. There would be a reduction of about 200 persons residing in MFH based on an assumed four persons per unit.

Privatize Capitol Village Military Family Housing. Under this action, the 337 housing units in the Capitol Village MFH area would be conveyed to a contractor and demolished because they no longer meet Air Force housing standards. The contractor then would construct and manage 122 new units in the same area. To achieve an indoor day-night average sound level (DNL) of 45 decibels (expressed as A-weighted sound, *i.e.*, dBA) or less, the new units would be designed and constructed to the Air Force's noise level reduction (NLR) policy of reducing interior noise by 25 dBA for family housing units in the DNL 65-70 dBA noise zone and 30 dBA for units in the DNL 70-75 dBA zone. It is estimated 488 persons would reside in the 122 new units based on an assumed four persons per unit. Using the same occupancy rate, it is estimated that 1,348 persons reside in the 337 units that would be demolished under the action. Thus, there would be a net decrease of 860 residents in Capitol Village MFH.

Construct Fire Station. The new fire station would have 12 drive-through stalls, an infection control area, an equipment maintenance room, an exercise and physical training room, and upgraded living and staff areas. The sleeping area would have individual quarters affording NLR and protection from the hazards of the vehicle parking area of the station. This action was assessed in an EA entitled *Environmental Assessment for Six Military Construction Projects in Fiscal Years 00-05, Columbus Air Force Base, Mississippi, March 1999* (USAF 1999b).

Replace State Village Military Family Housing Units. Under the action, 107 units in the State Village MFH area would be demolished because they no longer meet Air Force housing standards and then replaced with the same number of new units. The new units would be constructed to meet the NLR policy explained for the Capitol Village MFH Privatization project. It is estimated that the number of residents in the new units would be the same as the current condition because the number of State Village MFH units would be the same for both conditions. This action was assessed in an EA

entitled *Environmental Assessment, Military Family Housing Construction Project, Columbus Air Force Base, Mississippi, June 1998* (USAF 1998c).

Construct T-1 Squadron Operations Facility. The new facility would provide office space for instructor pilots and administrative personnel, training space for students, briefing/assembly rooms, and the life support equipment function.

Replace Magnolia Village Military Family Housing Units. Under the action, 88 units in the Magnolia Village MFH area would be demolished because they no longer meet Air Force standards and then replaced with the same number of new units. The new units would be constructed to meet the NLR policy explained for the Capitol Village MFH Privatization project. It is estimated that the number of residents in the new units would be the same as the current condition because the number of Magnolia Village MFH units would be the same for both conditions. This action was assessed in an EA entitled *Environmental Assessment, Military Family Housing Construction Project, Columbus Air Force Base, Mississippi, June 1998* (USAF 1998c).

Construct Parking Lot, Building 216. The existing 4,335 square-foot parking lot that supports 87 vehicles would be expanded with a 6,428 square-foot second lot for a combined capacity of 216 vehicles.

Construct Addition to Vehicle Maintenance Facility. The addition would provide space for an additional vehicle maintenance bay.

Construct Addition and Alter Open Mess and Golf Complex. This action would create a joint use facility for the Officers Club, Enlisted Club, and golf club house, gymnasium, as well as the administrative function for these activities. Approximately 3,000 square feet of a ballroom area in an existing building would be converted to gymnasium use and 6,100 square feet of the building would be converted to an administrative area. The action would also construct an approximate 19,600 square foot addition to the existing building.

Construct Child Development Center. A one-story, steel-frame structure would be constructed. Buildings 878 and 637 would be demolished under the project.

Construct Base Logistics Complex. A logistics complex consisting of a base supply and equipment warehouse, a base supply administration facility, a base hazardous/flammable material storage facility, and a supply and equipment shed would be constructed near the aircraft maintenance and operations area. The hazardous/flammable material storage facility would be constructed with containment features to prevent material contact with soil or ground water features should an inadvertent spill occur. The hazardous/flammable material facility also would have ventilation systems to prevent overheating of stored materials. This action was assessed in an EA entitled *Environmental Assessment, Three Military Construction Projects, Columbus Air Force Base, Mississippi, January 10, 2001* (USAF 2001a).

Construct Combat Arms Training Facility. The new Combat Arms Training facility would have a 7,000 square foot range building with 14 indoor lanes. The other 1,800 square foot building would house the classroom and workstation.

Construct Nondestructive Inspection Facility. The project would construct a steel-frame, concrete slab facility in which aircraft inspections would be accomplished. The project also would demolish the current building used for this function.

Construct Unaccompanied Officers' Quarters Commons Area. The project would construct a building to provide storage, a laundry room, and lounge area for residents in the Unaccompanied Officer's Quarters.

In summary, there would be a net decrease of about 1,060 persons residing in MFH as a result of the other actions. There would be no change in the number of personnel working at the Base. Approximately 931,299 square feet of space would be constructed and about 1,075,076 square feet of space would be demolished. Overall, the facility footprint associated with the structures, driveways/sidewalks, and parking lots would decrease by about 143,077 square feet as a result of the other actions. It is estimated that approximately 797,451 square feet of the facilities to be constructed (i.e., project numbers 2, 4 through 8, 10, and 11 through 16 on Table 2.5-1) and 841,700 square feet of area associated with demolition activities (i.e., project numbers 3, 4, 6, 8, 12, 13, and 15) are climate controlled. Thus, there would be about 44,249 fewer square feet of climate controlled space.

2.6 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The preferred alternative is the Proposed Action which includes: basing T-6 aircraft at Columbus AFB; accomplishing T-6 airfield operations at Shuqualak Auxiliary Airfield and the GTRA; using two MTRs for low-level navigation training; and constructing the COMBS facility.

2.7 COMPARISON OF ENVIRONMENTAL EFFECTS OF ALL ALTERNATIVES

Table 2.7-1 summarizes the impacts of the Proposed Action and No Action Alternative.

2.8 MITIGATION

No mitigation would be required.

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Table 2.7-1 Summary of Environmental Impacts for the Proposed Action and No Action Alternative

Resource	Proposed Action	No Action Alternative
Airspace and Airfield Operations, Aircraft Safety, and Bird-Aircraft Strike Hazard	Columbus AFB and Shuqualak Auxiliary Airfield. The operating characteristics of the T-6 are similar to the T-37. Thus, the T-6 traffic pattern aircraft ground tracks, profiles, and airspeeds are anticipated to be nearly identical to those currently flown by the T-37. T-6 aircrews would accomplish ELP patterns at both airfields. The air traffic control infrastructure at each airfield could accommodate the ELP as well as other T-6 patterns. Both airfields have the capacity to support the anticipated T-6 airfield operations. GTRA. The airspace surrounding the GTRA and the anticipated air traffic control procedures could accommodate the T-6 airfield operations (to include T-6 ELPs) without conflict from other aviation activity. MTRs. Both MTRs have the capacity to accommodate the operations and the structure for each route can support T-6 operations. The potential for conflict between aircraft operating on the MTRs as well as other civil aircraft operating in the airspace around the MTRs is low because the existing scheduling and air traffic control procedures are designed to minimize conflict between aircraft. The probability is low that an aircraft involved in an accident at or around the Columbus AFB, Shuqualak Auxiliary Airfield, or GTRA airfields or on a MTR would strike a person or structure on the ground. The potential for bird-aircraft strikes associated with aircraft operations would be expected to remain about the same as the current condition because the number of sorties and flying hours would not change. It is anticipated that the number of T-6 bird-aircraft strikes would be approximately the same as that experienced by T-37 aircraft.	No change from the baseline condition

Table 2.7-1 Summary of Environmental Impacts for the Proposed Action and No Action Alternative
(cont'd)

Resource	Proposed Action	No Action Alternative
Noise	Columbus AFB. The number of people exposed to DNL 65 dBA and greater would decrease by 14 percent. It is anticipated there would be a corresponding decrease in the potential for sleep awakenings and speech disruption when compared to the Baseline condition. Noise-induced hearing loss would not be anticipated. No structural damage would be expected from T-6 operations. Construction noise would be temporary, would occur only during daytime, and would cease when the project is completed. Shuqualak Auxiliary Airfield. The number of people exposed to DNL 65 dBA and greater would decrease by 94 percent. Correspondingly, the potential for sleep awakenings and speech disruption would decrease. Noise-induced hearing loss would not be anticipated. No structural damage would be expected from T-6 operations. GTRA. Eight additional persons would be exposed to DNL 65 dBA and greater noise levels. 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-6 aircraft would not operate during normal sleep periods. However, those individuals who sleep between 7:00 a.m. and 10:00 p.m. could be affected just as those persons who sleep during normal sleep periods. No structural damage would be expected from T-6 operations. MTRs. The onset rate-adjusted monthly day-night average A-weighted sound level (L_{dnmr}) would decrease by 2 dBA and 7 dBA on the 2 MTRs that would be flown by T-6 aircraft. Noise from MTR operations would not exceed 55 dBA, the level above which the general population could be at risk from the effects of noise. The hearing loss, speech interference, sleep disruption, and non-auditory health effects discussions for Columbus AFB apply. No structural damage would be expected from T-6 operations on an MTR.	No change from the baseline condition
Land Use	Columbus AFB. Facility construction would be consistent with existing and future land use plans identified in the Columbus AFB General Plan. The aircraft noise and accident potential zones incompatibilities that occur under the current condition would continue. Shuqualak Auxiliary Airfield. The homes along a rural road that passes northwest of the airfield would continue to be within the DNL 65 dBA and greater noise exposure area and would continue to be incompatible due to noise exposure. GTRA. 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. MTRs. Neither aircraft overflight nor the resultant noise would cause changes to existing land uses within the MTR corridors.	No change from the baseline condition

Table 2.7-1 Summary of Environmental Impacts for the Proposed Action and No Action Alternative
(cont'd)

Resource	Proposed Action	No Action Alternative
Air Quality	Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA. All three airfields and portions of two MTRS are within the same air quality control region (AQCR). The greatest increase for any of the criteria air pollutants associated with aircraft operations would be 1,435.97 tons per year (tpy) for carbon monoxide (CO), which equates to 0.38 percent of the baseline emissions within the AQCR. The Clean Air Act General Conformity Applicability Analysis concluded that the net change in emissions for criteria pollutants would not be regionally significant, would not exceed thresholds, and that a Conformity Determination would not be required. MTRs. The greatest increase in emissions for any of the criteria air pollutants from MTR operations within two affected AQCRs would be CO (2.825 tpy), which equates to 0.0042 percent of the CO emissions in the specific AQCR. A Conformity Determination would not be required.	No change from the baseline condition
Infrastructure and Utilities	The electricity and natural gas distribution systems capacities are more than adequate to handle the respective 0.45 and 0.39 percent increases in demand for the new facility. The disposal of construction debris equates to less than 0.0002 percent of the total remaining landfill capacity. Storm water runoff could increase by 0.5 percent as a result of the additional impervious cover associated with the project. Construction-related traffic would be localized to the specific construction project area as well as to the route between the project site and the Base gate. Construction-related traffic would be temporary, lasting as long as the project activity.	No change from the baseline condition
Biological Resources	MTR overflights would be infrequent, random, and pose no threat to wildlife at the behavioral, population, or species level. MTR operations likely would not adversely affect any threatened, endangered, or special status species.	No change from the baseline condition
Hazardous Materials and Wastes	The contractor would comply with regulatory guidance for the use and disposal of hazardous materials and wastes during construction activities. The primary waste producing processes would continue to include aircraft parts cleaning, fluid changes for routine aircraft and vehicle maintenance, aircraft corrosion control, facility, and infrastructure maintenance. It is not anticipated any new hazardous materials would be needed. Hazardous material procurement and hazardous waste generation would not be expected to exceed current levels because the number of aircraft at Columbus AFB would decrease by seven aircraft. The existing hazardous materials handling and hazardous waste disposal processes and procedures would accommodate the activities associated with T-6 operation and maintenance.	No change from the baseline condition

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CHAPTER 3 AFFECTED ENVIRONMENT

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

3.1 MISSION

Columbus AFB provides SUPT for Air Force personnel, as well as students from foreign countries. Support for base administrative services, transportation and supply, civil engineering, communications, security, financial, religious, educational, legal, social actions, medical services, and morale, welfare, and recreational facilities and activities are provided by elements of the 14th Flying Training Wing.

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 one 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, AIRCRAFT SAFETY, AND BIRD-AIRCRAFT STRIKE HAZARD

3.2.1 Airspace and Airfield Operations

Columbus AFB

Airspace 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 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 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 IFR or VFR.

The airspace region of influence (ROI) selected for study includes the airspace within an approximate 40 nautical mile (NM) radius of Columbus AFB from the ground surface up to and including about 23,000 feet above MSL. This represents a three-dimensional volume of airspace reserved to support aircraft operations at and around Columbus AFB. Radar vectoring, sequencing, and separation service between participating VFR and all IFR aircraft operating within this airspace is provided by Columbus AFB Radar Approach Control (RAPCON). The FAA’s Memphis Air Route Traffic Control Center provides this service when the Columbus AFB RAPCON is not operating. Approximately 212,482 sortie operations occurred within the ROI airspace in 2002 (USAF 2003i), or 681 operations per day based on a typical six operating days per week.

There is one private use airport within 10 NM of Columbus AFB. Two low-altitude federal airways pass within 10 NM of the Base. The low-altitude federal airways, defined from ground based navigation aids, are used by civilian and military air traffic extending from 1,200 feet AGL up to, but not including 18,000 feet MSL. The airspace within an approximate 8-NM radius of Columbus AFB is annotated as an alert area on navigation charts to notify pilots that a high volume of pilot training occurs at the Base. There are no MTRs within a 10 NM radius of Columbus AFB.

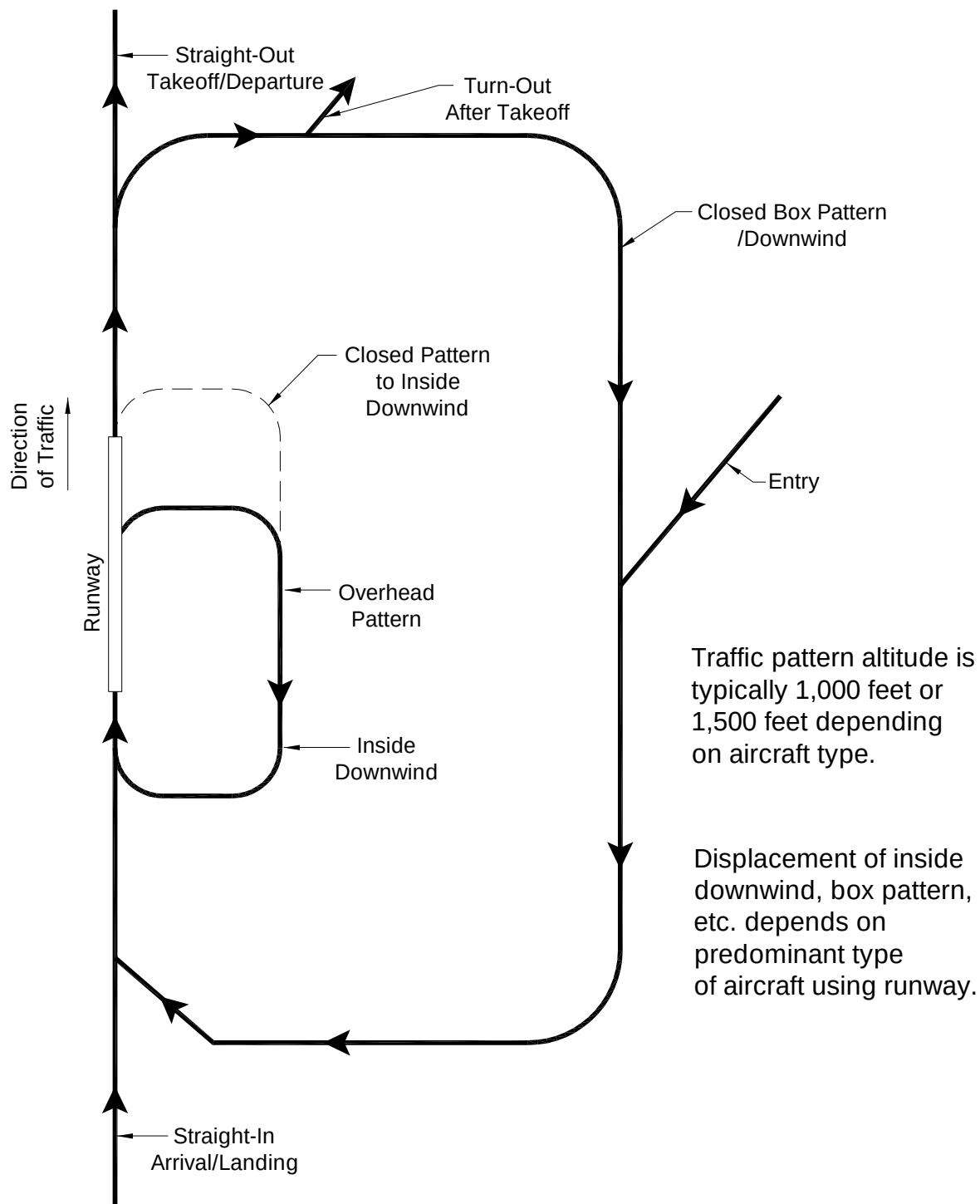
Airfield Operations

Columbus AFB has three runways, 13Left/31Right, 13 Center/31Center, and 13Right/31Left. Runway 13Left/31Right is 8,000 feet long and 150 feet wide and is used primarily for T-1 and T-38 operations. Runway 13Center/31Center is 12,000 feet long and 300 feet wide and is used primarily for instrument training and transient aircraft operations. Additionally, the center runway is used for the initial takeoff for most T-1 and T-38 missions. Runway 13Right/31Left is 6,300 feet long and 175 feet wide and is used for T-37 operations. The air traffic control tower is primarily responsible for controlling operations on the center runway, while instructor pilots housed in runway supervisory units (RSU) are responsible for student training operations on Runways 13Left/31Right and 13Right/31Left. The tower controls all three runways when the RSUs are not operating. The air traffic control tower is typically operational from 7:00 a.m. to 7:00 p.m., Monday through Friday, 12:00-5:00 p.m. on Sundays, and closed Saturdays. However, the tower operates as many as eight Saturdays per year when the flying training schedule requires. The tower may begin operations as early as 5:30 a.m. or operate until 11:00 p.m. if required by the flying training schedule (USAF 2003i). Flying training is scheduled for approximately 245 days per year.

Columbus AFB RAPCON provides radar service to aircraft arriving and departing the Base. There are four instrument approaches available for arrivals to the airfield. T-1 and T-37 traffic patterns are flown approximately 1,000 feet AGL, while T-38 patterns occur at 1,500 feet AGL. Figure 3.2-1 depicts a typical Air Education and Training Command installation aircraft traffic pattern. The majority of aircraft operations at Columbus AFB are generated by based T-1, T-37, and T-38 aircraft. Table 2.4-1 (No Action Alternative) lists the average daily (1,624.56) and annual (399,304) operations at Columbus AFB.

Shuqualak Auxiliary Airfield

The airspace ROI selected for study includes the airspace within an approximate five NM radius of Shuqualak Auxiliary Airfield from the ground surface up to and including 2,000 feet MSL. This ROI includes the approximate airspace in which T-37 aircrews maneuver after radar service is terminated on arrivals, after which radar service is obtained for departures, and while operating at the airfield. The Meridian RAPCON provides radar vectoring, sequencing, and separation service for arrivals and departures at the airfield. The southeastern boundary of restricted area R-4404 lies about 4 NM of the airfield. An MTR passes on a north-south axis 5 NM east of the airfield. However, there are no low-altitude federal airways within 5 NM of the airfield.



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Shuqualak Auxiliary Airfield has a single runway, Runway 13/31, that is 6,300 feet long and 150 feet wide and is used for T-37 operations. Instructor pilots housed in a RSU control the T-37 airfield operations that occur within ROI airspace. No instrument approaches are available for arrivals to the airfield. T-37 traffic patterns are flown approximately 1,000 feet AGL. The traffic pattern depicted in Figure 3.2-1 applies to Shuqualak Auxiliary Airfield. Table 2.4-2 (No Action Alternative) presents the average daily (467.76) and annual (93,552) operations at Shuqualak Auxiliary Airfield.

Golden Triangle Regional Airport

The airspace ROI includes airspace within an approximate 5 NM radius of the GTRA and up to about 2,500 feet AGL and is controlled by GTRA air traffic control tower personnel. 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.

Three 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 14 civil aircraft based at the GTRA.

The civil aircraft section of Table 2.3-3 lists the baseline average daily (54.86) and annual (18,565) airfield operations for the GTRA. Approximately 16 percent of the operations occur during nighttime (10:00 p.m. to 7:00 a.m.). 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 by the fixed base operator.

3.2.2 Military Training Routes

The FAA established special use airspace to meet the needs of military aviation. MTRs, along with MOAs and restricted airspace, are examples of special use airspace.

Several factors reduce risks between MTRs and other airspace used by civil aviation activities. The ceiling of many MTRs is below the minimum enroute altitude established for most of the federal airways with which they intersect. Additionally, IRs and VRs are clearly designated on aeronautical charts. However, SRs are not identified on aeronautical charts used by civil pilots. Both military and civil pilots follow the general "see and avoid" rules of flight. MTRs may also interact with other elements of military training airspace, either transiting through MOAs, restricted areas, or intersecting and merging with other MTRs. MTRs are coordinated through the scheduling unit's operations plan to eliminate simultaneous aircraft operations on conflicting routes scheduled by the Base. Aircrews monitor radio frequencies assigned by air traffic control or as stated in the DoD Flight Information Publications for the type of route being flown (*i.e.*, IR, VR, or SR) or the specific route. These actions advise aircrews of the location of other aircraft and help reduce the potential for airspace conflicts between aircraft operating on MTRs and other aircraft.

FAA guidance places limitations on low-altitude flying for pilots. Air Force Instruction (AFI) 11-202, Volume 3 (*General Flight Rules*), which implements FAA guidance for Air Force operations, states aircraft cannot be flown:

- Over congested areas (e.g., cities, towns, and groups of people) at an altitude of less than 1,000 feet above the highest obstacle within 2,000 feet of the aircraft; and
- Over non-congested areas at an altitude of less than 500 feet above the surface except over open water, in special use airspace, or in sparsely populated areas. Under such exceptions, aircraft must not operate closer than 500 feet to any person, vehicle, vessel, or structure.

Additionally, AFI 11-202 states that, except for special use airspace and MTRs, aircraft should not be flown lower than 2,000 feet above the terrain of national parks, monuments, seashores, lakeshores, recreation areas, and scenic river ways administered by the National Park Service, national wildlife refuges, big game refuges, game ranges, and wildlife refuges administered by the United States Fish and Wildlife Service (USFWS); and wilderness and primitive areas administered by the U.S. Forest Service.

FAA Handbook 7610.4 does not establish minimum altitudes for MTRs. Establishment of minimum MTR altitudes considers the above restrictions and an altitude that corresponds with the primary aircraft type for which the route is developed. Additionally, MTR operations attempt to duplicate, to the maximum extent practicable, the conditions in which they would operate in a combat environment. Therefore, MTRs for highly maneuverable (fighter) aircraft that have special equipment such as terrain-following radar tend to fly lower altitudes. Larger aircraft that are less maneuverable and do not have equipment that safely allows low level flight (transport aircraft) fly MTRs at higher altitudes. Typical effective low-level training altitudes for training aircraft (e.g., T-1, T-37, and T-38) are 500 feet AGL. However, the minimum altitudes flown consider the restrictions for overflying congested areas and people.

Appendix B contains specific information such as the route entry and exit points, enroute turn points, route width, route minimum and maximum altitudes, federal airways that intersect the MTR, other MTRs that intersect the MTR, and airports within the MTR corridor for the Columbus AFB MTRs. Appendix B also contains maps of each MTR. Table 2.4-3 (No Action Alternative) lists the aircraft types and baseline number of operations for the Columbus AFB MTRs.

3.2.3 Aircraft Safety

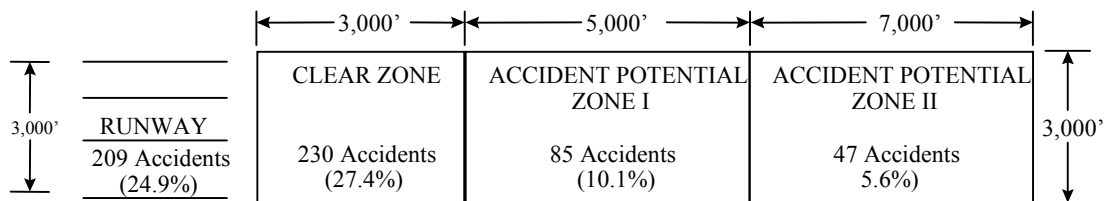
Areas around airports are exposed to the possibility of aircraft accidents even with well-maintained aircraft and highly trained aircrews. Despite stringent maintenance requirements and countless hours of training, past history makes it clear that accidents are going to occur.

The risk of people on the ground being killed or injured by aircraft accidents is miniscule. However, an aircraft accident is a high-consequence event and, when a crash does occur, the result is often catastrophic. Because of this, the Air Force does not attempt to base its safety standards on accident probabilities. Instead it approaches this safety issue from a land-use-planning perspective through its AICUZ program.

Designation of safety zones around the airfield and restriction of incompatible land uses can reduce the public's exposure to safety hazards.

Section 3.4.1 describes the clear zones (CZ) and accident potential zones (APZ) that were developed from analysis of over 800 major Air Force accidents that occurred within 10 miles of an Air Force installation between 1968 and 1995. The study found that 61 percent of the accidents were related to landing operations and 39 percent occurred during takeoff. Fighter and trainer aircraft accounted for 80 percent of the accidents, with large aircraft and helicopters accounting for the remaining 20 percent. Figure 3.2-2 depicts the three safety zones and summarizes the location of the accidents within a 10 nautical mile radius of the airfield.

Figure 3.2-2 Air Force Aircraft Accident Data (838 Accidents - 1968-1995)



Other Accidents Within 10 Nautical Miles: 267 Accidents, 32.0%

The Air Force defines five categories of aircraft flight mishaps: Classes A, B, C, E, and High Accident Potential (HAP). Class A mishaps result in a loss of life, permanent total disability, a total cost in excess of \$1 million, destruction of an aircraft, or damage to an aircraft beyond economical repair. Class B mishaps result in total costs ranging between \$200,000 and \$1 million or result in permanent partial disability, but do not involve fatalities. Class C mishaps result in more than \$100,000 (but less than \$200,000) in total costs, or a loss of worker productivity exceeding 8 hours. Class E mishaps represent minor incidents not meeting the criteria for Classes A through C. HAP events are significant occurrences with a high potential for causing injury, occupational illness, or damage if they occur and do not have a reportable mishap cost. Class C and E mishaps, the most common types of accidents, represent relatively unimportant incidents because they generally involve minor damages and injuries, and they rarely affect property or the public.

Class A mishaps are the most serious of aircraft-related accidents and represent the category of mishap that is most likely to result in a crash. Table 3.2-1 lists the number of class A mishaps, the lifetime class A mishap rate, the number of years for which data are maintained, and the cumulative flight hours for the T-1, T-37 and T-38 aircraft. The table reflects the Air Force-wide data for all elements of all missions and sorties for each aircraft.

Table 3.2-1 T-1, T-37, and T-38 Class A Aircraft Mishap Information

Aircraft	Lifetime Class A Mishaps	Lifetime Class A Mishap Rate	Years of Data	Cumulative Flight Hours
T-1	0	0.00	11	376,937
T-37	136	1.05	47	12,901,534
T-38	191	1.49	43	12,779,660

Note: The mishap rate is an annual average based on the total mishaps and 100,000 flying hours.

Sources: T-1--USAF 2003b; T-37--USAF 2003c; and T-38--USAF 2003d.

3.2.4 Bird-Aircraft Strike Hazard

Bird strikes constitute a safety concern because of the potential for damage to aircraft, injury to aircrews, or local populations if an aircraft strike and subsequent aircraft accident should occur in a populated area. Aircraft may encounter birds at altitudes of 30,000 feet MSL or higher; however, most birds fly close to the ground. Over 95 percent of reported bird strikes occur below 3,000 feet AGL. Approximately 49 percent of bird strikes occur in the airport environment, and 15 percent during low-level cruise (USAF 2003m). About 90 percent of the low-level cruise strikes occur between 300 and 5,000 feet AGL, the altitude range for most MTR operations (USAF 2003l).

Air Force Instruction 91-202 (*The US Air Force Mishap Prevention Program*) requires that Air Force installations supporting a flying mission have a bird-aircraft strike hazard (BASH) plan for the Base. The Columbus AFB plan provides guidance for reducing the incidents of bird strikes in and around areas where flying operations are being conducted. The plan is reviewed annually and updated as needed.

Table 3.2-2 lists the annual bird-aircraft strike information for FY98 through FY02 for Columbus AFB aircraft operating at the Base, at the Shuqualak Auxiliary Airfield, on the MTRs, and in the MOAs used for training. None of the bird-aircraft strikes resulted in a class A mishap.

Table 3.2-2 Columbus AFB Bird-Aircraft Strike Information

FY	Number of Bird-Aircraft Strikes
98	73
99	89
00	91
01	130
02	131
5 year average	103

Source: USAF 2003j.

3.3 NOISE

Aviation-related activities at Columbus AFB dominate the acoustic environment. Equipment used during the facilities construction also would generate noise. Therefore, construction-related noise will be analyzed in addition to noise from aviation activity. Vehicular activity associated with airfield operations contributes little to the general background noise levels around the airfield. Thus, vehicle generated noise will not be 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 3.3-1 depicts typical dBA levels 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.

3.3.1 Noise 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.

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 3.3-1 provides SEL values for Columbus AFB T-1, T-37, and T-38A aircraft 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.

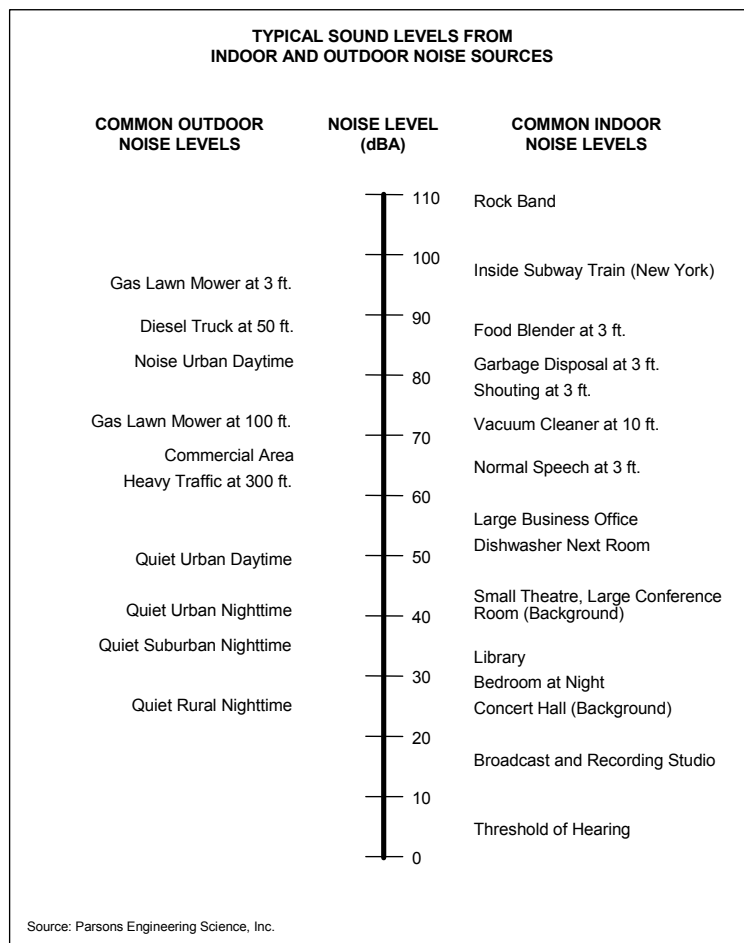
Table 3.3-1 Sound Exposure Level for Columbus AFB Aircraft at 1,000 Feet from the Aircraft during Takeoff

Aircraft Type	Sound Exposure (SEL) (dBA)
T-1	99
T-37	98
T-38A (afterburner)	111
T-38A (nonafterburner)	106

Note: At 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 database of aircraft noise 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.

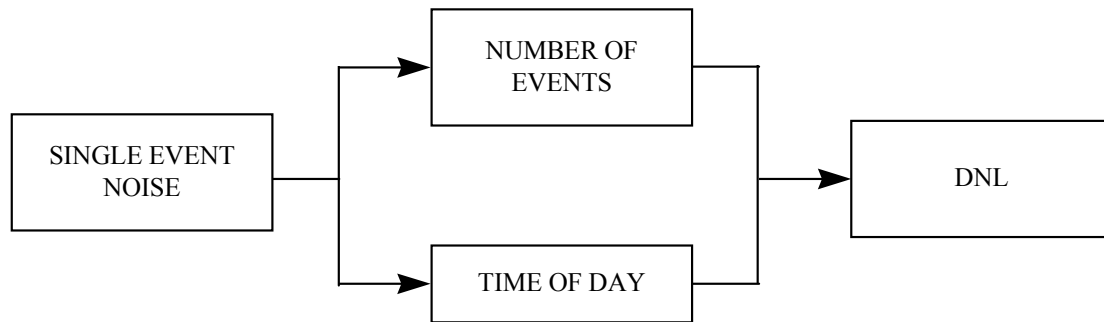
Figure 3.3-1 Typical A-Weighted Noise Levels



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 by averaging the sum of all aircraft noise producing events over a 24-hour period, with a 10 dBA upward adjustment added to the nighttime events (*i.e.*, between 10:00 p.m. and 7:00 a.m.). Figure 3.3-2 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 3.3-2 Day-Night Average A-Weighted Sound Level



DNL is the 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 (FICUN 1980). Based upon these FICUN guidelines, the FAA developed recommended land uses in aircraft noise exposure areas. The Air Force uses DNL 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.

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, Columbus AFB

The primary source of noise in the vicinity of Columbus AFB is airfield operations. Baseline noise conditions are based on the airfield operations shown on Table 2.4-1 (No Action Alternative). About 1,624.56 average daily airfield operations occur at Columbus AFB under the baseline condition. Approximately 1 percent of the operations occur during the nighttime (10:00 p.m. to 7:00 a.m.). These operations and the resultant baseline noise environment are based on the airfield operations data from the Proposed Action in the SUPT EA. Figure 3.3-3 shows the baseline condition aircraft ground tracks and Figure 3.3-4 depicts the noise exposure area for the baseline. 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 and, for that reason, are used as analysis points. Table 3.3-2 lists the outdoor SEL and DNL values for analysis points.

Table 3.3-2 Baseline SEL and DNL from Airfield Operations at Analysis Points, Columbus AFB

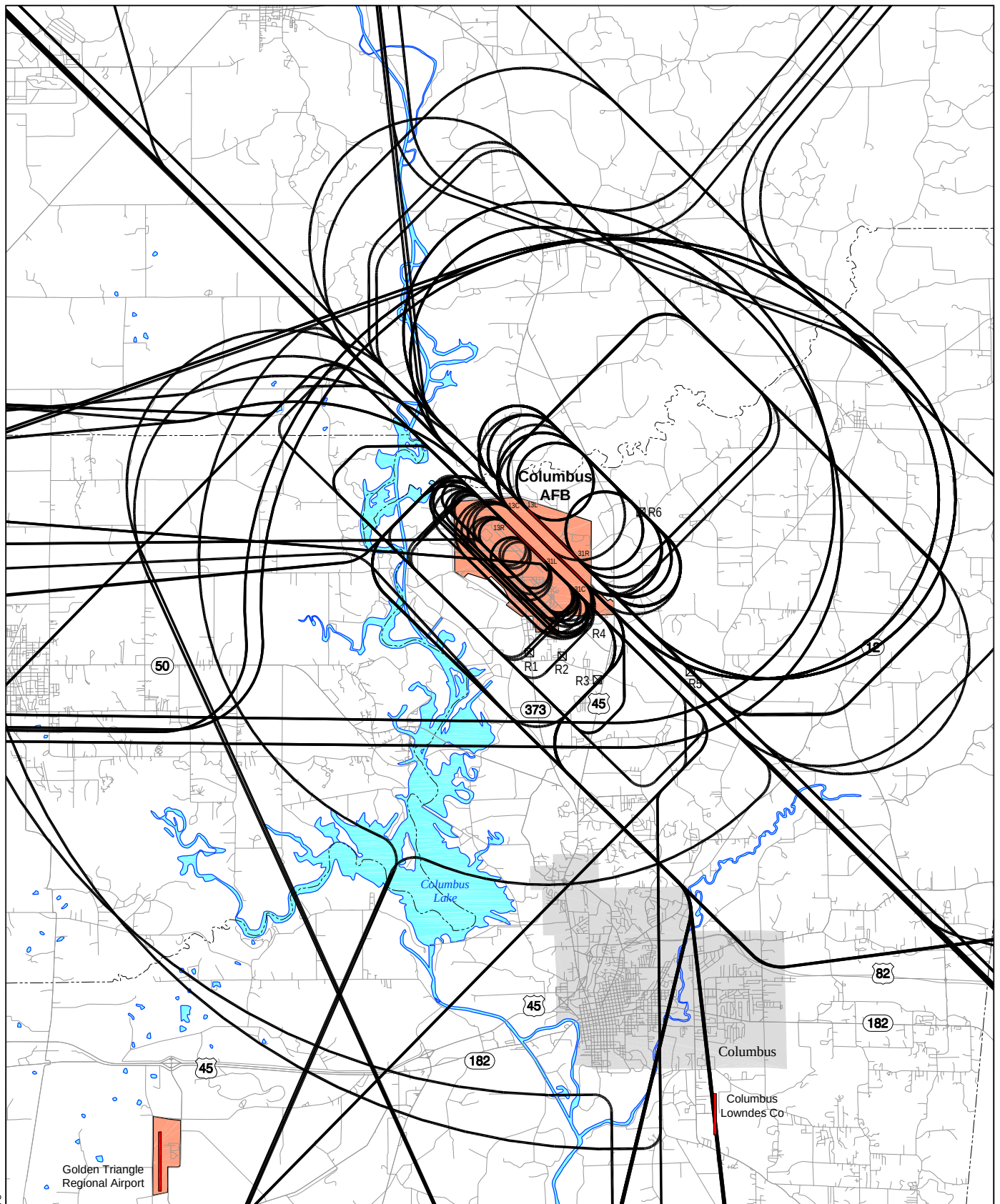
Analysis Point Number	Description	DNL (dBA)	Highest SEL by Aircraft Type (dBA)		
			T-1	T-37	T-38
R1	Mobile Home Park	60	74	100	85
R2	Mobile Home Park	70	86	100	93
R3	Mobile Home Park	69	81	93	89
R4	Mobile Home Park	81	95	100	103
R5	Residence	58	92	88	90
R6	Residence	68	100	NA	102

Note: NOISEMAP rank orders the SEL for the 18 noisiest flight track events affecting the analysis point. Thus, NA indicates that the particular aircraft type does not produce one of the 18 noisiest events for the point. The analysis point number and description correspond to the point as reflected on the noise contour and aircraft ground track figures. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map.

Source: USAF 1997a.

Single Event Noise Analysis, Columbus AFB

Single event analysis is conducted to evaluate sleep disturbance and effects on structures. Figures 3.3-3 and 3.3-4 show the six analysis points identified for analysis in the area surrounding the airfield. These points are facilities that may be sensitive to noise from single aircraft flyover events.



Columbus AFB EA LEGEND

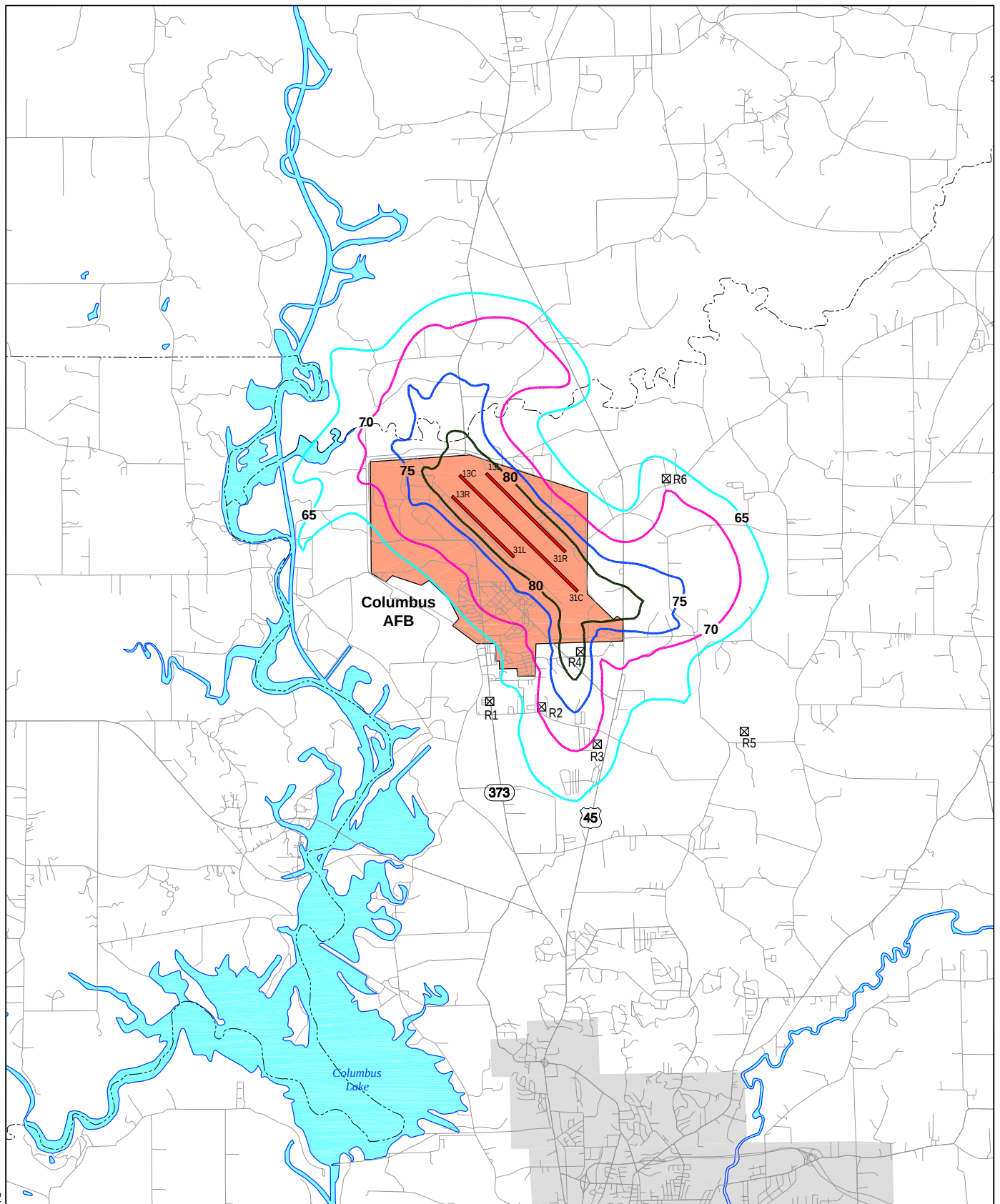
Flight Track	Runway
Analysis Point	Urbanized Areas
	Roadway



Baseline Aircraft Ground Tracks, Columbus AFB

Figure 3.3-3

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Columbus AFB EA

LEGEND

— DNL 65 dB Contour	X Analysis Point	— Roadway
— DNL 70 dB Contour	— Runway	 Urbanized Areas
— DNL 75 dB Contour		
— DNL 80 dB Contour		

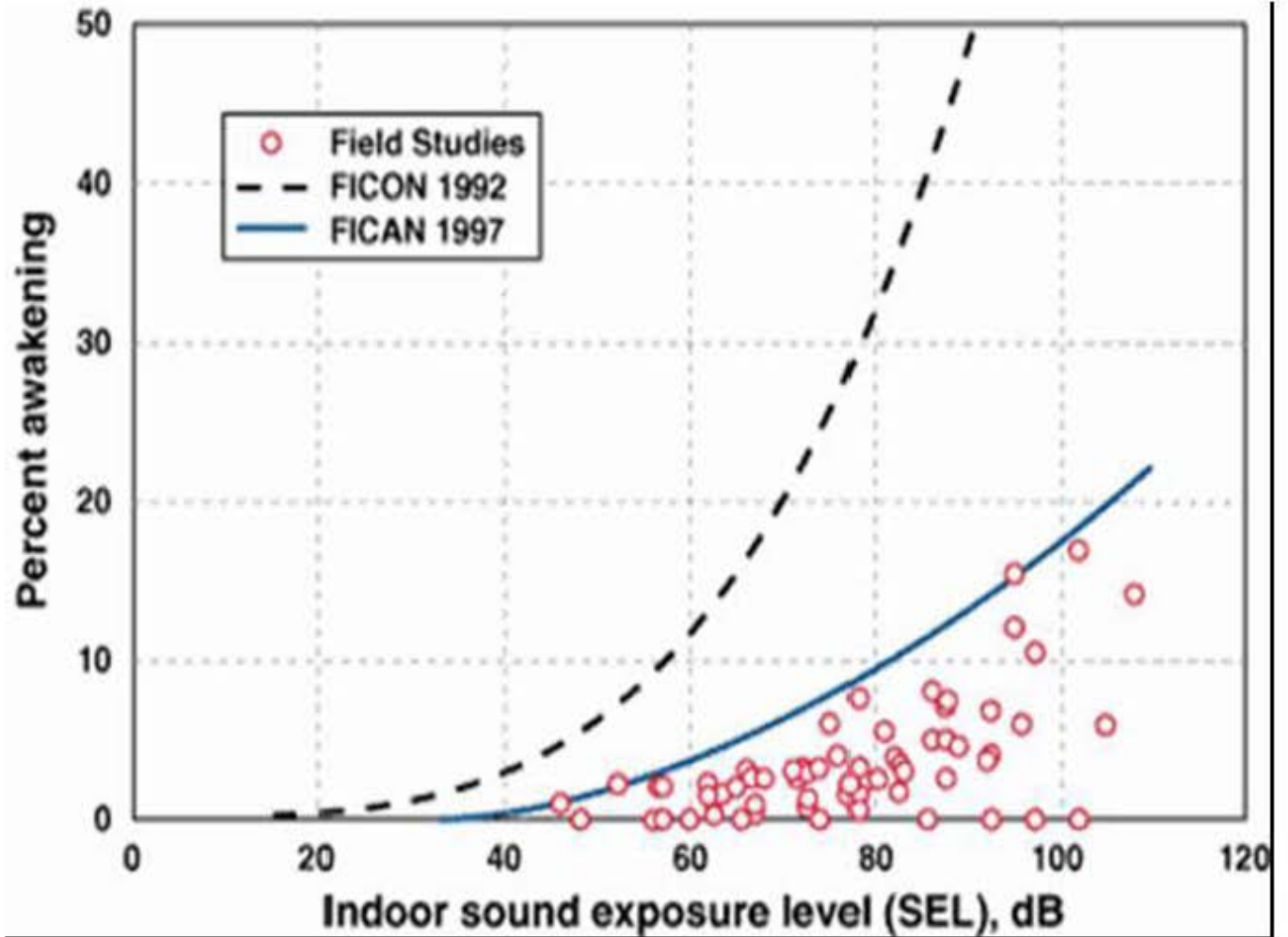


Baseline Aircraft Noise Contours, Columbus AFB

Figure 3.3-4

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Figure 3.3-5 Recommended Sleep Disturbance Dose Response Relationship



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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 3.3-5 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 decibels for open windows and 25 decibels for closed windows. Twenty dBA is conservatively used to estimate attenuation for a typical dwelling unit (USEPA 1974).

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 3.3-3 lists the effects of sound on structures.

Table 3.3-3 Effects of Noise on Structures

dBA	psf ^a	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 ^b	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.

b. 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.

Averaged Noise Analysis, Columbus AFB

Figure 3.3-4 shows the DNL noise contours for the baseline airfield operations condition at Columbus AFB. The DNL 65 dBA contour extends about 1.0 mile and 1.75 miles, respectively, to the southeast and northwest of the airfield boundary, 2 miles each to the north, east, and south, 1 mile to the west, and remains on Columbus AFB to the southwest. The extensive areas of coverage to the north, east, and west are due to the closed pattern aircraft tracks, while the area to the south is primarily attributed to aircraft maintenance runup activity that occurs at the south end of the airfield.

Noise annoyance is defined by the USEPA as any negative subjective reaction to noise by an individual or group. Table 3.3-4 presents the 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 the reaction of people to environmental noise. These data provide a perspective on the level of annoyance that might be anticipated. For example, 12 to 22 percent of the people exposed on a long-term basis to DNL 65-70 dBA are expected to be highly annoyed by noise events. The study results summarized in Table 3.3-4 are based on outdoor noise levels.

Table 3.3-4 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	61

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

Source: Adapted from NAS 1977

Table 3.3-5 lists the number of acres and number of on-Base 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 3.3-6 lists the information for off-Base.

Table 3.3-5 Baseline On-Base Noise Exposure, Columbus AFB

Category	DNL Interval (dBA)				Total
	65-70	70-75	75-80	80+	
Acres	762	1,180	572	1,528	4,042
People	1,545	333	0	0	1,878
People Highly Annoyed	340	123	0	0	463

Note: The numbers of people and people highly annoyed differ from the SUPT EA because 2000 census data are used for this study, while 1990 census data were used for the SUPT EA. Population data used to determine the number of people within a noise zone were obtained from the United States Census Bureau 2000 census. It was assumed that population was equally distributed within a census tract area to estimate affected population. Using the noise contour information, the number of acres of land in each noise zone (*i.e.*, DNL 65-70 dBA, 70-75 dBA, 75-80 dBA, and 80 dBA and greater) was divided by the number of acres of land in each census block to determine the portion of the census tract within each noise zone. The population total in each block-group was then multiplied by this ratio to estimate affected population within each zone. People highly annoyed was determined by multiplying the total number of people in the noise zone times the higher percent number for the interval in Table 3.3-4. The population determination and people highly annoyed processes were used throughout the EA.

Source: for acres, USAF 1997a.

Table 3.3-6 Baseline Off-Base Noise Exposure, Columbus AFB

Category	DNL Interval (dBA)				Total
	65-70	70-75	75-80	80+	
Acres	4,685	3,617	1,296	374	9,972
People	780	530	148	63	1,521
People Highly Annoyed	172	196	80	38	486

Note: The numbers of people and people highly annoyed differ from the SUPT EA because 2000 census data are used for this study, while 1990 census data were used for the SUPT EA.

Source: for acres, USAF 1997a.

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 75 dBA. This level produces ratings of “barely acceptable” for intelligibility of spoken communication (AIHA 1996).

3.3.3 Baseline Noise Analysis, Shuqualak Auxiliary Airfield

The primary source of noise in the vicinity of Shuqualak Auxiliary Airfield is airfield operations. Baseline noise conditions are based on the airfield operations shown on Table 2.4-2 (No Action Alternative). About 467.76 average daily airfield operations occurred at Shuqualak Auxiliary Airfield under the baseline condition. No operations occur during the nighttime (10:00 p.m. to 7:00 a.m.). These operations and the resultant baseline noise environment are based on the airfield operations data from the Proposed Action in the SUPT EA. Figure 3.3-6 shows the baseline condition aircraft ground tracks and Figure 3.3-7 depicts the noise exposure area for the baseline. Table 3.3-7 lists the outdoor SEL and DNL values from T-37 operations at the analysis points.

Table 3.3-7 Baseline SEL and DNL from T-37 Airfield Operations at Analysis Points, Shuqualak Auxiliary Airfield

Analysis Point Number	Description	DNL (dBA)	SEL (dBA)
R1	New Chapel Church	71	100
R2	Near New Chapel Church	70	102
R3	Point Northwest of Airfield	58	101
R4	North-northwest of Airfield on SR 221	53	101
R5	Southwest of Shuqualak on Residence Street	53	96
R6	Wahalak Church	50	90
R7	Southeast of Airfield on Wahalak Road	49	91

Note: The analysis point number and description correspond to the point as reflected on the noise contour and aircraft ground track figures. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map. The T-37 is the only aircraft operating at the airfield. Thus, the SEL data reflect only T-37-generated SEL.

Source: USAF 1997a.

Single Event Noise Analysis, Shuqualak Auxiliary Airfield

The sleep disturbance and effects of noise on structures information for Columbus AFB in Section 3.3.2 apply to Shuqualak Auxiliary Airfield. Figures 3.3-6 and 3.3-7 show the seven analysis points identified for analysis in the area surrounding the airfield. These points are facilities that may be sensitive to noise from single aircraft flyover events.

Averaged Noise Analysis, Shuqualak Auxiliary Airfield

Figure 3.3-7 shows the DNL noise contours for the baseline airfield operations condition at Shuqualak Auxiliary Airfield. The DNL 65 dBA contour respectively extends about 1 mile to the northwest, north, east, and southeast from the ends of the runway, while the contour is about 0.75 mile wide along the axis of the runway. The extensive areas of coverage to the north and east are due to the closed pattern aircraft tracks.

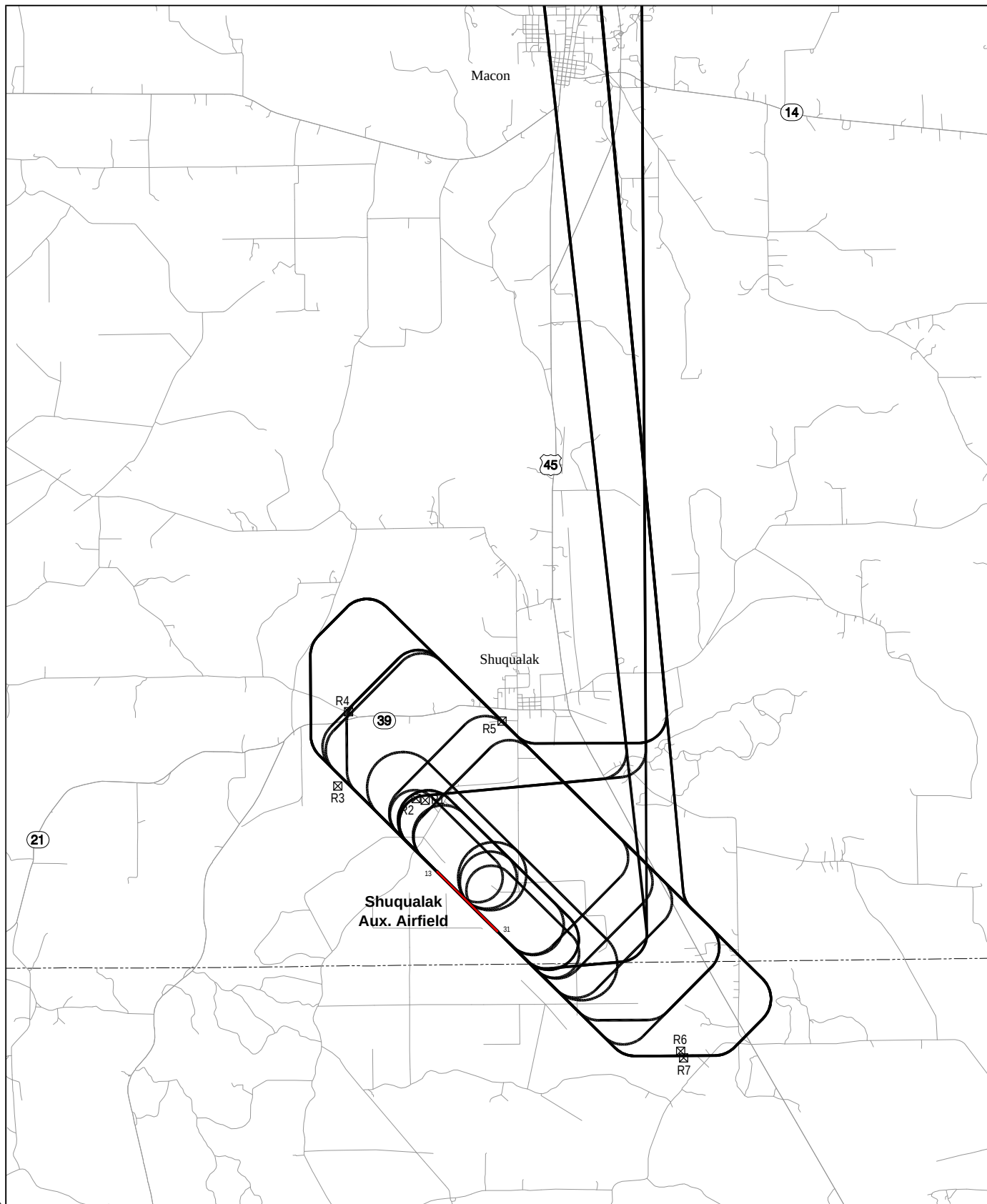
Table 3.3-8 lists the number of acres and number of people within the DNL 65 dBA and greater noise exposure area for the baseline condition, as well as the estimated number of people who might be highly annoyed by noise at those levels. The noise annoyance information presented in Section 3.3.2 for Columbus AFB apply to Shuqualak Auxiliary Airfield. No persons reside on the airfield. Therefore, the data in the table pertaining to people apply to the area outside the airfield boundary.

Table 3.3-8 Baseline Noise Exposure, Shuqualak Auxiliary Airfield

Category	DNL Interval (dBA)				Total
	65-70	70-75	75-80	80+	
Acres	1,025	533	198	139	1,895
People	14	3	0	0	17
People Highly Annoyed	3	1	0	0	4

Note: The numbers of people and people highly annoyed differ from the SUPT EA because 2000 census data are used for this study, while 1990 census data were used for the SUPT EA. The methodology described as a note to Table 3.3-5 was used to determine population exposure as well as the number of persons who might be highly annoyed.

Source: for acres, USAF 1997a.



**Columbus AFB EA
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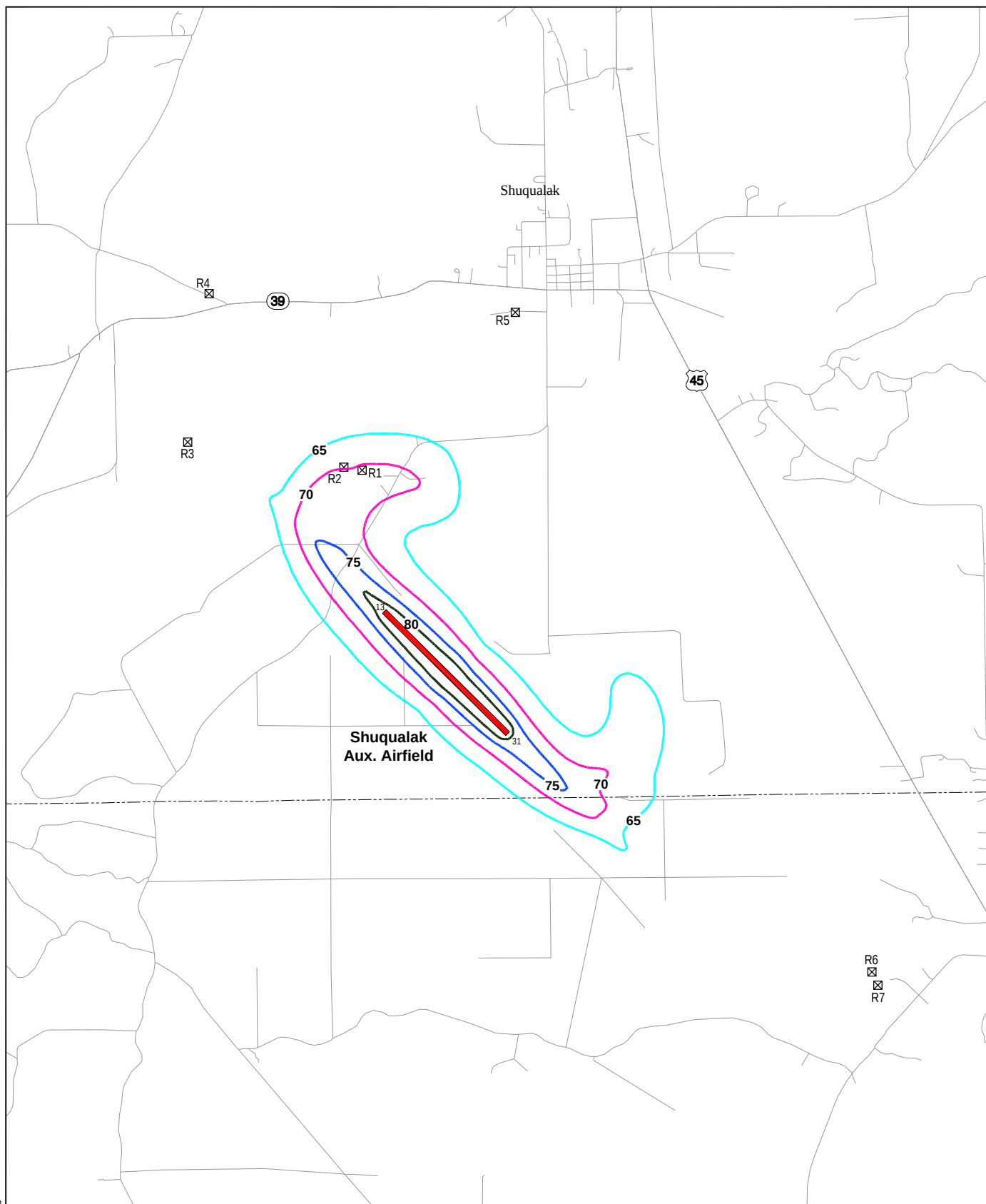
 Flight Track	 Runway
 Analysis Point	 Roadway



**Baseline Aircraft
Ground Tracks,
Shuqualak Auxiliary Airfield**

Figure 3.3-6

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Columbus AFB EA

LEGEND

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

- Analysis Point
- Runway
- Roadway



Baseline Noise Contours, Shuqualak Auxiliary Airfield

Figure 3.3-7

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3.3.4 Baseline Noise Analysis, Golden Triangle Regional Airport

The primary source of noise in the vicinity of the GTRA is airfield operations. Baseline noise conditions are based on the airfield operations shown in the civil aircraft section of Table 2.3-3. About 54.86 average daily airfield operations occurred at the GTRA under the baseline condition. Approximately 16 percent of the operations occur during the nighttime (10:00 p.m. to 7:00 a.m.). These operations and the resultant baseline noise environment are based on the airfield operations from the GTRA EA (2003a). Figure 3.3-8 shows the baseline condition aircraft ground tracks and Figure 3.3-9 depicts the noise exposure area for the baseline. Table 3.3-9 lists the greatest outdoor SEL from aircraft operating at the airfield and the DNL values from aircraft operations at the analysis points.

Table 3.3-9 Baseline SEL and DNL from Airfield Operations at Analysis Points, Golden Triangle Regional Airport

Analysis Point Number	Description	DNL (dBA)	SEL (dBA)	Aircraft producing SEL
1	Below North Extended Runway Centerline	66	109	Learjet
2	Below West Closed Pattern	18	60	Learjet
3	Below South Extended Runway Centerline	66	109	Learjet
4	Below East Closed Pattern	18	60	Learjet

Note: The analysis point number and description correspond to the point as reflected on the noise contour and aircraft ground track figures. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map. SEL values at the analysis points is listed for the aircraft producing the greatest SEL at the particular point.

Source: USAF 2003a.

Single Event Noise Analysis, Golden Triangle Regional Airport

The sleep disturbance and effects of noise on structures information for Columbus AFB in Section 3.3.2 apply to the GTRA. Figures 3.3-8 and 3.3-9 show the four analysis points identified for analysis in the area surrounding the airfield. These points are facilities that may be sensitive to noise from single aircraft flyover events.

Averaged Noise Analysis, Golden Triangle Regional Airport

Figure 3.3-9 shows the DNL noise contours for the baseline airfield operations condition at GTRA. The DNL 65 dBA contour extends about 1.5 miles north and 1.3 miles south of the respective runway end.

Table 3.3-10 lists the number of acres and number of 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. The noise annoyance information presented in Section 3.3.2 for Columbus AFB apply to the GTRA. No persons reside on the airfield. Therefore, the data in the table pertaining to people apply to the area outside the airport boundary.

Table 3.3-10 Baseline Noise Exposure, Golden Triangle Regional Airport

Category	DNL Interval (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: The methodology described as a note to Table 3.3-5 was used to determine population exposure as well as the number of persons who might be highly annoyed.

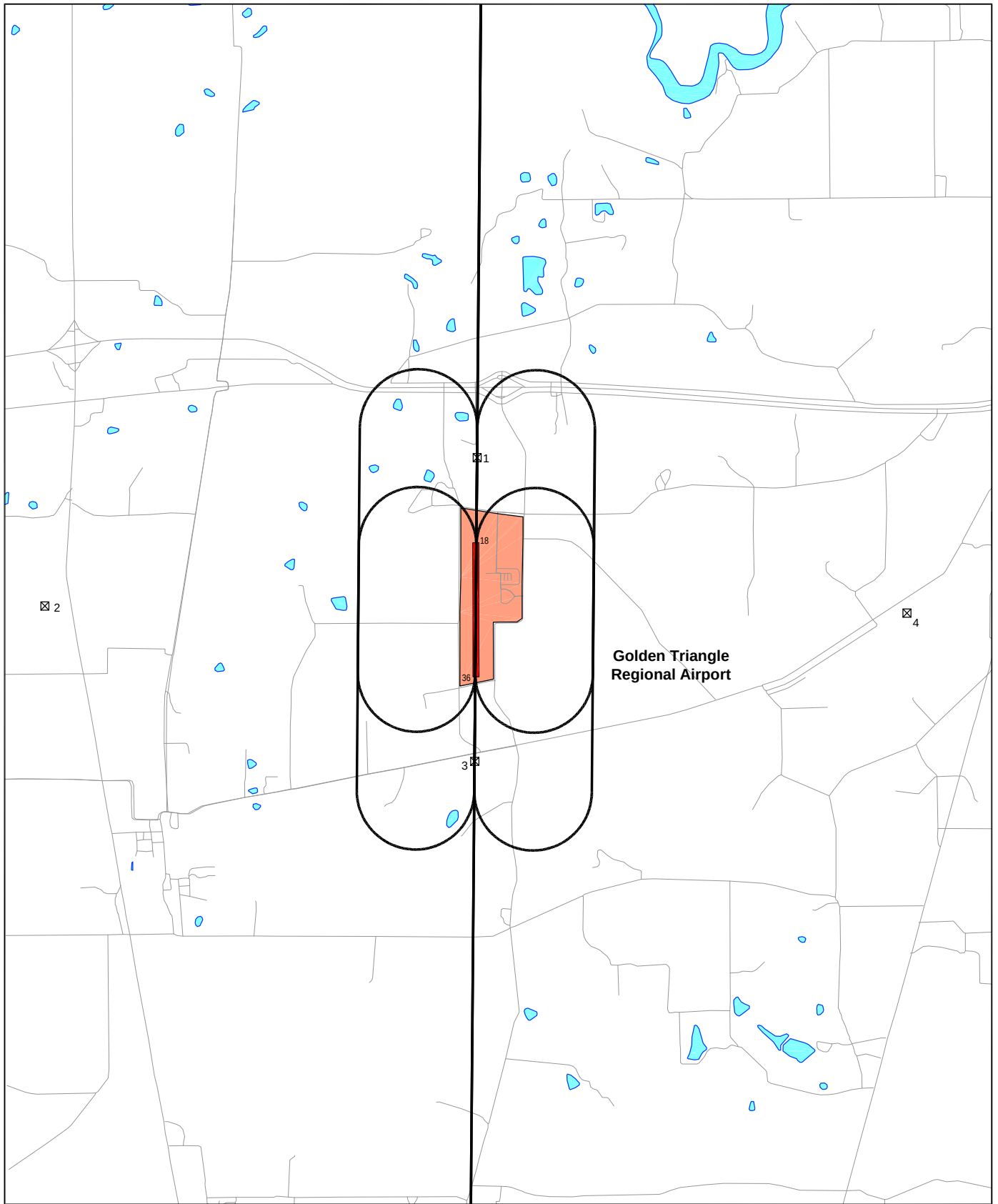
Source: USAF 2003a.

3.3.5 Military Training Route Noise Analysis

Aircraft operations on a MTR are not as regular as airfield operations and exhibit substantial variation throughout the year. Particular training phases or exercises can exist for periods of weeks or months. Because of the differences in the levels of operations on MTRs and at airfields, a different noise descriptor, the onset rate-adjusted monthly day-night average A-weighted sound level (L_{dnmr}) was developed to assess noise on MTRs. It is based on an integration period equal to one calendar month with the highest number of monthly operations. L_{dnmr} is calculated similarly to DNL with a 10 dB upward adjustment factor for nighttime events. In addition, L_{dnmr} incorporates an onset rate adjustment for noise events with an onset rate equal to or greater than 15 dB per second. This onset rate adjustment provides a noise penalty to account for increased intrusiveness due to the surprise factor of low altitude, high-speed aircraft. The Air Force recommends L_{dnmr} values be applied to the same interpretive criteria as DNL values (USAF 1997a).

The ROUTEMAP computer program calculates the noise level on the ground along a low-level flight corridor or track such as a MTR. The information needed for each aircraft type is the number of daytime and nighttime operations during a month, nominal values for the airspeed, engine power setting, and altitude. The program computes the L_{dnmr} , DNL, and equivalent sound level in dBA for ground positions located within 13 miles of the route centerline. The ROUTEMAP noise model calculates and presents the results based on a monthly average; that is, if there are only two operation days in a month, the model will average the two operation days over a typical 30-day month. Measurements on several low-level flight corridors (Plotkin and Croughwell 1986; Plotkin 1987) have established that a Gaussian distribution in the horizontal plane is the distribution that best describes the spatial activity along an MTR. The impact of flight track dispersion in the vertical plane on sound exposure level has a minimal, and often negligible, effect compared with dispersion in the horizontal plane. For purposes of the present ROUTEMAP model, vertical dispersion is not considered; therefore, the aircraft tracks are distributed laterally at a constant altitude above the ground.

Table 2.4-3 lists the baseline MTR operations for Columbus AFB aircrews. Figure 2.4-1 shows the location of the MTRs. Appendix B contains a more detailed figure depicting the location of each route.



Golden Triangle Regional Airport

LEGEND

 Flight Track	 Runway	 Golden Triangle Regional Airport
 Analysis Point	 Roadway	



**Baseline Aircraft Ground
Tracks,
Golden Triangle Regional
Airport**
Figure 3.3-8

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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

4,000 0 4,000
Feet



Baseline Noise Contours, Golden Triangle Regional Airport

Figure 3.3-9

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As indicated in Table 3.3-11, the L_{dnmr} for baseline MTR operations ranges from a low of 35 dBA to a high of 45 dBA. Table 3.3-12 lists the SEL values for various aircraft for points directly below and lateral to the aircraft ground track. Both the L_{dnmr} and SEL decrease as the distance between the receptor and the route centerline increases. The L_{dnmr} is a maximum of 5 dBA greater than the values stated in Table 3.3-11 at the points at which the MTRs intersect or when there are common route segments. Thus, the maximum L_{dnmr} for any route is about 50 dBA.

Table 3.3-11 Aircraft Noise Levels Below Military Training Routes, Baseline Condition

Route	L_{dnmr} (dBA)	Route	L_{dnmr} (dBA)
IR-066	40	VR-1014	43
IR-067	35	VR-1050	35
IR-068	35	VR-1051	42
IR-070	42	VR-1072	42
IR-091	41	SR-137	45

Note: L_{dnmr} is represented for MTR operations at 500 feet AGL.

Source: USAF 1997a.

Table 3.3-12 Aircraft Noise Levels (SEL) as a Function of Distance from Aircraft Ground Track Centerline, Baseline Condition

Aircraft	200 Feet	315 Feet	500 Feet	1,000 Feet	2,000 Feet	3,150 Feet
T-1	108	105	102	97	92	88
T-37	100	97	93	88	81	76
T-38	98	95	91	86	80	75

Note: Data reflect noise from cruise power. T-38 data reflect T-38A.

3.4 LAND USE

3.4.1 Columbus AFB

The Columbus AFB General Plan details the Base's existing and future land use plans. The 12 land use categories for both the existing and future conditions are: airfield and direct mission; aircraft operations/maintenance facilities; industrial facilities; community (commercial facilities); community (service) facilities; recreational facilities; medical, dental, and veterinary; housing (unaccompanied) officer; housing (unaccompanied) airmen; housing (accompanied); administrative; and transportation, open areas, buffer areas, and undesignated areas. The proposed location for the COMBS facility is on land in the airfield and direct mission category.

Off-base development south of the Base along and to the east of State Highway 373 includes some commercial activities and a large number of mobile homes located in mobile home parks as well as single family residences. Development along US 45, which passes immediately east of the Base on a north-south axis, consists primarily of scattered commercial development as well as single family residences and a subdivision. The remainder of the land area around the Base is a mix of undeveloped, forested land, and farmland (USAF 1998a).

The AICUZ program is an on-going DoD program based on noise and safety that is designed to promote compatible land uses in the areas surrounding military airfields.

AICUZ land use guidelines (see Table 3.4-1) reflect land use recommendations for CZs, APZs I and II, and four noise zones. The following paragraphs define the CZ and APZs.

- **Clear Zone Surface**—The CZ width is 3,000 feet (1,500 feet to either side of runway centerline) and extends outward 3,000 feet. Some obstructions may occur within the CZ if permitted under AICUZ land use guidelines, or if appropriate authorities have waived airfield planning guidance. A CZ is the area that has the greatest potential for an accident of the three zones (*i.e.*, CZ, APZ I, and APZ II) (see Figure 3.2-2).
- **Accident Potential Zone Surfaces**—APZ I begins at the outer end of the CZ and is 5,000 feet long and 3,000 feet wide. APZ II begins at the outer end of APZ I and is 7,000 feet long and 3,000 feet wide. APZ I has less accident potential than the CZ and APZ II has less potential than APZ I.

Table 3.4-1 Recommended Land Use

Generalized Land Use	Clear Zones and Accident Potential Zones			Noise Zones			
	CZ	APZ I	APZ II	65-69 dBA	70-74 dBA	75-79 dBA	80+ dBA
Residential	No	No	Yes ¹	Not Recommended ⁴	Not Recommended ⁴	Not Recommended	Not Recommended
Commercial	No	No	Yes ²	Recommended	Recommended	Recommended	Not Recommended
Industrial	No	Yes ²	Yes ²	Recommended	Recommended	Recommended	Recommended
Public/Quasi-Public	No	No	Yes ²	Recommended	Not Recommended ⁴	Not Recommended ⁴	Not Recommended
Recreational	No	Yes ²	Yes ²	Recommended	Recommended	Not Recommended	Not Recommended
Open/Agriculture/Low Density	No ³	Yes ²	Yes ²	Recommended	Recommended	Recommended	Recommended

1. Suggested maximum density 1 dwelling unit per acre.

2. Only limited low-density, low-intensity uses recommended.

3. Except limited agricultural uses are permitted.

4. Unless sound attenuation materials are installed.

The guidelines in Table 3.4-1 were established on the basis of studies prepared and sponsored by several federal agencies, including the Department of Housing and Urban Development, USEPA, Air Force, and state and local agencies. The guidelines recommend land uses that are compatible with airfield operations while allowing maximum beneficial use of adjacent properties. The Air Force has no desire to recommend land use regulations that render property economically useless. It does, however, have an obligation to the inhabitants of the areas surrounding Columbus AFB and to the citizens of the United States to point out ways to protect the people in adjacent areas, as well as the public investment in the installation itself.

Only industrial and recreational/open land uses are compatible with the safety criteria established for APZ I. Thus, the small area of residences at the south end of the Runway 31Center APZ I is incompatible. Any land use but public is compatible with the safety criteria established for APZ II as long as residential development is limited to a maximum density of one dwelling unit per acre. Some minor residential, commercial, and industrial land uses occur beyond the south ends of Runways 31Center and 31Left. The mobile homes along Land Road in APZ II are incompatible with the APZ II designation. Likewise, the mobile homes in APZ II east of Highway 45 are incompatible.

Incompatible off-base land use also occurs from noise exposure in residential areas south of the Base (USAF 1998a).

Land use within Columbus AFB's CZs is controlled by the Base through either fee simple ownership or restrictive easements. Portions of the CZs and the APZs I, as well as APZs II for the three runways, extend off-Base toward the northwest and southeast (USAF 1998a).

3.4.2 Shuqualak Auxiliary Airfield

Existing land use within the area influenced by the aircraft operations at the airfield is primarily open/agricultural with low density residential units. Land within the area is used mostly for agriculture or silviculture. However, several single family residential units and mobile homes are located along the rural road that passes northwest of the airfield property. These residences consist of single family houses and several mobile homes. All residences are located on individual lots or parcels. The only concentrated development is the town of Shuqualak, which is approximately four miles north of the airfield (USAF 1998b). The town had a population of 562 persons according to the 2000 census.

No incompatible land uses occur within the Shuqualak Auxiliary Airfield CZs or APZs. The mobile homes located along the rural road that passes northwest of the airfield are incompatible due to noise exposure (USAF 1998b).

3.4.3 Golden Triangle Regional Airport

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 (USAF 2003a).

The FAA has a voluntary program that is comparable to the DoD AICUZ program. Federal Aviation Regulation Part 150, *Airport Noise Compatibility Planning*, contains the guidance for the FAA program. A Part 150 study identifies land use compatibility for various levels of noise exposure in addition to providing the methodology for noise modeling. FAA guidance does not establish CZs and APZs at civil airports. However, FAA Circular 150/5300-13 establishes runway protection zones, which are comparable to CZs. Runway protection zones enhance the protection of people and property. The GTRA has not prepared a Part 150 study for the airport. However, GTRA did prepare a planning document titled *Airport Noise Control and Land Use Compatibility Program*, Golden Triangle Regional Airport (GTRA 1984).

3.4.4 Military Training Routes

The land use areas affected by proposed operations on the MTRs consist of those lands within the route corridors. The area potentially affected by the low-level routes involves primarily rural regions of northern, western, and north central Alabama, central and southern Tennessee, central, southwestern, and northern Mississippi, southeast Arkansas, and northern Louisiana. Broad areas of open space and public lands are

present, as are scattered population centers, including a few larger towns and cities. The following generalized land uses occur within the MTR corridors: urban/populated areas; industrial; recreational areas; agricultural; commercial; and transportation corridors. The vast majority of land under the MTRs is undeveloped.

Land uses associated with urban/populated centers underlying these routes include residential, commercial, industrial, and institutional (*e.g.*, schools, hospitals). Table 3.4-2 lists the baseline low-level routes and the urban/populated centers associated with each route. The population data provided in table were obtained from the 2000 census.

Table 3.4-2 Urban/Populated Lands Under the Military Training Routes

MTR	Urban Populated Area/Population
IR-66	Haleyville, AL/4,540; Phil Campbell, AL/1,348; Cherokee, AL/1,425; Savannah, TN/6,917
IR-67	Haleyville, AL/4,540; Phil Campbell, AL/1,348; Cherokee, AL/1,425; Hohenwald, TN/3,760; Waverly, TN/4,028; McKenzie, TN/5,295; Trezevant, TN/901; Huntington, TN/4,349; Milan, TN/7,664; Henderson, TN/5,670
IR-68	Grenada, MS/14,879; Crenshaw, MS/978; Helena, MS/26,000; Friars Point, MS/1,334; Drew, MS/2,349
IR-70	Drew, MS/2,349; Shelby, MS/2,806; Gunnison, MS/611; Dumas, AR/5,238; Eudora, AR/2,819
IR-91	Como, MS/1,387; Sardis, MS/2,128; Batesville, MS/6,403; Crowder, MS/758
VR-1014	Reform, AL/1,978; Phil Campbell, AL/1,091; Amory, MS/7,093
VR-1050	Haleyville, AL/4,540; Phil Campbell, AL/1,348; Cherokee, AL/1,425; Savannah, TN/6,917
VR-1051	Haleyville, AL/4,540; Phil Campbell, AL/1,348; Cherokee, AL/1,425; Hohenwald, TN/3,760; Trezevant, TN/901; Huntington, TN/4,349; Milan, TN/7,664; Henderson, TN/5,670
VR-1072	Crystal Springs, MS/5,643; Centreville, MS/1,771; Summit, MS/1,566; Magee, MS/3,607; Bay Springs, MS/1,729; Quitman, MS/2,736
SR-137	Eupora, MS/2,145; Winona, MS/5,705; Durant, MS/2,838

Population source: US Bureau of the Census, April 2000. Urban/populated areas listed are those shown on the National Atlas of the United States and the United States Geological Survey, with a population listed in the 2000 Census of Population and Housing.

Sensitive land uses are areas of environmental importance and concern, or areas reserved for specific public activities (*e.g.*, recreation, camping, wildlife observation). There are several national forests, state parks, and wildlife management areas within the MTR corridors. Table 3.4-3 describes natural and recreational lands beneath the MTRs.

**Table 3.4-3 Natural and Recreational Lands Overflown by
Military Training Routes**

Parks, Forest, and Wildlife Refuges	IR 066	IR 067	IR 068	IR 070	IR 091	VR 1014	VR 1050	VR 1051	VR 1072	SR 0137
Homochitto Nat. Forest, MS									X	
Homochitto Nat. Wildlife Mgt. Area, MS									X	
Sandy Creek Wildlife Mgt. Area, MS									X	
Bucatanna Wildlife Mgt. Area, MS									X	
Caney Creek Wildlife Mgt. Area, MS									X	
Copiah County Wildlife Mgt. Area, MS									X	
Hugh White State Park, MS			X							
O'Keefe Wildlife Mgt. Area, MS			X							
Holly Springs National Forest, MS	X	X	X		X		X	X		
Lake Lowndes State Park, MS						X				
Divide Section Wildlife Mgt. Area, MS	X									
Natchez Trace Parkway, MS	X									X
Leroy Percy Wildlife Mgt. Area, MS				X						
Panther Swamp Nat. Wildlife Refuge, MS				X						
Noxubee Nat. Wildlife Refuge, MS										X
Delta Nat. Forest, MS				X						
George Payne Cossar State Park, MS			X							
Grenada Waterfowl Refuge, MS			X							
Malmaison Waterfowl Game Mgt. Area, MS					X					
Wall Doxey State Park, MS					X					
Upper Sardis Game Mgt. Area, MS					X					
Tombigbee Nat. Forest, MS					X					
J.P. Coleman State Park, MS	X	X					X	X		
Lake George Wildlife Mgt. Area, MS				X						
Canal Section Wildlife Mgt. Area, MS	X					X	X			
Caston Creek Wildlife Mgt. Area, MS									X	
Trim Cane Wildlife Mgt. Area, MS										X
William B. Bankhead Nat. Forest, AL	X					X				
Lake Lurleen State Park, AL						X				
Rickwood Caverns State Park, AL	X									
Upper Quachita Nat. Wildlife Refuge, LA				X						
Georgia Pacific Wildlife Area, LA				X						
Chemin-A-Haut State Park, LA				X						
Overflow Nat. Wildlife Refuge, AR				X						
Moro Bay State Park, AR				X						
Felsenthal Nat. Wildlife Refuge, AR				X						
Cane Creek State Park, AR				X						
White River Nat. Wildlife Refuge, AR				X						
Montgomery Bell State Park, TN								X		
Narrows of the Harpeth State Park, TN								X		
Nathon Bedford Forrest State Park, TN								X		
Big Hill Pond State Park, TN	X	X					X	X		
Pickwick Landing State Park, TN	X	X					X	X		
Moss Island Wildlife Mgt. Area, TN	X						X			
Laurel Hill Wildlife Mgt. Area, TN	X	X					X	X		
Cheatham Wildlife Mgt. Area, TN								X		
Williams Port Wildlife Mgt. Area, TN								X		
Tennessee National Wildlife Refuge, TN		X						X		

3.5 AIR QUALITY

3.5.1 Air Pollutants and Regulations

Air quality in any given region is measured by the concentration of various pollutants in the atmosphere, typically expressed in units of parts per million (ppm) or in units of micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). Air quality is not only determined by the types and quantities of atmospheric pollutants, but also by surface topography, size of the air basin, and by prevailing meteorological conditions.

The Clean Air Act (CAA), as amended in 1977 and 1990, provides the basis for regulating air pollution to the atmosphere. Different provisions of the CAA apply depending on where the source is located, which pollutants are being emitted, and in what amounts. The CAA required the USEPA to establish ambient ceilings for certain criteria pollutants. These criteria pollutants are usually referred to as the pollutants for which the USEPA has established National Ambient Air Quality Standards (NAAQS). The ceilings were based on the latest scientific information regarding effects a pollutant may have on public health or welfare. Subsequently, the USEPA promulgated regulations that set NAAQS. Two classes of standards were established: primary and secondary. Primary standards define levels of air quality necessary, with an adequate margin of safety, to protect public health, including the health of “sensitive” populations such as asthmatics, children, and the elderly. Secondary standards define levels of air quality necessary to protect public welfare (*e.g.*, decreased visibility, damage to animals, crops, vegetation, wildlife, and buildings) from any known or anticipated adverse effects of a pollutant.

Air quality standards are currently in place for six pollutants or “criteria” pollutants: CO, nitrogen dioxide (NO_2), ozone (O_3), sulfur oxides (SO_x , measured as sulfur dioxide [SO_2]), lead (Pb), and particulate matter with an aerodynamic diameter less than or equal to 10 micrometers (PM_{10}). There are many suspended particles in the atmosphere with aerodynamic diameters larger than 10 micrometers. The collective of all particle sizes is commonly referred to as total suspended particulates (TSP). TSP is defined as particulate matter as measured by methods outlined in 40 CFR Part 50, Appendix B. The NAAQS are the cornerstone of the CAA. Although not directly enforceable, they are the benchmark for establishment of emission limitations by the states for the pollutants USEPA determines may endanger public health or welfare.

Ozone (ground-level ozone), which is a major component of “smog,” is a secondary pollutant formed in the atmosphere by photochemical reactions involving previously emitted pollutants or precursors. Ozone precursors are mainly nitrogen oxides (NO_x) and volatile organic compound (VOC). NO_x is the designation given to the group of all oxygenated nitrogen species, including nitric oxide (NO), NO_2 , nitrous oxide (N_2O), and others. However, only NO, NO_2 , and N_2O are found in appreciable quantities in the atmosphere. VOCs are organic compounds (containing at least carbon and hydrogen) that participate in photochemical reactions and include carbonaceous compounds except metallic carbonates, metallic carbides, ammonium carbonate, carbon dioxide (CO_2), and carbonic acid. Some VOCs are considered non-reactive under atmospheric conditions and include methane, ethane, and several other organic compounds.

As noted above, ozone is a secondary pollutant and is not directly emitted from common emissions sources. Therefore, to control ozone in the atmosphere, the effort is

made to control NO_x and VOC emissions. For this reason, NO_x and VOCs emissions are calculated and reported in emission inventories.

The CAA does not make the NAAQS directly enforceable. However, the Act does require each state to promulgate a State Implementation Plan (SIP) that provides for “implementation, maintenance, and enforcement” of the NAAQS in each AQCR in the state. The CAA also allows states to adopt air quality standards more stringent than the federal standards. As promulgated in Mississippi Code, Section 49, Chapter 17, Paragraph 19 as amended, the State of Mississippi has adopted the NAAQS as the Mississippi standards. The NAAQS have been adopted by the Arkansas Pollution Control and Ecology Commission under Regulation 19, Chapter 3, Section 19.301. Alabama has approved the NAAQS as stated in the Code of Alabama, 335-3-1-.01. The State of Tennessee has adopted NAAQS in the Rules of Tennessee Department of Environment and Conservation Bureau of Environment, Chapter 1200-3-3-.03. The State of Louisiana has implemented the NAAQS under Title 33, Part III, Chapter 705 of the Environmental Regulatory Code. Table 3.5-1 lists the national and state ambient air quality standards.

Table 3.5-1 National and Mississippi, Alabama, Tennessee, Arkansas, and Louisiana Ambient Air Quality Standards

Criteria Pollutant	Averaging Time	Primary NAAQSa,b	Secondary NAAQSc	State Standardsd
Carbon Monoxide	8-hour 1-hour	9 ppm (10,000 µg/m ³) 35 ppm (40,000 µg/m ³)	No standard No standard	9 ppm (10,000 µg/m ³) 35 ppm (40,000 µg/m ³)
Lead	Quarterly	1.5 µg/m ³	1.5 µg/m ³	1.5 µg/m ³
Nitrogen Oxides (measured as NO ₂)	Annual	0.0543 ppm (100 µg/m ³)	0.0543 ppm (100 µg/m ³)	0.0543 ppm (100 µg/m ³)
Ozone	1-hour	0.12 ppm (235 µg/m ³)	0.12 ppm (235 µg/m ³)	0.12 ppm (235 µg/m ³)
Particulate Matter (measured as PM ₁₀)	Annual 24-hour	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³	50 µg/m ³ 150 µg/m ³
Sulfur Oxides (measured as SO ₂)	Annual 24-hour 3-hour	0.03 ppm (80 µg/m ³) 0.14 ppm (365 µg/m ³) No standard	No standard No standard 0.50 ppm (1,300 µg/m ³)	0.03 ppm (80 µg/m ³) 0.14 ppm (365 µg/m ³) No standard

Note: Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon reference temperature of 25C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

- a National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM₁₀, the 24 hour standard is attained when 99 percent of the daily concentrations, averaged over three years, are equal to or less than the standard.
- b National Primary Standards: The levels of air quality necessary to protect the public health with an adequate margin of safety. Each state must attain the primary standards no later than three years after the state implementation plan is approved by the USEPA.
- c National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant. Each state must attain the secondary standards within a “reasonable time” after the state implementation plan is approved by the USEPA.
- d Mississippi ambient air quality standards are listed in Mississippi Code, Section 49, Chapter 17, Paragraph 19. Alabama ambient air quality standards are listed in the Code of Alabama, 335-3-1-.01. Tennessee ambient air quality standards are listed in the Table 1, Chapter 1200-3-3-.03 of the Rules of Tennessee Department of Environment and Conservation. Arkansas ambient air quality standards are listed by the Arkansas Pollution Control and Ecology Commission under Regulation 19, Chapter 3, Section

19.301. Louisiana ambient air quality standards are listed in Title 33, Part III, Chapter 705 of the Environmental Regulatory Code of Louisiana.

3.5.2 Regional Air Quality

The fundamental method by which the USEPA tracks compliance with the NAAQS is the designation of a particular region as “attainment” or “nonattainment.” Based on the NAAQS, each state is divided into three types of areas for each of the criteria pollutants. The areas are:

- Those in compliance with the NAAQS (attainment);
- Those that do not meet the ambient air quality standards (nonattainment); and
- Those where a determination of attainment/nonattainment cannot be made due to a lack of monitoring data (unclassifiable – treated as attainment until proven otherwise).

Generally, areas in violation of one or more of the NAAQS are designated nonattainment and must comply with stringent restrictions until all the standards are met. In the case of O₃, CO, and PM₁₀, USEPA divides nonattainment areas into different categories, depending on the severity of the problem in each area. Each nonattainment category has a separate deadline for attainment and a different set of control requirements under the SIP. The following paragraphs define the air quality status for the AQCRs associated with Columbus AFB, Shuqualak Auxiliary Airfield, GTRA, and the MTRs.

Columbus AFB is located in Lowndes County, within the Northeast Mississippi Intrastate AQCR 135. This AQCR includes the counties of Alcorn, Attala, Benton, Calhoun, Carroll, Chickasaw, Choctaw, Clay, Grenada, Holmes, Itawamba, Kemper, Lafayette, Leake, Lee, Lowndes, Marshall, Monroe, Montgomery, Neshoba, Noxubee, Oktibbeha, Panola, Pontotac, Prentiss, Tate, Tippah, Tishomingo, Union, Webster, Winston, and Yalobusha. The USEPA has designated the air quality within AQCR 135 as better than NAAQS for SO₂ and PM₁₀ and unclassified for CO, Pb, NO₂, and O₃.

AQCR 4 is located in Alabama and includes the counties of Bibb, Blount, Chilton, Fayette, Greene, Hale, Jefferson, Lamar, Pickens, St. Clair, Shelby, Sumter, Tuscaloosa and Walker. The air quality within AQCR 4 has been designated by USEPA as better than NAAQS for SO₂, unclassified for PM₁₀, CO, Pb, and NO₂, and nonattainment for O₃.

AQCR 5 is located in the states of Alabama, Florida and Mississippi. AQCR 5 includes Baldwin, Escambia and Mobile counties in Alabama. The AQCR includes Bay, Calhoun, Escambia, Gulf, Holmes, Jackson, Okaloosa, Santa Rosa, Walton and Washington in Florida. The AQCR includes the following counties in Mississippi: Adams, Amite, Clairborne, Clarke, Copiah, Covington, Forrest, Franklin, George, Greene, Hancock, Harrison, Hinds, Jackson, Jasper, Jefferson, Jefferson Davis, Jones, Lamar, Lauderdale, Lawrence, Lincoln, Madison, Morion, Newton, Pearl River, Perry, Pike, Rankin, Scott, Simpson, Smith, Stone, Walthall, Warren, Wayne and Wilkinson. AQCR 5 has been designated as unclassified for SO₂, PM₁₀, CO, Pb, NO₂, and O₃. AQCR 7 has been designated as exceeding NAAQS for SO₂, unclassified for PM₁₀, CO, O₃, and NO₂ and attainment for Pb.

AQCR 7 is located in Alabama and Tennessee. It includes the counties of Colbert, Cullman, Union, Franklin, Jackson, Lauderdale, Lawrence, Limestone, Madison, Marion,

Marshall, Morgan and Winston in Alabama. It includes the counties of Bledsoe, Coffee, Cumberland, Fentress, Franklin, Grundy, Marion, Morgan, Overton, Pickett, Putnam, Scott, Sequatchie, Warren, White and Van Buren in Tennessee. AQCR 7 has been designated as exceeding NAAQS for SO₂, attainment for Pb and unclassified for PM₁₀, CO, NO₂ and O₃.

AQCR 16 is located in Arkansas and includes the counties of Chicot, Clark, Cleveland, Conway, Dallas, Desha, Drew, Faulkner, Garland, Grant, Hot Springs, Jefferson, Lincoln, Lonoke, Perry, Pope, Pulaski, Saline and Yell. AQCR 16 has been designated as exceeding NAAQS for SO₂ and unclassified for CO, O₃, PM₁₀, NO₂, and Pb.

AQCR 19 is located in the states of Louisiana and Arkansas. It includes the parishes of Caldwell, Catahoula, Concordia, East Carroll, Franklin, La Salle, Madison, Morehouse, Ouachita, Richland, Tensas, Union and West Carroll in Louisiana. It includes the counties of Ashley, Bradley, Calhoun, Nevada, Ouachita and Union in Arkansas. AQCR 19 has been designated as exceeding NAAQS for SO₂ and unclassified for CO, O₃, PM₁₀, NO₂, and Pb.

AQCR 134 is located in Mississippi and includes the counties of Bolivar, Coahoma, Humphreys, Issaquena, Leflore, Quitman, Sharkey, Sunflower, Tallahatchie, Tunica, Washington and Yazoo. AQCR 134 has been designated as exceeding NAAQS for SO₂ and unclassified for PM₁₀, CO, O₃, NO₂, and Pb.

AQCR 208 is located in Tennessee and includes the counties of Bedford, Cannon, Cheatham, Clay, Davidson, DeKalb, Dickson, Giles, Hickman, Houston, Humphreys, Jackson, Lawrence, Lewis, Lincoln, Macon, Marshall, Maury, Montgomery, Moore, Perry, Robertson, Rutherford, Smith, Stewart, Sumner, Trousdale, Wayne, Williamson and Wilson. AQCR 208 has been designated as not meeting secondary standards for PM₁₀, attainment for Pb, exceeding NAAQS for SO₂ and unclassified for CO, O₃, and NO₂.

AQCR 209 is located in Tennessee and includes the counties of Benton, Carroll, Chester, Crockett, Decatur, Dyer, Fayette, Gibson, Hardeman, Hardin, Haywood, Henderson, Henry, Lake, Lauderdale, McNairy, Madison, Obion, Tipton and Weakley. AQCR 209 has been designated as exceeding SO₂, attainment for Pb and unclassified for PM₁₀, CO, O₃, and NO₂.

3.5.3 Baseline Air Emissions

Columbus AFB, Shuqualak Auxiliary Airfield, and Golden Triangle Regional Airport

An air emissions inventory is an estimate of total mass emissions of pollutants generated from a source or sources over a period of time, typically a year. Accurate air emissions inventories are needed for estimating the relationship between emissions sources and air quality. Quantities of air pollutants are generally measured in pounds (lbs) per year or tpy. All emission sources may be categorized as either mobile or stationary emission sources. Stationary emission sources may include boilers, generators, fueling operations, industrial processes, and burning activities, among others. Mobile emission sources typically include vehicle operations.

The calendar year (CY) 2000 air emissions inventory summary for the AQCR 135, which includes reported permitted stationary, mobile, and grandfathered air emission sources, is presented in Table 3.5-2. Data in the table include emissions for Columbus AFB as well as the Base's aircraft operations at Shuqualak Auxiliary Airfield and aircraft operations at the Golden Triangle Regional Airport. Table 3.5-3 lists the emissions calculated for the baseline aircraft operations activities at Columbus AFB and Shuqualak Auxiliary Airfield.

Table 3.5-2 Baseline Air Emissions Inventory, Air Quality Control Region 135

CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
379,722	93,371	79,718	10,082	126,795

Note VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data reflected as tons per year.

Source: USEPA 2003.

Table 3.5-3 Baseline Emissions from Columbus AFB Aircraft Operations within Air Quality Control Region 135

Location	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
Columbus AFB	473.9	57.1	5.3	2.4	0.6
Shuqualak Auxiliary Airfield	32.1	3.9	0.6	0.2	0.1
IR-066	4.5	0.1	0.6	0.0	0.0
IR-067	0.0	0.0	0.0	0.0	0.0
IR-068	0.0	0.0	0.1	0.0	0.0
IR-091	8.0	0.3	0.8	0.3	0.0
VR-1014	2.2	0.0	0.2	0.0	0.0
VR-1050	0.2	0.0	0.3	0.0	0.0
VR-1051	0.2	0.0	0.6	0.0	0.0
SR-137	62.9	1.6	3.4	0.7	0.0
Total	584.0	63.0	11.9	3.6	0.7

Note VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data reflected as tons per year.

Source: USAF 1997a.

3.5.4 Military Training Routes

The MTRs overfly Mississippi, Alabama, Tennessee, Arkansas, and Louisiana. Table 3.5-4 lists the baseline emissions inventory for each AQCR within the MTR corridor, as well as the attainment status for each region. Table 3.5-5 lists the emissions from baseline MTR operations. The emissions from MTR operations that occur within AQCR 135 are listed in Table 3.5-3.

**Table 3.5-4 Baseline Air Emissions Inventories for Air Quality Control Regions
Associated with Military Training Routes**

AQCR	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)	Attainment Status
AQCR 4	887,254	144,949	328,711	354,167	144,024	Nonattainment - Ozone
AQCR 5	1,600,121	329,266	403,943	413,838	321,204	Attainment
AQCR 7	67,659	13,445	9,329	3,346	9,187	Attainment
AQCR 16	483,920	86,460	114,081	85,383	129,733	Attainment
AQCR 19	266,663	45,733	89,599	29,742	87,176	Attainment
AQCR 134	151,531	36,210	62,514	36,228	87,291	Attainment
AQCR 208	792,216	143,849	252,006	297,269	100,773	Does not meet secondary standard – PM ₁₀
AQCR 209	273,480	57,661	59,287	13,141	78,102	Attainment

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data reflected as tons per year. **Bold** indicates pollutant for which AQCR is nonattainment or maintenance.

Source: USEPA 2003.

Table 3.5-5 Baseline Emissions from Military Training Route Operations

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR 4					
IR-066	0.15	0.01	0.02	0.01	0.00
IR-067	0.00	0.00	0.00	0.00	0.00
VR-1014	7.13	0.20	0.59	0.00	0.00
VR-1050	0.07	0.00	0.20	0.00	0.00
VR-1051	0.00	0.00	0.01	0.01	0.00
Total MTR Emissions	7.35	0.21	0.82	0.02	0.00
AQCR 5					
VR-1072	0.6	0.1	1.5	0.1	0.0
AQCR 7					
IR-066	5.2	0.3	0.8	0.2	0.0
IR-067	0.0	0.0	0.0	0.0	0.0
VR-1014	7.3	0.2	0.6	0.0	0.0
VR-1050	0.1	0.0	0.3	0.0	0.0
VR-1051	0.2	0.0	0.6	0.4	0.0
Total MTR Emissions	12.8	0.5	2.3	0.6	0.0
AQCR 16					
IR-070	0.2	0.0	0.6	0.1	0.0
AQCR 19					
IR-070	0.2	0.0	0.7	0.1	0.0
AQCR 134					
IR-068	2.6	0.1	0.7	0.0	0.0
IR-070	0.2	0.0	0.5	0.1	0.0
IR-091	0.4	0.0	0.2	0.0	0.0
Total MTR Emissions	3.2	0.1	1.4	0.1	0.0
AQCR 208					
IR-066	2.5	0.1	0.2	0.0	0.0
IR-067	0.1	0.1	0.1	0.0	0.0
VR-1050	0.1	0.0	0.1	0.0	0.0
VR-1051	0.3	0.0	0.8	0.1	0.0

Table 3.5-5 Baseline Emissions from Military Training Route Operations
(cont'd)

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM ₁₀ (tpy)
Total MTR Emissions	3.0	0.2	1.2	0.1	0.0
AQCR 209					
IR-066	3.4	0.1	0.6	0.0	0.0
IR-067	0.1	0.0	0.2	0.0	0.0
VR-1050	0.1	0.0	0.1	0.0	0.0
VR-1051	0.3	0.0	0.9	0.0	0.0
Total MTR Emissions	3.9	0.1	1.8	0.0	0.0

tpy tons per year.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Source: USAF 1997a.

3.6 INFRASTRUCTURE AND UTILITIES

3.6.1 Energy

Electricity

The Columbus AFB electrical distribution system has a 24 megawatt capacity and, during FY03, base usage was 40,676,105 kilowatt hours (kWh), or 111,441 kWh per day. This equated to 138,848 thousand British thermal units (MBtu) annually, or 380 MBtu daily (Smith 2003). Columbus AFB has approximately 2,656,000 square feet of space that is climate controlled. Based on the annual electricity consumption, the square feet of space, and 365 days per year, electricity consumption is 0.04196 kWh per square foot per day.

Natural Gas

The Mississippi Valley Gas Company supplies gas to Columbus AFB and has an estimated annual delivery capacity of 139,200 million cubic feet (Mcf), or 381.4 Mcf daily. Natural gas usage for FY03 was 116,950 Mcf (320.4 Mcf/day), or 120,575 MBtu (330.3 MBtu/day) (Smith 2003). Based on the annual natural gas consumption, the square feet of climate controlled space, and 365 days per year, natural gas consumption is 0.000121 Mcf per square foot per day.

3.6.2 Solid Waste Management

Municipal solid waste (MSW) management at Columbus AFB is managed in accordance to the guidelines specified in AFI 32-7042, *Solid and Hazardous Waste Compliance*. The instruction incorporates by reference the requirements of Subtitle D, 40 CFR Parts 240 through 244, 257, and 258, and other applicable federal regulations, AFIs and Department of Defense Directives (DoDDs). In general, AFI 32-7042 establishes the requirement for installations to have a solid waste management program to incorporate the following: a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; record-keeping and reporting; and pollution prevention.

In 2002, Columbus AFB disposed 1,347.58 tons of MSW, an average of 3.69 tons per day. Family housing residents separate recyclable materials and set them at the curbside for pickup by base recycling personnel. Additionally, recycling bins are located

around the Base for drop-off. A total of 641 tons of MSW were recycled, which equates to 32.2 percent of the total MSW generated (Brannon 2003).

Columbus AFB MSW is disposed of in the Golden Triangle Solid Waste Authority Landfill in Starkville, Mississippi. The facility has a permitted capacity of 264 acres and an expected life span of about 100 years. Approximately 470 tons per day are disposed of in the landfill (Sloan 2003).

3.6.3 Storm Water Management

Columbus AFB has a Storm Water Pollution Prevention Plan (SWPPP) to document existing storm water management practices at the Base and to serve as a guide for base personnel to ensure that the potential for storm water contamination is minimized. On September 12, 2000 the Mississippi Department of Environmental Quality issued the Base a storm water permit (#MSR001351). The federal Clean Water Act (33 United States Code [USC] 121, *et seq.*) makes it illegal to discharge pollutants from a point source into navigable waters of the United States except in compliance with a permit.

Approximately 200,000 linear feet of storm drain lines collect storm water from nearly 500 inlets throughout the Base. While most areas of the Base drain to the Tombigbee River, the northeast portion drains to the Buttahatchie River (USAF 1997a). The total area of the Base is 192,143,929 square feet and the footprint of the facilities occupy 2,338,110 square feet. Based on these data, approximately 1.22 percent of the total base area is impervious cover associated with facilities.

3.6.4 Transportation Systems

Columbus AFB has excellent access to the regional transportation network of highways. The base is accessed from US Highway 45 via an access road from the east through the East Gate and from State Highway 373 through the South Gate.

It is estimated that approximately 6,735 vehicles per work day enter and exit Columbus AFB via the two gates. During the peak flow periods (7:20-7:30 a.m., 11:30 a.m.-12:15 p.m., and 4:15-4:25 p.m.) traffic is greater at the East Gate, primarily because of direct access to the four-lane US Highway 45. However, total traffic volume over a 24-hour period is greater at the South Gate (USAF 1997a).

In general, traffic flows well with only minor congestion occurring during rush hours. Vehicle parking is adequate for most areas. Parking space shortages are most likely to occur in areas near the aircraft maintenance functions and flying training squadrons (USAF 1997a).

3.7 BIOLOGICAL RESOURCES

The MTRs for the Proposed Action cover a broad geographic area in Mississippi, Alabama, Tennessee, Arkansas, and Louisiana. The diversity of landforms and geography covered by the routes support a number of plant communities and associated animal species. There are no known effects of noise or overflight disturbance to plant species. Therefore, biological resources are limited to birds and mammals, specifically, threatened, endangered, and special status species.

The Endangered Species Act (ESA) recognizes that many species of fish, wildlife, and plants are in danger of, or threatened with, extinction. The ESA established a national policy that all federal agencies should work toward conservation of these species. Table 3.7-1 contains the federally listed threatened and endangered wildlife that could occur within the MTR corridors. Tables 3.7-2 through 3.7-6 contain the state listed species of concern for Alabama, Arkansas, Louisiana, Mississippi, and Tennessee, respectively.

Table 3.7-1 Federally Listed Threatened and Endangered Wildlife

Species	IR-66	IR-67	IR-68	IR-70	IR-91	VR-1014	VR-1050	VR-1051	VR-1072	SR-137
Alabama Beach Mouse										
American Burying Beetle	X	X			X		X	X		X
Bald Eagle	X	X	X	X	X		X	X	X	X
Black Bear					X		X			
Brown Pelican				X						
Flattened Musk Turtle	X	X				X	X	X		
Florida Panther	X*	X*		X		X*	X*	X*	X	
Gopher Tortoise									X	
Gray Myotis (Bat)	X	X		X		X*	X	X		
Indiana or Social Myotis (Bat)	X	X		X		X*	X	X		
Interior Least Tern			X	X						
Louisiana Black Bear			X	X					X	X
Red-Cockaded Woodpecker	X	X		X	X		X	X	X	X
Ringed Map Turtle									X	X
Wood Stork				X					X	
Yellow-Blotched Map Turtle									X	

* County-specific species lists were not available for Alabama; therefore, all species occurrences marked with an asterisk may not be specific to the MTRs covering Alabama.

Table 3.7-2 Listed Species of Concern, Alabama

Species of Concern	IR-66	IR-67	VR-1014	VR-1050	VR-1051
Allegheny woodrat	X*	X*	X*	X*	X*
American oystercatcher	X*	X*	X*	X*	X*
American swallow-tailed kite	X*	X*	X*	X*	X*
Appalachian Bewick's wren	X*	X*	X*	X*	X*
Appalachian cottontail	X*	X*	X*	X*	X*
Bachman's sparrow	X*	X*	X*	X*	X*
Bank swallow	X*	X*	X*	X*	X*
Black rail	X*	X*	X*	X*	X*
Black skimmer	X*	X*	X*	X*	X*
Black tern	X*	X*	X*	X*	X*
Black-necked stilt	X*	X*	X*	X*	X*
Brazilian free-tailed bat	X*	X*	X*	X*	X*
Cerulean warbler	X*	X*	X*	X*	X*
Clapper rail	X*	X*	X*	X*	X*
Common barn owl	X*	X*	X*	X*	X*
Common ground dove	X*	X*	X*	X*	X*
Common merganser	X*	X*	X*	X*	X*
Common raven	X*	X*	X*	X*	X*
Dickcissel	X*	X*	X*	X*	X*

Table 3.7-2 Listed Species of Concern, Alabama
(cont'd)

Species of Concern	IR-66	IR-67	VR-1014	VR-1050	VR-1051
Eastern spotted skunk	X*	X*	X*	X*	X*
Florida black bear	X*	X*	X*	X*	X*
Fulvous whistling duck	X*	X*	X*	X*	X*
Glossy ibis	X*	X*	X*	X*	X*
Gray kingbird	X*	X*	X*	X*	X*
Greater sandhill crane	X*	X*	X*	X*	X*
Greater siren	X*	X*	X*	X*	X*
Greater white-fronted goose	X*	X*	X*	X*	X*
Henslow's sparrow	X*	X*	X*	X*	X*
Hooded merganser	X*	X*	X*	X*	X*
Lark sparrow	X*	X*	X*	X*	X*
Le Conte's sparrow	X*	X*	X*	X*	X*
Least bittern	X*	X*	X*	X*	X*
Lesser golden plover	X*	X*	X*	X*	X*
Little brown myotis	X*	X*	X*	X*	X*
Loggerhead shrike	X*	X*	X*	X*	X*
Long-billed dowitcher	X*	X*	X*	X*	X*
Marsh rabbit	X*	X*	X*	X*	X*
Meadow jumping mouse	X*	X*	X*	X*	X*
Mottled duck	X*	X*	X*	X*	X*
Northern myotis	X*	X*	X*	X*	X*
Northern yellow bat	X*	X*	X*	X*	X*
Oldsquaw	X*	X*	X*	X*	X*
Osprey	X*	X*	X*	X*	X*
Painted bunting	X*	X*	X*	X*	X*
Pied-billed grebe	X*	X*	X*	X*	X*
Prairie vole	X*	X*	X*	X*	X*
Rafinesque's big-eared bat	X*	X*	X*	X*	X*
Reddish egret	X*	X*	X*	X*	X*
Red-throated loon	X*	X*	X*	X*	X*
Ruffed grouse	X*	X*	X*	X*	X*
Seaside sparrow	X*	X*	X*	X*	X*
Seminole bat	X*	X*	X*	X*	X*
Solitary vireo	X*	X*	X*	X*	X*
Song sparrow	X*	X*	X*	X*	X*
Southeastern American kestrel	X*	X*	X*	X*	X*
Southeastern myotis (bat)	X*	X*	X*	X*	X*
Southeastern pocket gopher	X*	X*	X*	X*	X*
Southeastern snowy plover	X*	X*	X*	X*	X*
Stoddard's yellow-throated warbler	X*	X*	X*	X*	X*
Swainson's warbler	X*	X*	X*	X*	X*
Tundra swan	X*	X*	X*	X*	X*
White-eyed vireo	X*	X*	X*	X*	X*
Wilson's plover	X*	X*	X*	X*	X*
Yellow -crowned night-heron	X*	X*	X*	X*	X*
Yellow rail	X*	X*	X*	X*	X*
Yellow throated vireo	X*	X*	X*	X*	X*

* County-specific species lists were not available for Alabama; therefore, all species occurrences marked with an asterisk may not be specific to the MTRs covering Alabama.

Table 3.7-3 Listed Species of Concern, Arkansas

Species of Concern	IR-70
American badger	X
Brazilian free-tailed bat	X
Buttermilk racer	X
Cerulean warbler	X
Desert shrew	X
Green water snake	X
Gulf crayfish snake	X
Louisiana milk snake	X
Northern scarlet snake	X
Osprey	X
Ozark big-eared bat	X
Plains harvest mouse	X
Rafinesque's big-eared bat	X
Ringtail	X
Southeastern myotis (bat)	X
Southeastern shrew	X
Swainson's warbler	X
Texas coral snake	X
Texas horned lizard	X

Table 3.7-4 Listed Species of Concern, Louisiana

Species of Concern	IR-66	IR-70
Bell's vireo		X
Long-tailed weasel	X	X
Sandhill crane		X

Table 3.7-5 Listed Species of Concern, Mississippi

Species of Concern	IR-66	IR-67	IR-68	IR-70	IR-91	VR-1014	VR-1050	VR-1051	VR-1072	SR-137
American white pelican			X	X						
Bachman's sparrow	X				X		X	X	X	X
Bewick's wren	X	X		X	X		X	X		
Black buffalo	X	X					X	X	X	
Black buffalo			X	X						
Black-crowned night heron				X					X	X
Burrowing owl									X	
Cliff swallow	X	X	X		X	X	X	X	X	
Cooper's hawk					X					X
Golden eagle				X					X	
Hoary bat			X						X	
Meadow jumping mouse							X			
Merlin				X						
Northern myotis	X	X					X	X		
Oldfield mouse	X	X					X	X	X	X
Osprey			X	X	X			X	X	
Red crossbill										X
Scissor-tailed flycatcher	X			X			X		X	
Sharp-shinned hawk	X	X					X	X		
Silver-haired bat									X	
Swallow-tailed kite									X	
White ibis				X					X	

Table 3.7-6 Listed Species of Concern, Tennessee

Species of Concern	IR-66	IR-67	VR-1050	VR-1051
Anhinga		X		X
Bachman's sparrow				X
Bewick's wren	X	X	X	X
Cerulean warbler	X	X	X	X
Common barn owl	X	X	X	X
Common shrew		X		X
Eastern big-eared bat		X		
Eastern small-footed bat				X
Eastern woodrat	X	X	X	X
Golden eagle				X
Gray bat	X	X	X	X
Great egret		X		X
Henslow's sparrow				X
Lark sparrow	X	X	X	X
Least bittern		X		X
Little blue heron	X	X	X	X
Meadow jumping mouse	X	X	X	X
Mississippi kite		X		
Sharp-shinned hawk				X
Southeastern shrew		X		X
Southeastern shrew	X	X	X	X
Southern bog lemming	X	X	X	X
Swainson's warbler	X	X	X	X
Yellow-bellied sapsucker		X		X

3.8 HAZARDOUS MATERIALS AND WASTES

3.8.1 Hazardous Materials

Hazardous materials are those substances defined by Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 USC Section 9601, *et seq.*), as amended by the Superfund Amendments and Reauthorization Act (40 CFR 300-372), and the Toxic Substances Control Act (15 USC Section 2601, *et seq.*). The Solid Waste Disposal Act as amended by the Resource Conservation and Recovery Act (RCRA) (42 USC 6901, *et seq.*), that was further amended by the Hazardous and Solid Waste Amendments, defines hazardous wastes. In general, both hazardous materials and wastes include substances that, because of their quantity, concentration, physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or to the environment when released or otherwise improperly managed.

Hazardous materials management at Air Force installations is established primarily by AFI 32-7086, *Hazardous Materials Management*. The AFI incorporates the requirements of all federal regulations, other AFIs, and DoDDs, for reduction of hazardous material uses and purchases.

The purchase and use of hazardous materials on Columbus AFB must be authorized by the Base's Hazardous Materials Management Plan (HMMP) established by AFI 32-7086, *Hazardous Materials Management*. As part of this program, the Base operates a hazardous materials pharmacy. All hazardous materials enter the Base through

the pharmacy. Base functions request the hazardous material and quantity from the Base pharmacy and the material is delivered to or picked up by the requesting function. No hazardous material may be used until it is entered into the Environmental Management Information System and approved for use. Under this system, the hazardous material pharmacy personnel maintain positive records for the location of the containers, from issue to return and ultimate disposal. The HMMP applies to all activities, including contractors. Residents of the Columbus AFB housing areas may purchase cleaning supplies and other chemicals for personal use that contain constituents that are classified as hazardous materials. However, the Base does not track these purchases and the quantity of these materials is unknown.

3.8.2 Hazardous Wastes

Unless otherwise exempted by CERCLA regulations, RCRA, Subtitle C (40 CFR Parts 260 through 279) regulations are administered by the USEPA and are applicable to the management of hazardous wastes. Hazardous waste must be handled, stored, transported, disposed, or recycled in accordance with these regulations.

Columbus AFB is registered with the USEPA as a large quantity generator of hazardous waste (HW). According to the Columbus AFB Hazardous Waste Management Program (HWMP), a total of 31 recurring hazardous waste streams have been identified (Blythe 2003).

Hazardous wastes are generated and temporarily stored at 11 HW satellite accumulation points located in 10 buildings on the installation (Blythe 2003). When the maximum volume of HW at the hazardous waste satellite accumulation point (normally 55 gallons/per waste stream) is reached, the waste is moved to the accumulation site at Bldg. 267. Then, within 90 days of the accumulation start date, HWs are transported to an appropriate treatment, storage, and disposal facility. Used oil and hydraulic fluid are transported separately for recycling. Refrigerants are recovered, recycled, and reused in maintenance facilities.

In 2002, approximately 34,105 lbs of HW from Columbus AFB were transported for disposal (Blythe 2003). Columbus AFB has reduced HW generation from a high of 143,116 lbs in CY93.

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

Converting from the T-37 to T-6 aircraft would modernize SUPT at Columbus AFB. The Columbus AFB pilot training mission would be improved with the T-6 aircraft.

4.2 AIRSPACE AND AIRFIELD OPERATIONS, AIRCRAFT SAFETY, AND BIRD-AIRCRAFT STRIKE HAZARD

Impacts are assessed by comparing projected military flight operations and proposed airspace utilization with baseline conditions, to include civil aviation activities. This assessment includes analyzing 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

Columbus AFB

Airspace Operations

Given the size and operating similarities (*i.e.*, airspeed and flight profiles) of the T-6 and T-37 aircraft, the type of sortie operations and airspace requirements associated with the Proposed Action would be consistent with the baseline operations. There would be no change in the number of sortie operations in the ROI airspace by Columbus AFB aircraft since the number of sorties flown by T-6 aircraft would be the same as that flown by T-37s and the number of T-1, and T-38 sorties would remain the same as the baseline. The existing air traffic control procedures and airspace infrastructure surrounding Columbus AFB have the capability to accommodate the anticipated T-6 operations. The low altitude federal airways and MTRs that transit within 10 NM of the Base would not be impacted, nor would operations on these airspace elements affect operations in the airspace.

Airfield Operations

T-6 airfield operations would be accomplished primarily on Runway 13R/31L, the runway used for nearly all T-37 operations. Baseline use of Runways 13L/31R and 13Center/31Center would continue for T-1 and T-38 operations. The number of T-6 operations would remain the same as that for the T-37 (*i.e.*, 997.54 average daily operations). The airfield has the capacity to support this level of operations. The existing aircraft ground tracks, and instrument approach procedures, as well as the air traffic control procedures, would accommodate the T-6.

The operating characteristics of the T-6 are similar to the T-37. Thus, the T-6 traffic pattern aircraft ground tracks, profiles, and airspeeds are anticipated to be nearly identical to those currently flown by the T-37. However, as indicated in Section 2.3, T-6 aircrews would accomplish ELP patterns to Runway 13R/31L. The ELP would begin at 3,000 feet above the runway and descend to land in one continuous 360 degree turn (either right or left turn, depending on the runway in use and other aircraft in the traffic pattern) at 15 to 30 degrees of bank and a diameter of about 1.4 miles. The 3,000 feet AGL initiation altitude would put the aircraft in airspace overhead the airfield that is controlled by the Columbus AFB RAPCON. The agency (*i.e.*, the RSU or the air traffic control tower) controlling the runway to which the ELP would be flown would coordinate approval for the ELP with the RAPCON. Thus, the airspace could accommodate the ELP and the air traffic control procedures could support the ELP pattern and landing.

Shuqualak Auxiliary Airfield

The elements and analysis for airspace operations at Columbus AFB in Section 4.2.1 apply to airspace operations at Shuqualak Auxiliary Airfield.

There would be no change in the number of T-6 airfield operations when compared to T-37 operations. The airfield has the capacity to accommodate the anticipated level of operations. The operating characteristics of the T-6 are similar to the T-7. Thus, the T-6 traffic pattern aircraft ground tracks, profiles, and airspeeds are anticipated to be nearly identical to those currently flown by the T-37. However, closed patterns would be flown to the southwest of the airfield as well as to the northeast. ELPs, as defined in Section 4.2.1, would be flown with turns to both the northeast and southwest sides of the runway and would be controlled by RSU personnel. The existing air traffic control procedures would accommodate T-6 operations at Shuqualak Auxiliary Airfield.

Golden Triangle Regional Airport

The existing standard aircraft routings established by Columbus AFB RAPCON and used under the baseline condition for aircraft to proceed to and from GTRA would accommodate T-6 aircraft. There would be an additional 23,388 annual sortie operations (116.95 average daily operations based on 245 days per year of operations) within the ROI airspace from T-6 operations at GTRA. These operations would occur when flying training is in progress at the Base and would be controlled by Columbus AFB RAPCON since it controls ROI airspace. Flying training would not occur when the RAPCON is not operating.

Under the Proposed Action, T-6 aircraft would accomplish 467.76 average daily operations in addition to the 54.86 operations flown by other aircraft. No T-6 airfield operations would be conducted during the nighttime (10:00 p.m. and 7:00 a.m.). The airfield has the capacity to accommodate the anticipated level of operations.

Other than the ELP and closed box pattern to outside downwind, the altitudes and dimensions of T-6 traffic patterns would be very similar to those flown by the civil aircraft under the baseline condition. The T-6 aircraft tracks would avoid overflying residential areas to the maximum extent possible. T-6 aircraft operations at GTRA would follow six basic flight patterns (see Figure 3.2-1).

- Straight-out takeoff/departure;

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

ELPs would be flown with turns to both the east and west sides of the runway. The ELP, as defined in Section 4.2.1, would begin in airspace overhead the airfield that is controlled by the Columbus AFB RAPCON. Air traffic control tower personnel would coordinate approval for the ELP with the RAPCON. Thus, the airspace could accommodate the ELP and the air traffic control procedures could support the ELP pattern and landing. In summary, the airspace around the airport in which the traffic patterns would occur, as well as the air traffic control procedures, would support the anticipated T-6 operations at GTRA without conflict from or to other aviation activity.

Military Training Routes

VR-1014 would be flown about 116 times each month, while SR-137 would be used about 201 times per month (see Table 2.3-4). Neither VR-1014 nor SR-137 would require modification to support T-6 operations. Thus, there would be no need to change the specific data for either route as presented in Appendix B.

Several conditions reduce the potential “competition” for the same airspace at intersecting points by aircraft on an airway and aircraft on an MTR. The airway can be flown under both VFR and IFR conditions, as can an IR. Under IFR conditions, aircraft are radar identified and controlled by air traffic control, and the pilots maintain radio communication with air traffic control agencies, thereby improving aircraft separation conditions. When flying in visual meteorological conditions, pilots use the “see and avoid” concept. A VR is flown only under VFR conditions. Therefore, potential for conflict between aircraft during VFR conditions is greater than for IFR because aircraft are not necessarily radar identified. However, VFR conditions provide a better opportunity for pilots to “see and avoid” each other. Additionally, aircraft on airways and aircraft on the MTR monitor common air traffic control frequencies for air traffic advisories and guard frequencies for emergency notification. Air traffic control personnel monitor aircraft directly by radar monitoring and communication with aircraft through periodic receipt of aircraft position through position reporting. Position reporting and traffic advisories, combined with visual contact between pilots and radar control of aircraft, reduce the potential for two aircraft at the same altitude, at the same point, at the same time. Given the conditions mentioned in this paragraph, the probability would be very low that an aircraft on an airway and an aircraft on a MTR or transition corridor would be at the same altitude at the same position.

As indicated in Appendix B, some MTRs could penetrate airspace associated with instrument approaches at airports along the routes. Operating procedures direct aircrews flying an MTR to contact the air traffic control tower associated with the airport for traffic advisories and route alteration, if necessary, to avoid other traffic. Additionally, directives request that aircraft on an MTR avoid airports by 3 NM and 1,500 feet AGL where practicable. Continuation of these procedures would assist Columbus AFB T-6

aircrews to minimize conflict between MTR operations and aircraft executing an instrument approach to an airport along the route.

In summary, both MTRs have the capacity to accommodate the operations projected for the Proposed Action, and the structure for each route can support anticipated operations. The potential for conflict between aircraft operating on the MTRs as well as other civil aircraft operating in the airspace around the MTRs is low because the existing scheduling and air traffic control procedures are designed to minimize conflict between aircraft. The proposed MTR operations would not place demands on, nor impact, the airspace infrastructure.

Aircraft Safety

It is impossible to predict the precise location of an aircraft accident. However, aircraft flight tracks are developed to avoid overflying residences and built-up areas to the maximum extent practicable. As mentioned in Chapter 3, 68 percent of the Air Force aircraft accidents that occur within a 10-nautical mile radius of an airfield happen either on the airfield or within an area that is 3,000 feet wide and extends out to a distance of 15,000 feet from the end of the runway. The types of T-6 landing and takeoff operations at Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA, as well as MTR and MOA operations, would be consistent with those flown by the T-37 aircraft. Table 4.2-1 lists the Class A mishap data for the T-6. Given the similarity in flight characteristics between the T-6 and T-37 aircraft, it is anticipated the mishap distribution discussed in Section 3.2.3 for takeoffs and landings would apply to the T-6 operations anticipated under the Proposed Action.

Table 4.2-1 T-6 Class A Aircraft Mishap Information

Aircraft	Lifetime Class A Mishaps	Lifetime Class A Mishap Rate	Years of Data	Cumulative Flight Hours
T-6	1	11.63	2	8,601

Note: The mishap rate is an annual average based on the total mishaps and 100,000 flying hours.
Source: USAF 2003k.

Based on the one mishap and the low number of flying hours to date for the T-6, the mishap rate for the aircraft likely is higher than that which will occur as the flying hours increase. Typically, the mishap rate for an aircraft type decreases the longer the aircraft is flown and eventually stabilizes at a rate that remains fairly constant. For example, the T-37 had a 149.25 Class A mishap rate the first year it was flown, a 14.9 rate the second year, while the rate for the most recent 10 years is 0.35 mishaps. Given the size and operating characteristic similarities between the T-6 and T-37 aircraft, it is anticipated the Class A mishap rate for the T-6 eventually will be similar to the T-37. For the reason in this and the previous paragraph, the probability is low that an aircraft involved in an accident at or around Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA or on a MTR would strike a person or structure on the ground.

Bird-Aircraft Strike Hazard

Bird-aircraft strike hazards can be assessed using a combination of bird distribution and behavior factors and aircraft operational factors. Some of these factors include:

- The size and behavior of the predominant bird species;

- The presence of specialized habitat or location that favors migration patterns or large concentrations of birds;
- The frequency and location of takeoffs and landings;
- The altitude of flight operations; and
- The flight characteristics of the aircraft, including size, airspeed, and number of engines.

It is estimated the total flying hours for T-6 aircraft would remain the same as that for the T-37 under the Proposed Action because there would be no change in the number of sorties flown or sortie duration. Additionally, the size and operating characteristics (*i.e.*, altitudes flown and airspeeds) of the T-6 and T-37 are very similar. For these reasons, T-6 bird-aircraft strikes associated with operations at Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA, as well as on the MTRs, would be expected to remain approximately the same as the baseline.

The number of bird-aircraft strikes could fluctuate as a result of the cyclical patterns of bird populations. Historically, 1/2 of 1 percent of all reported bird-aircraft strikes involving Air Force aircraft resulted in a serious mishap. Therefore, it is unlikely that any of these bird-aircraft strike incidents would involve injury either to aircrews or to the public, or damage to property (other than the aircraft).

4.2.2 No Action Alternative

Columbus AFB would continue to operate T-1, T-37, and T-38 aircraft and the Shuqualak Auxiliary Airfield would be used by the Base's T-37 aircraft. Airspace, runway, and MTR use would remain the same as the baseline. The air traffic control procedures, which accommodate the current levels of activity, would continue to be used to control aircraft operations at the Base, Shuqualak Auxiliary Airfield, and on the MTRs. The aircraft safety and BASH conditions would remain the same as the baseline.

4.2.3 Mitigation

No airspace or airfield operations, aircraft safety, or BASH impacts would occur. Therefore, no mitigation would be required.

4.2.4 Cumulative Impacts

Cumulative impacts would not occur at Shuqualak Auxiliary Airfield since neither the T-1 nor T-38 aircraft would conduct operations at the airfield. Thus, there is no cumulative impact discussion for Shuqualak Auxiliary Airfield.

Columbus AFB

Airspace Operations

There should be no change in the number of sortie operations in the ROI airspace by Columbus AFB aircraft since the combined number of sorties flown by T-6, T-1, and T-38 aircraft would be the same as that flown under the baseline. The existing air traffic control procedures and airspace infrastructure surrounding Columbus AFB have the capability to accommodate the anticipated operations. The low altitude federal airways and MTRs that transit within 10 NM of the Base would not be impacted, nor would operations on these airspace elements affect operations in the airspace.

Airfield Operations

T-6 airfield operations would be accomplished on Runway 13R/31L and Runways 13L/31R and 13Center/31Center would continue to be used for T-1 and T-38 operations. Overall, SUPT-related operations would increase by 95.83 daily operations, a 6 percent increase, due to the refinements to the T-1 and T-38 flying training programs. The airfield has the capacity to support this level of operations. The existing aircraft ground tracks, pattern altitudes, and instrument approach procedures, as well as the air traffic control procedures, would accommodate the T-1, T-6, and T-38 operations at Columbus AFB.

Golden Triangle Regional Airport

The existing standard aircraft routings established by Columbus AFB RAPCON and used under the baseline condition for aircraft to proceed to and from GTRA would accommodate T-1 and T-6 aircraft. There would be an additional 30,738 annual sortie operations (146.94 average daily operations based on 245 days per year of operations) within the ROI airspace from T-6 and T-1 operations at GTRA. These operations would occur when flying training is in progress at the Base and would be controlled by Columbus AFB RAPCON since it controls ROI airspace. Flying training would not occur when the RAPCON is not operating.

Under the cumulative condition, T-6 and T-1 aircraft would accomplish 537.76 average daily operations in addition to the 54.86 operations flown by other aircraft. No T-1 or T-6 airfield operations would be conducted during the nighttime (10:00 p.m. and 7:00 a.m.). The airfield has the capacity to accommodate the anticipated level of operations. The discussion and analysis for the Proposed Action, to include flight patterns, apply to the cumulative condition.

Military Training Routes

Under the cumulative condition, individual route use would range from as few as five monthly operations on IR-067 and VR-1050, respectively, to as many as 201 monthly operations on SR-137 (see Table 2.5-4). None of the routes would require modification to support the anticipated level of operations. Thus, there would be no need to change to the specific data for any route in Appendix B.

The discussion and analyses for the Proposed Action apply to the cumulative condition. The potential for conflict between aircraft operating on the MTRs as well as other civil aircraft operating in the airspace around the MTRs is low because the existing scheduling and air traffic control procedures are designed to minimize conflict between aircraft. The proposed MTR operations would not place demands on the airspace infrastructure.

Aircraft Safety

The general mishap aircraft distribution as well as the specific T-6 analysis for the Proposed Action apply to the cumulative condition. The types of T-1 and T-38 landing and takeoff operations at Columbus AFB and GTRA (T-1), as well as MTR and MOA operations, would be consistent with those flown over the lifetime for each aircraft. Table 3.2-1 lists the Class A mishap data for the T-1 and T-38 aircraft. Thus, it is anticipated the mishap rates presented in Section 3.2.3 for T-1 and T-38 takeoffs and

landings would continue for the T-1 and T-38 operations anticipated under the cumulative condition.

Bird-Aircraft Strike Hazard

The bird-aircraft strike factors and fluctuation data presented for the Proposed Action apply to the cumulative condition. It is estimated the total flying hours for Columbus AFB's three aircraft types (T-6, T-1, and T-38) would remain the same as the baseline because there would be no change in the number of sorties flown or sortie duration. For these reasons, bird-aircraft strikes associated with operations at Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA, as well as on the MTRs, would be expected to remain approximately the same as the baseline. Based on the five-year average data in Table 3.2-2, it is estimated that approximately 103 bird-aircraft strikes would occur annually from Columbus AFB aircraft operations.

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 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 or L_{dnmr} dBA for averaged noise analysis.

Several items were examined in evaluating potential noise impacts, including (1) the degree to which noise levels generated by construction and 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 or L_{dnmr} 65 dBA.

4.3.1 Proposed Action

Columbus AFB

Figure 4.3-1 shows the aircraft ground tracks and Figure 4.3-2 depicts the noise exposure area from the aircraft operations condition at the Base after the T-6 basing is complete. Table 2.3-1 lists the anticipated airfield operations. Approximately 5 percent of the operations would occur at nighttime (10:00 p.m. to 7:00 a.m.). Figure 4.3-3 compares the Proposed Action and baseline noise contours.

Noise exposure to the north, northeast, east, southeast, and south remains nearly the same as the baseline condition. The area of exposure to the southwest and northwest decreases because the aircraft overflying this area would be T-6s, which are quieter than the T-37 aircraft that would be replaced.

Table 4.3-1 compares the baseline Proposed Action DNL and Table 4.3-2 presents the SEL for the T-6 aircraft at the analysis points. The T-6 is about 5 dBA quieter than

the T-37 at 1,000 feet from the aircraft during takeoff. There would be no change for the T-1 and T-38A aircraft (see Table 3.3-1 for T-1 and T-38A data).

Table 4.3-1 DNL Comparison from Proposed Airfield Operations at Analysis Points with Baseline, Columbus AFB

Analysis Point Number	Description	BL	PA	Chg
R1	Mobile Home Park	60	58	-2
R2	Mobile Home Park	70	70	0
R3	Mobile Home Park	69	69	0
R4	Mobile Home Park	81	81	0
R5	Residence	58	58	0
R6	Residence	68	66	-2

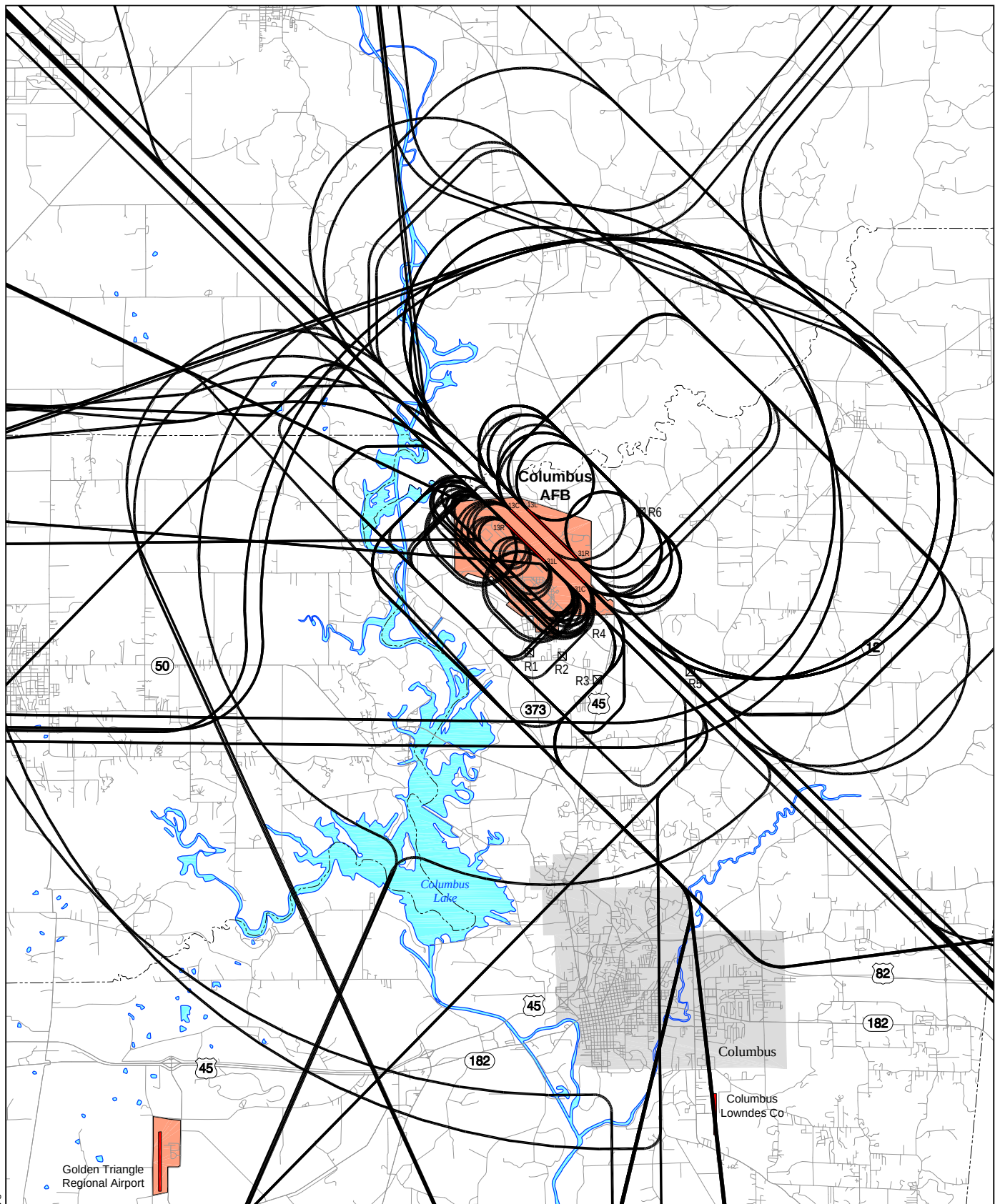
Note: BL=baseline. PA=Proposed Action. Chg=change. The analysis point number and description correspond to the point as reflected on the noise contour and aircraft ground track figures. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map.

Table 4.3-2 Sound Exposure Level Comparison from Proposed Airfield Operations at Analysis Points with Baseline, Columbus AFB

Analysis Point Number	Description	T6 SEL (dBA)		
		BL	PA	Chg
R1	Mobile Home Park	100	94	-6
R2	Mobile Home Park	100	94	-6
R3	Mobile Home Park	93	88	-5
R4	Mobile Home Park	100	95	-5
R5	Residence	88	83	-5
R6	Residence	NA	NA	--

Note: BL=baseline. PA=Proposed Action. Chg=change. T-37 data used as baseline for T-6 comparison. NOISEMAP rank orders the SEL for the 18 noisiest flight track events affecting the analysis point. Thus, NA indicates the T-6 does not produce one of the 18 noisiest events for the point.

Table 4.3-3 compares the on-Base land area and population exposed to noise of DNL 65 dBA and greater, as well as the population potentially highly annoyed, for the Proposed Action with the baseline condition, while Table 4.3-4 presents the same comparison for the off-Base area. The data from these tables are used in the single event and averaged noise analysis sections.



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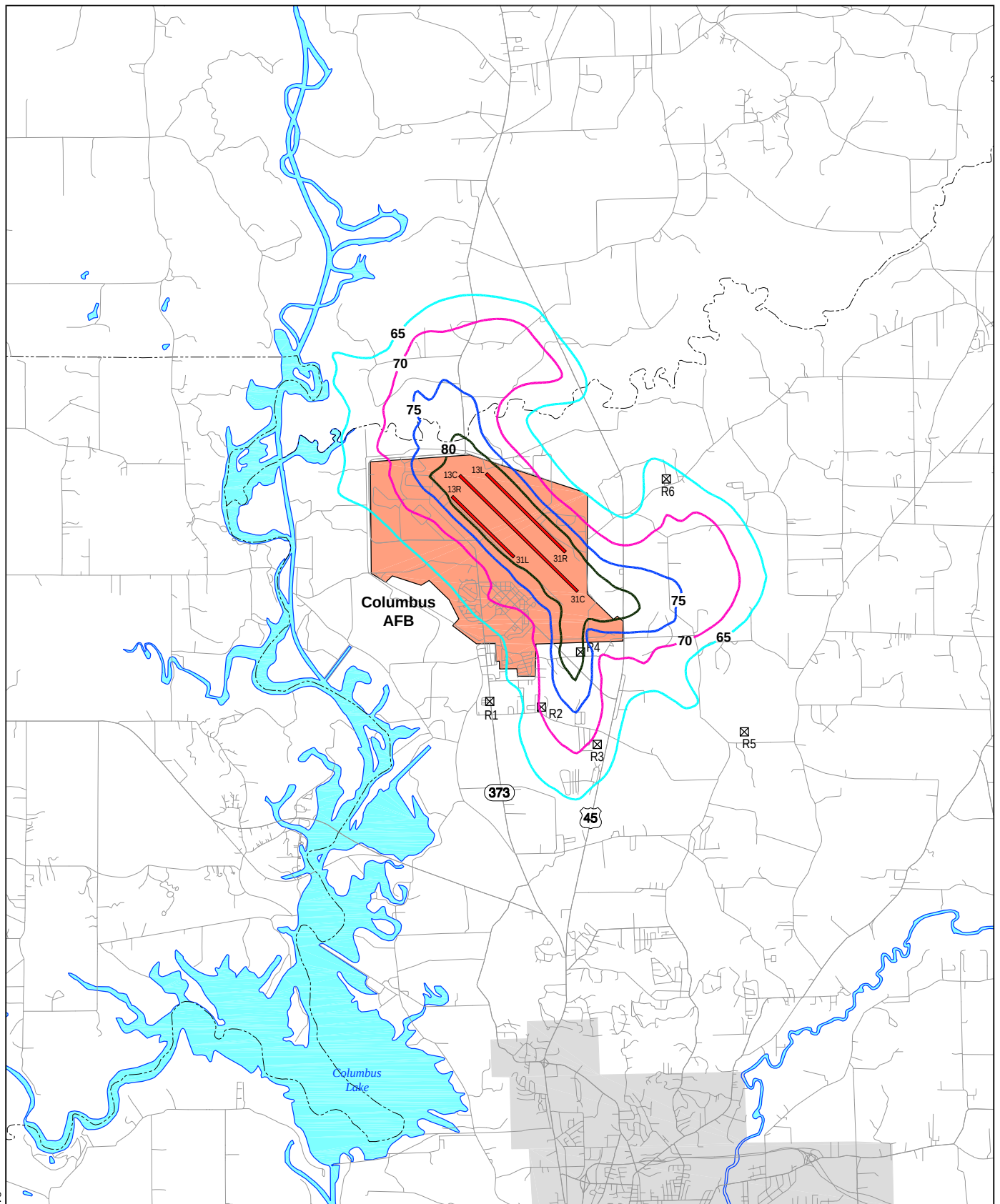
-  Flight Track
-  Runway
-  Analysis Point
-  Roadway
-  Urbanized Areas



Proposed Action Aircraft Ground Tracks, Columbus AFB

Figure 4.3-1

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Columbus AFB EA

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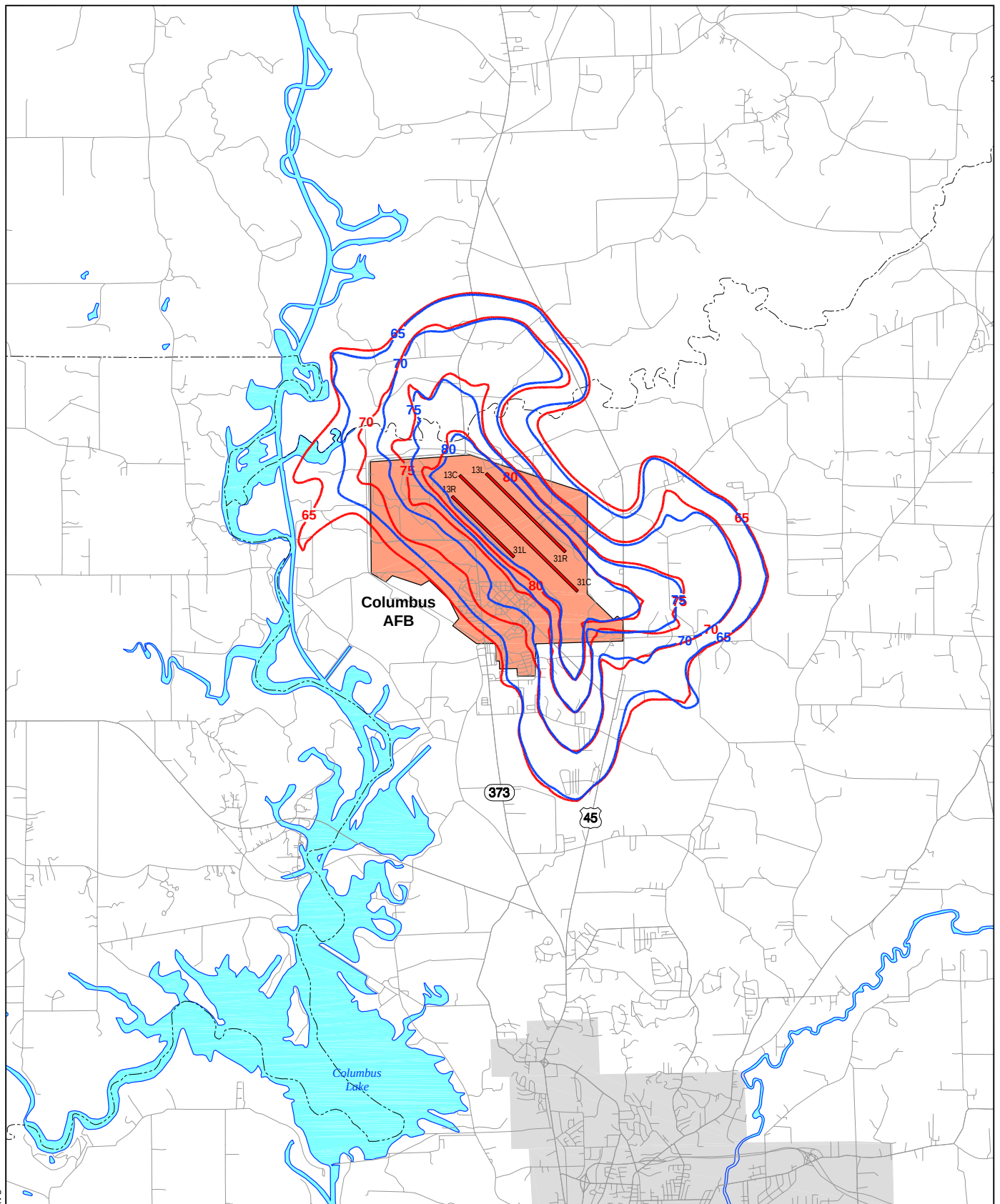
— DNL 65 dB Contour	 Analysis Point	— Roadway
— DNL 70 dB Contour	— Runway	 Urbanized Areas
— DNL 75 dB Contour		
— DNL 80 dB Contour		



Proposed Action Noise Contours, Columbus AFB

Figure 4.3-2

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Columbus AFB EA

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- Baseline Noise Contours
- Proposed Action Noise Contours

- Runway
- Roadway
- Urbanized Areas



Comparison of Baseline and Proposed Action Noise Contours, Columbus AFB

Figure 4.3-3

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Table 4.3-3 Summary of On-Base Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Proposed Action, Columbus AFB

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Acres					
Baseline Acres	762	1,180	572	1,528	4,042
Proposed Action	1,093	790	528	1,385	3,796
Change	+331	-390	-44	-143	-246
Percent Change	+43%	-33%	-8%	-9%	-6%
Population					
Baseline Population	1,545	333	0	0	1,878
Proposed Action	1,398	62	0	0	1,460
Change	-147	-271	0	0	-418
Percent Change	-10%	-81%	0%	0%	-22%
Population Highly Annoyed					
Baseline Population	340	123	0	0	463
Proposed Action	308	23	0	0	331
Change	-32	-100	0	0	-132
Percent Change	-9%	-81%	0%	0%	-29%

Note: The methodology described as a note to Table 3.3-5 were used to determine population exposure as well as the number of persons who might be highly annoyed.

Table 4.3-4 Summary of Off-Base Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Proposed Action, Columbus AFB

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Acres					
Baseline Acres	4,685	3,617	1,296	374	9,972
Proposed Action	4,227	3,347	1,116	318	9,008
Change	-458	-270	-180	-56	-964
Percent Change	-10%	-8%	-14%	-15%	-10%
Population					
Baseline Population	780	530	148	63	1,521
Proposed Action	767	514	140	56	1,477
Change	-13	-16	-8	-7	-44
Percent Change	-2%	-3%	-5%	-11%	-3%
Population Highly Annoyed					
Baseline Population	172	196	80	38	486
Proposed Action	169	190	76	34	469
Change	-3	-6	-4	-4	-17
Percent Change	-2%	-3%	-5%	-11%	-4%

Note: The methodology described as a note to Table 3.3-5 were used to determine population exposure as well as the number of persons who might be highly annoyed.

Single Event Noise Analysis, Columbus AFB

Sound Exposure Level

Each aircraft overflight near an analysis point yields a single-event noise level, presented as SEL. A total of six representative analysis points were selected under the traffic patterns and around the airfield to calculate the SEL from aircraft overflight. The noise contour and aircraft ground track figures show the locations of the analysis points. The SEL would decrease by 5 or 6 dBA at all the points at which the aircraft produces one of the 18 noisiest events when comparing the T-6 to the T-37. The noise modeling program does not list the SEL at the sixth point (*i.e.*, point 6) because neither aircraft produces one of the 18 noisiest events at the point. SEL for T-1 and T-38A operations would not change from the baseline (see Table 3.3-2).

Sleep Disturbance

Based on FICAN recommendations, outdoor SELs of 80 to 100 dBA (60 to 80 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 in the area around the Base would continue to be exposed to indoor SEL of 60 to 80 dBA during normal sleep periods (10:00 p.m. to 7:00 a.m.). There would be a combined total of 462 fewer on- and off-Base persons exposed to DNL 65 dBA and greater as a result of the Proposed Action. Assuming the number of sleep awakenings would be proportional to the decrease in exposed population and that 10 percent of the persons would be awakened, about 46 fewer persons potentially could be awakened when comparing the Proposed Action to the baseline condition. 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 (*e.g.*, window breakage, wall cracks, foundation cracks) from external pressures and induced vibrations would not occur at 127 decibels and below (see Table 3.3-3). The maximum sound pressure levels at a distance of 1,000 feet during a high power setting (*i.e.*, takeoff) for the T-6 conservatively would be 88 dBA. The maximum sound pressure at 200 feet from T-6 aircraft conservatively would be about 89 dBA. Therefore, no damage to structures in the area surrounding Columbus AFB would be anticipated because the sound pressure produced by the aircraft would not exceed the level at which structural damage could occur (*i.e.*, 127 dBA).

Construction Noise

The primary source of noise from the facilities would be the equipment involved in construction activities. Construction noise would be intermittent and short-term in duration. Typical noise levels from heavy equipment ranges from 75 to 89 dBA at 50 feet from the source (Table 4.3-5).

Table 4.3-5 Heavy Equipment Noise Levels at 50 Feet

Equipment Type	Number Used	Generated Noise Levels (dBA)
Bulldozer	1	88
Backhoe (rubber tire)	1	80
Front Loader (rubber tire)	1	80
Concrete Truck	1	75
Concrete Finisher	1	80
Crane	1	75
Asphalt Spreader	1	80
Roller	1	80
Flat Bed Truck (18 wheel)	1	75
Scraper	1	89
Trenching Machine	1	85

It is estimated the shortest distance between a noise source from construction activity and a person in or outside a building adjacent to the construction site would be about 100 feet. Conservatively, outdoor noise for a person at this distance could range from as high as 71 to 85 dB at 100 feet from the source. Interior noise levels would be reduced from the 71 to 85 dB level by approximately 20 dBA due to the NLR properties of the building's construction materials (USDOT 1992). It is anticipated that demolition and construction activities would occur between 7:30 a.m. and 4:00 p.m., 5 days per week for the duration of the project. The noise would be temporary and occur only during the hours that construction, demolition, or renovation activity would occur and would cease when the project is completed.

Elevated noise levels from construction activity can interfere with speech, causing annoyance or communication difficulties. Based on a variety of studies, DNL 75 dBA indicates there is good probability for frequent speech disruption. This level produces ratings of "barely acceptable" for intelligibility of spoken material. Persons conducting conversations within the project area could have their speech disrupted by construction, demolition, or renovation-generated noise. Speech disruption would be temporary, lasting only as long as the noise-producing event.

No hearing loss would be anticipated for persons outdoors because they would not be exposed to DNL equal to or greater than 75 dBA for 40 years of exposure at 15 hours per day, the level at which hearing loss could occur. Sleep interference is unlikely because demolition, construction, and renovation activities would occur during the daytime.

The primary source of noise at Columbus AFB during construction activities would continue to be from airfield operations and aircraft maintenance activities. Noise from these sources would tend to mask the noise generated by construction projects for the same exposure area. The perception would be that construction noise likely would not be discernible during periods of airfield operations and aircraft maintenance activity. However, there could be periods of time during which construction noise could be discerned. This condition would occur when construction activity is underway and aviation-related activity is low.

Averaged Noise Analysis, Columbus AFB

As indicated in Table 4.3-3, there would be fewer on-Base persons in the two noise zones, with the overall number of persons exposed to DNL 65 dBA and greater

decreasing by about 418 people (22 percent). The overall number of on-Base persons who would be highly annoyed by noise exposure would decrease by 132 people (29 percent). The reduction in persons exposed to noise would be attributed to the eastward movement of noise exposure from the family housing areas of the Base.

As indicated in Table 4.3-4, there would be fewer off-Base persons in each of the four noise zones, with the overall number of persons exposed to DNL 65 dBA and greater decreasing by about 44 people (3 percent). The overall number of off-Base persons who would be highly annoyed by noise exposure would decrease by 17 people (4 percent).

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 decrease in exposed population, it is anticipated there would be a corresponding decrease in the potential for speech disruption.

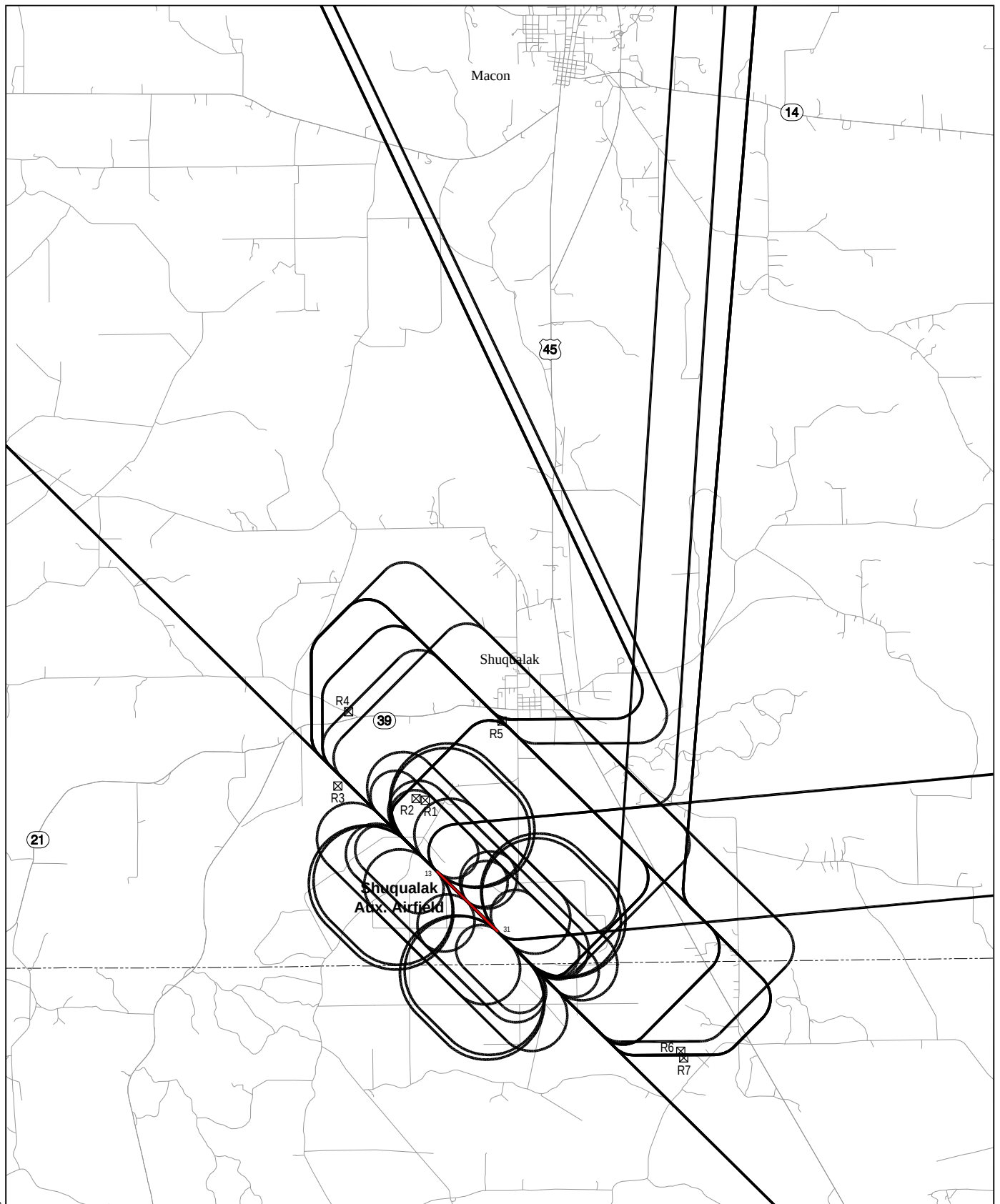
An outdoor DNL 75 dBA is considered the threshold above which the risk of noise-induced hearing loss should be evaluated. An average of 1 dBA of hearing loss could be expected for people exposed to DNL equal to or greater than 75 dBA. For the most sensitive 10 percent of the exposed population, the maximum anticipated hearing loss would be 4 dBA. These hearing loss projections must be considered conservative, as the 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.

In summary, there would be a reduction in speech disruption from aircraft overflight and there should be no noise-induced hearing loss impacts. The overall effect of the Proposed Action at Columbus AFB would be a 14 percent decrease in the number of people exposed to DNL 65 dBA and greater.

Shuqualak Auxiliary Airfield

Figure 4.3-4 depicts the aircraft ground tracks for Shuqualak Auxiliary Airfield. Figure 4.3-5 depicts the noise exposure area from T-6 operations at the airfield and Figure 4.3-6 compares the Proposed Action contours with the baseline. Table 2.3-2 lists the anticipated airfield operations. No operations would occur at nighttime (10:00 p.m. to 7:00 a.m.).



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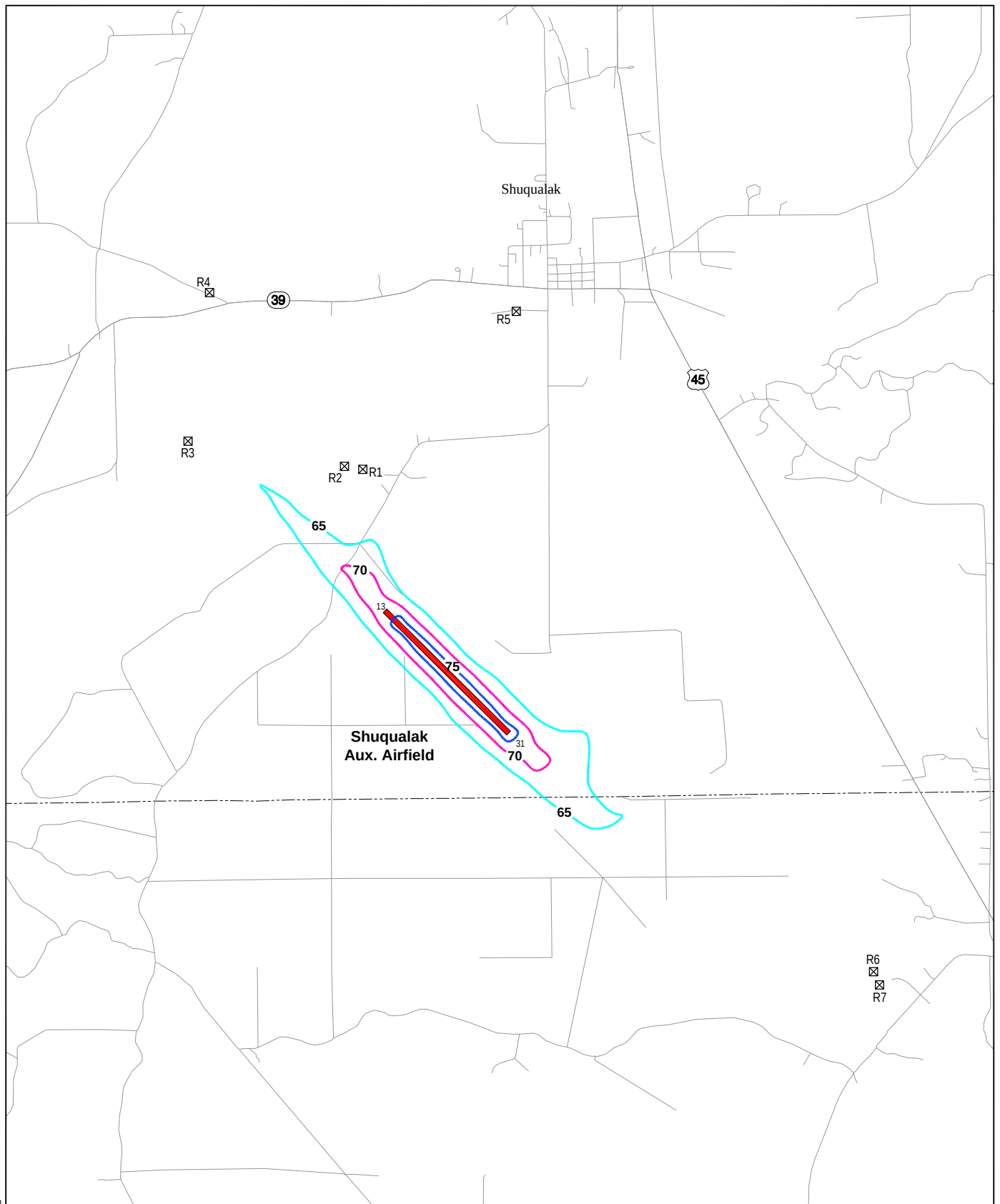
 Flight Track	 Runway
 Analysis Point	 Roadway



**Proposed Action Aircraft
Ground Tracks,
Shuqualak Auxiliary Airfield**

Figure 4.3-4

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Columbus AFB EA

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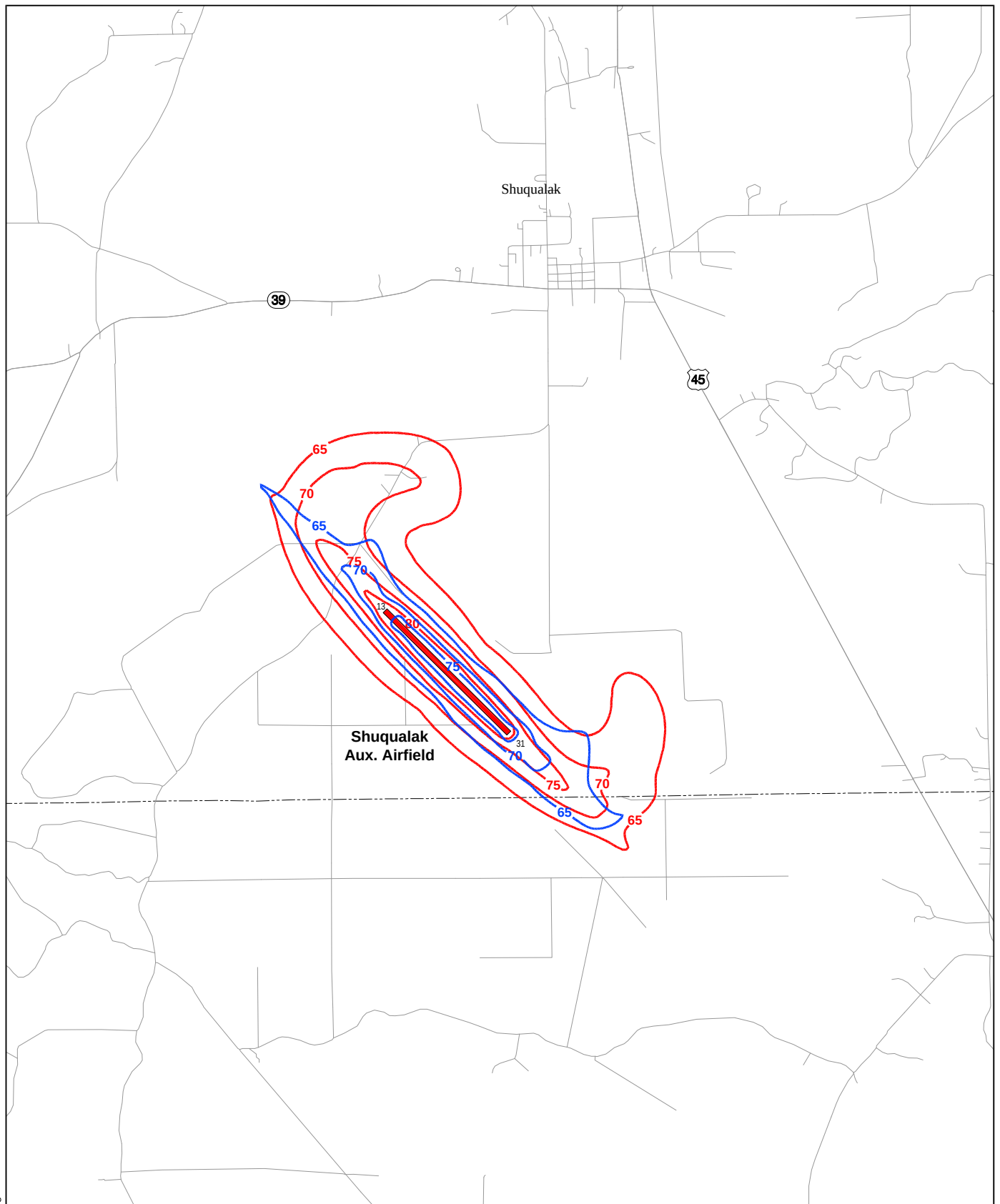
— DNL 65 dB Contour	X Analysis Point
— DNL 70 dB Contour	— Runway
— DNL 75 dB Contour	— Roadway



Proposed Action Noise Contours, Shuqualak Auxiliary Airfield

Figure 4.3-5

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Columbus AFB EA

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— Baseline Noise Contours	— Runway
— Proposed Action Noise Contours	— Roadway



**Comparison of Baseline and
Proposed Action
Noise Contours,
Shuqualak Auxiliary Airfield**
Figure 4.3-6

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While the area of exposure extends to about the same distances from the ends of the runway to the northwest and southeast, the areas to the north and east would experience a reduction in noise. Likewise, the width of the area of exposure along the axis of the runway would decrease by about 0.5 mile. Although the anticipated number of airfield operations would be the same for both the Proposed Action and the baseline, exposure would decrease because the T-6 is quieter than the T-37.

Table 4.3-6 compares the DNL changes from the baseline for the Proposed Action at Shuqualak Auxiliary Airfield at the analysis points, as well as the SEL from T-6 operations. Table 4.3-7 compares the off-installation land area and population exposed to noise of DNL 65 dBA and greater, as well as potentially highly annoyed, for the Proposed Action with the baseline condition. The data from these tables are used in the single event and averaged noise analysis sections.

Table 4.3-6 Comparison of SEL and DNL from Proposed Airfield Operations at Analysis Points with Baseline, Shuqualak Auxiliary Airfield

Analysis Point Number	Description	DNL (dBA)			SEL (dBA)		
		BL	PA	Chg	BL	PA	Chg
R1	New Chapel Church	71	58	-13	100	95	-5
R2	Near New Chapel Church	70	58	-12	102	93	-9
R3	Point Northwest of Airfield	58	60	+2	101	87	-14
R4	North-northwest of Airfield on SR 221	53	50	-3	101	89	-12
R5	Southwest of Shuqualak on Residence Street	53	45	-8	96	89	-7
R6	Wahalak Church	50	48	-2	90	86	-4
R7	Southeast of Airfield on Wahalak Road	49	47	-2	91	86	-5

Note: BL=baseline. PA=Proposed Action. Chg=change. The analysis point number and description correspond to the points reflected on the noise contour and aircraft ground track figures. The baseline SEL is for the T-37 aircraft and the Proposed Action SEL is for T-6 operations. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map.

Table 4.3-7 Summary of Off-Installation Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Proposed Action, Shuqualak Auxiliary Airfield

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Acres					
Baseline Acres	1,025	533	198	139	1,895
Proposed Action	448	162	72	0	682
Change	-577	-371	-126	-139	-1,213
Percent Change	-56%	-70%	-64%	-100%	-64%
Population					
Baseline Population	14	3	0	0	17
Proposed Action	1	0	0	0	1
Change	-13	-3	0	0	-16

Table 4.3-7 Summary of Off-Installation Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Proposed Action, Shuqualak Auxiliary Airfield (...continued)

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Percent Change	-93%	-100%	0%	0%	-94%
Population Highly Annoyed					
Baseline Population	3	1	0	0	4
Proposed Action	0	0	0	0	0
Change	-3	-1	0	0	-4
Percent Change	-100%	-100%	0%	0%	-100%

Note: The methodology described as a note to Table 3.3-5 was used to determine population exposure as well as the number of persons who might be highly annoyed.

Single Event Noise Analysis, Shuqualak Auxiliary Airfield

Sound Exposure Level

A total of 7 representative analysis points were selected under the traffic patterns and around the airfield to calculate the SEL due to aircraft overflight. The noise contour and aircraft ground track figures show the locations of the analysis points. As indicated in Table 4.3-6, the SEL from T-6 aircraft at each of the analysis points would be less than that for T-37 aircraft under the baseline condition, decreasing between 4 and 14 dBA.

Sleep Disturbance

The sleep disturbance introductory and background information for Columbus AFB in Section 4.3.1 applies to Shuqualak Auxiliary Airfield. No operations would be conducted during normal sleep periods (10:00 p.m. to 7:00 a.m.). 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 between 10:00 p.m. to 7:00 a.m. Individuals in residences in the area around the airfield would continue to be exposed to indoor SEL of 60 to 8 dBA. There would be 16 fewer persons exposed to DN 6 dBA and greater as a result of the Proposed Action. Assuming the number of sleep awakenings would be proportional to the decrease in exposed population and that 1 percent of the persons would be awakened, about 2 fewer persons potentially could be awakened when comparing the Proposed Action to the baseline condition.

Effects of Noise on Structures

The maximum sound pressure levels at a distance of 1,000 feet during a high power setting (*i.e.*, takeoff) for the T-6 conservatively would be 88 dBA. The maximum sound pressure at 200 feet from the T-6 aircraft conservatively would be about 89 dBA. Therefore, no damage to structures in the area surrounding Shuqualak Auxiliary Airfield would be anticipated because the sound pressure produced by the aircraft would not exceed the level at which structural damage could occur (*i.e.*, 127 dBA).

Averaged Noise Analysis, Shuqualak Auxiliary Airfield

As indicated in Table 4.3-7, the number of persons exposed to DNL 65 dBA and greater would decrease by 16 persons, or 94 percent. Likewise, the overall number of persons who would be highly annoyed by noise exposure would decrease by 100 percent.

The discussions and analyses for the Proposed Action at Columbus AFB for speech disruption, hearing loss, and nonauditory health effects apply to the Proposed Action at Shuqualak Auxiliary Airfield. The overall effect of the Proposed Action at the airfield would be a decrease of 94 percent in the number of persons exposed to DNL 65 dBA and greater.

Golden Triangle Regional Airport

Figure 4.3-7 depicts the aircraft ground tracks for GTRA and Figure 4.3-8 depicts the noise exposure area from the addition of Columbus AFB T-6 operations at GTRA. Figure 4.3-9 compares the Proposed Action contours with the baseline. Table 2.3-3 lists the anticipated airfield operations. No operations would be conducted by T-6 aircraft during nighttime (10:00 p.m. to 7:00 a.m.).

Overall, the noise exposure area would retain the same shape. However, the area of exposure to the north of the runway end would increase by about 0.75 mile to 2.25 miles, while the area to the south would increase by about 1.0 mile to 2.3 miles. Likewise, the width of the exposure area along the runway axis would increase by about 0.25 mile. The additional exposure would be attributed to the addition of T-6 aircraft operations at the airfield.

Table 4.3-8 compares the DNL changes from the baseline for the Proposed Action at GTRA at the analysis points, as well as the SEL from T-6 operations. Table 4.3-9 compares the off-installation land area and population exposed to noise of DNL 65 dBA and greater, as well as potentially highly annoyed, for the Proposed Action with the baseline condition. The data from these tables are used in the single event and averaged noise analysis sections.

Table 4.3-8 Comparison of SEL and DNL from Proposed Airfield Operations at Analysis Points with Baseline, Golden Triangle Regional Airport

Analysis Point Number	Description	DNL (dBA)			SEL (dBA)	
		BL	PA	Chg	BL	T-6
1	Below North Extended Runway Centerline	66	71	+5	109	96
2	Below West Closed Pattern	18	52	+34	60	92
3	Below South Extended Runway Centerline	66	70	+4	109	96
4	Below East Closed Pattern	18	52	+34	60	92

Note: BL=baseline. PA=Proposed Action. Chg=change. There would be no change to the SEL (see Table 3.3-9) for the other aircraft since there are no changes to the flight tracks or profiles these aircraft would fly. The analysis point number and description correspond to the points reflected on the noise contour and aircraft ground track figures. The baseline SEL represents the greatest SEL for the baseline condition (see Table 3.3-9), while the T-6 column reflect the maximum estimated SEL for the aircraft at the analysis point. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map.

Table 4.3-9 Summary of Off-Installation Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Proposed Action, Golden Triangle Regional Airport

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Acres					
Baseline Acres	553	137	91	40	821
Proposed Action	1,041	271	102	71	1,485
Change	+488	+134	+11	+31	+664
Percent Change	+88%	+98%	+12%	+76%	+81%
Population					
Baseline Population	1	0	0	0	1
Proposed Action	8	1	0	0	9
Change	+7	+1	0	0	+8
Percent Change	+700%	--	0%	0%	+800%
Population Highly Annoyed					
Baseline Population	0	0	0	0	0
Proposed Action	2	0	0	0	2
Change	+2	0	0	0	+2
Percent Change	--	0%	0%	0%	--

Note: The methodology described as a note to Table 3.3-5 was used to determine population exposure as well as the number of persons who might be highly annoyed.

Single Event Noise Analysis, Golden Triangle Regional Airport

Sound Exposure Level

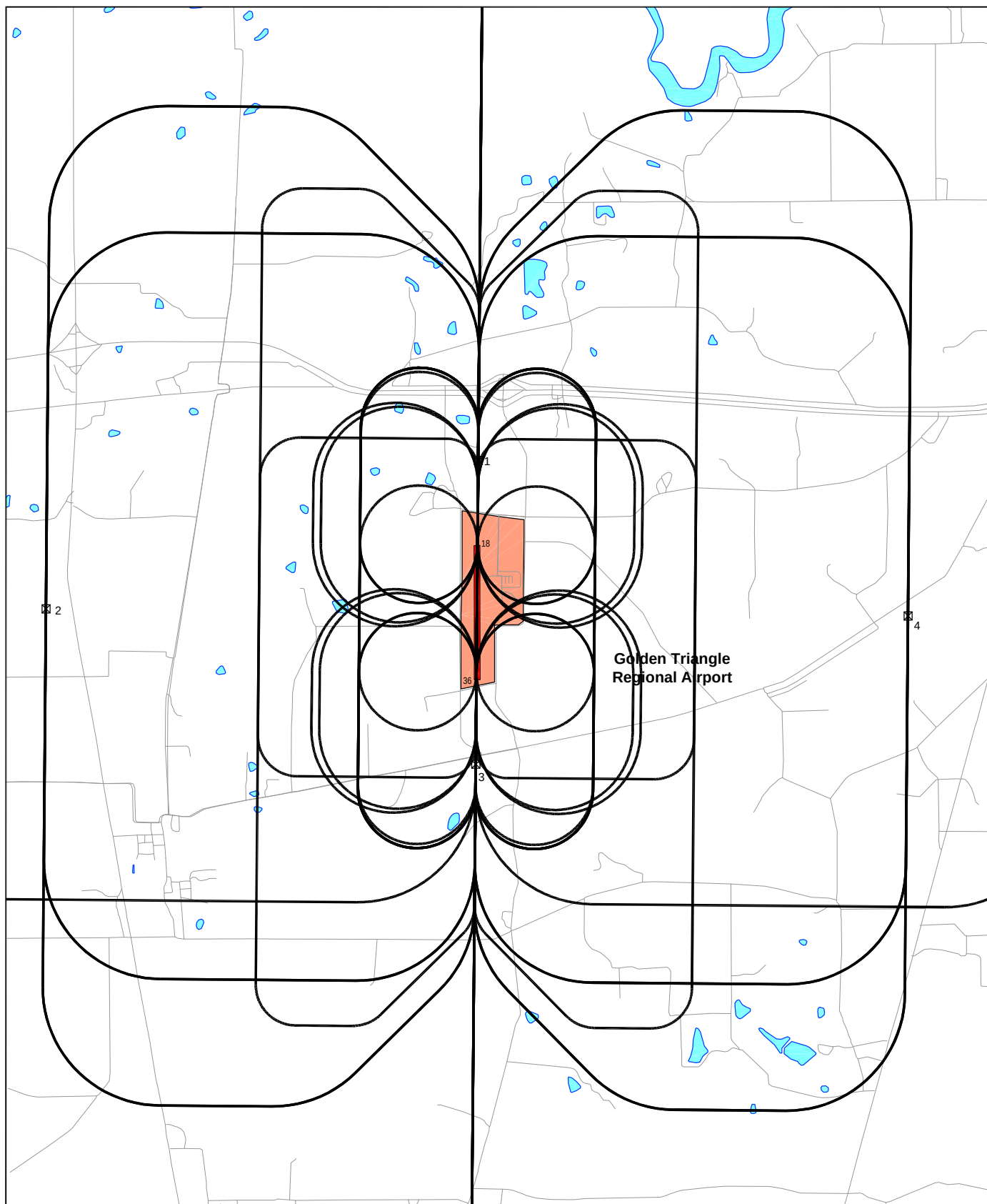
The civil aircraft types and operations for the baseline would continue under the Proposed Action. Since SEL is related to single overflight, there would be no changes for the SEL for the baseline aircraft that continue to operate under the Proposed Action (see Table 3.3-9). Table 4.3-8 presents the SEL for T-6 operations under the Proposed Action. The SEL from T-6 operations at the points north and south of the runway, respectively, would be about 13 dBA less than that from Learjet operations under the baseline (see Tables 3.3-9 and 4.3-8). The T-6 SEL at the points east and west of the airfield, respectively, would be approximately 32 dBA greater than that from the Learjet.

Sleep Disturbance

The sleep disturbance introductory and background information for Columbus AFB in Section 4.3.1 applies to GTRA. No T-6 operations would be conducted during normal sleep periods (10:00 p.m. to 7:00 a.m.). Thus, no persons would be affected by T-6 aircraft noise during this period. However, civil operations would occur during the nighttime (10:00 p.m. to 7:00 a.m.) and those individuals who sleep during this period would continue to be affected as under the baseline. 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

The maximum sound pressure levels at a distance of 1,000 feet during a high power setting (i.e., takeoff) for the T-6 aircraft conservatively would be 88 dBA. The maximum sound pressure at 200 feet from T-6 aircraft conservatively would be about 89 dBA.



Golden Triangle Regional Airport

LEGEND

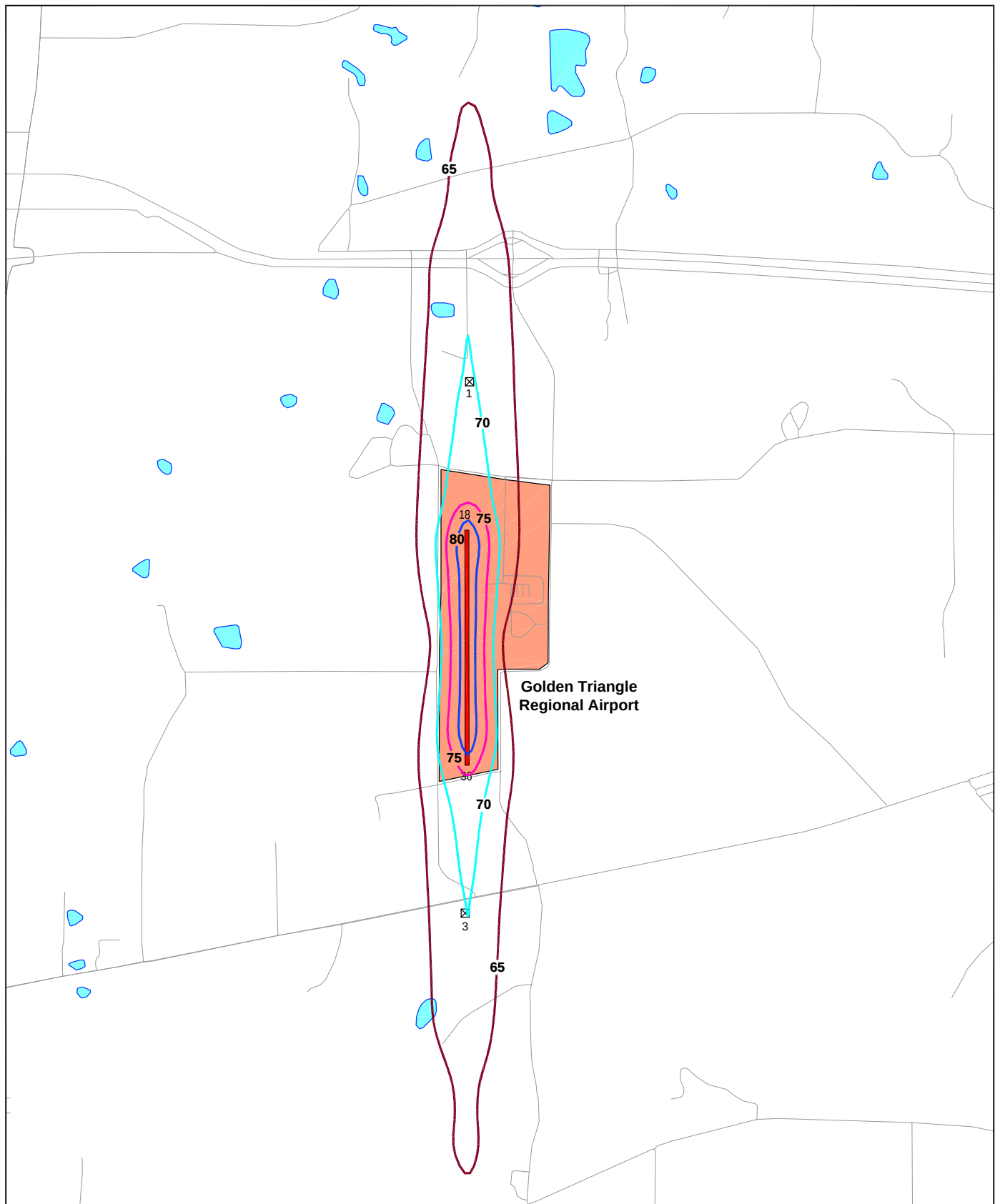
 Flight Track	 Runway	 Golden Triangle Regional Airport
 Analysis Point	 Roadway	



Proposed Action Aircraft Ground Tracks, Golden Triangle Regional Airport

Figure 4.3-7

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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

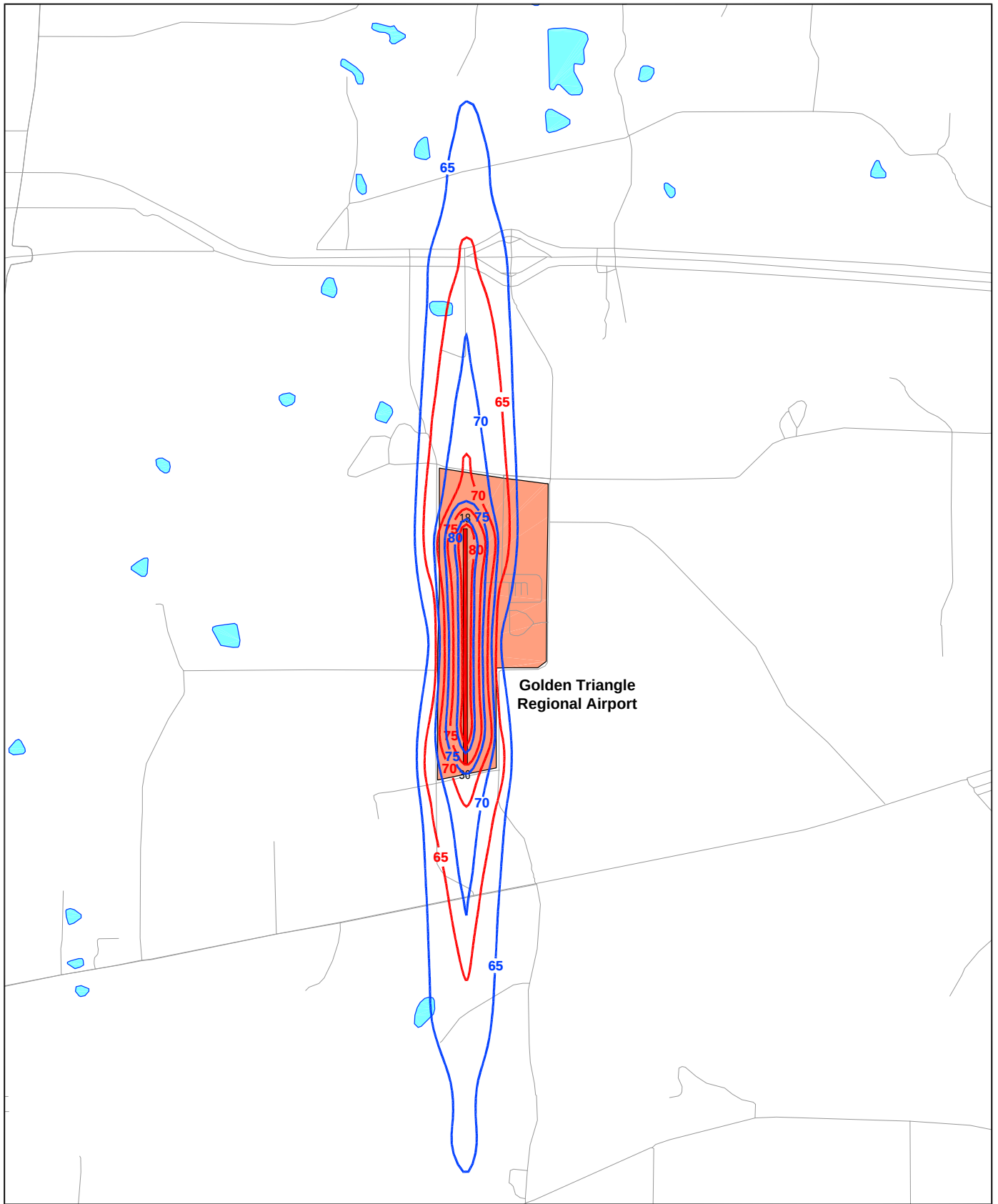
Golden Triangle Regional Airport

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Feet



**Proposed Action Noise
Contours,
Golden Triangle Regional
Airport**
Figure 4.3-8

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Golden Triangle Regional Airport

LEGEND

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



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

Figure 4.3-9

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Therefore, no damage to structures in the area surrounding GTRA would be anticipated because the sound pressure produced by the aircraft would not exceed the level at which structural damage could occur (*i.e.*, 127 dBA).

Averaged Noise Analysis, Golden Triangle Regional Airport

As indicated in Table 4.3-9, the number of persons exposed to DNL 65 dBA and greater would increase by 8 persons. The number of persons who would be highly annoyed by noise exposure would increase by 2 persons.

The discussions and analyses for the Proposed Action at Columbus AFB for speech disruption, hearing loss, and nonauditory health effects apply to the Proposed Action at GTRA. The overall effect of the Proposed Action at the GTRA would be an increase of 8 persons exposed to DNL 65 dBA and greater.

Military Training Routes

Table 2.3-4 lists the annual and monthly operations anticipated for the two MTRs that would be flown by T-6 aircraft under the Proposed Action. Table 4.3-10 compares the L_{dnmr} for the aircraft operations that would occur on the two routes with the baseline condition.

Table 4.3-10 Comparison of Aircraft Noise Levels below the Military Training Routes, Proposed Action

Route	L_{dnmr} (dBA)			Route	L_{dnmr} (dBA)		
	Baseline	PA	Chg.		Baseline	PA	Chg.
VR-1014	43	42	-1	SR-137	45	38	-7

Note: L_{dnmr} is represented for 500 feet AGL.

As indicated in the table, the L_{dnmr} decrease on both MTRs and would not exceed 55 dBA, the level above which the general population could be at risk from the effects of noise (USEPA 1974) for either route. The L_{dnmr} would be a maximum of 5 dBA greater than the values stated in Table 4.3-10 at the points at which the MTRs intersect or when there are common route segments. Thus, the maximum L_{dnmr} for any route could be about 47 dBA. Overall, the L_{dnmr} would not exceed the United States Department of Housing and Urban Development (HUD), FAA, and Air Force noise level at which residential and other noise-sensitive land uses would be unacceptable on any route (*i.e.*, L_{dnmr} 65 dBA).

The noise anticipated from MTR operations would not exceed the level used for hearing loss and speech interference analysis (*i.e.*, L_{dnmr} 75 dBA), and the discussion for these two items in the Proposed Action (Section 4.3.1) apply to MTR operations. Likewise, the sleep disruption and non-auditory health effects discussions from the section apply.

Table 4.3-11 lists the SEL values for the T-6 for points directly below and lateral to an aircraft ground track. Both the L_{dnmr} and SEL decrease as the distance between the receptor and the route centerline increases. The T-6 is about 7 dBA quieter than the T-37 for the distances listed in Table 4.3-11. There would be no change from the baseline for the T-1 or T-38A (see Table 3.3-12 for these two aircraft).

Table 4.3-11 Aircraft Noise Levels (SEL) as a Function of Distance from Aircraft Ground Track Centerline, Proposed Action

Aircraft	200 Feet	315 Feet	500 feet	1,000 Feet	2,000 Feet	3,150 Feet
T-6	94	90	86	81	75	71

Note: Table 3.3-12 lists the data for the T-1 and T-38A. Data reflect noise for cruise power.

The conservative $L_{\max}$ for the T-6 aircraft at cruise power and 500 feet AGL, the minimum altitude flown on an MTR, would be about 81 dBA. The $L_{\max}$ is well below the threshold at which structural damage would occur (*i.e.*, 127 dBA). Thus, no structural damage would be expected from T-6 operations on an MTR.

Studies of aircraft noise and sonic booms, both in the US and overseas, have addressed acute effects, including effects of startle responses (sheep, horses, cattle, fowl), and effects on reproduction and growth (sheep, cattle, fowl, swine); parental behaviors (fowl, mink); milk letdown (dairy cattle, dairy goats, swine); and egg production. High noise may trigger a startle response which raises the heart rate, but heart rate returns to normal in a very short time. There are good dose-response relationships describing the startle tendency to various levels of noise. However, studies have determined that there would be no long-term behavioral or breeding effects.

4.3.2 No Action Alternative

There would be no change in the number of assigned T-1, T-37, or T-38 aircraft. The primary source of noise at Columbus AFB, Shuqualak Auxiliary Airfield, and along the MTRs would be from aircraft operations which would be expected to continue at the current level of activity. The number of persons exposed to noise would remain at the current levels.

4.3.3 Mitigation

No significant noise impacts were identified. Therefore, no mitigation would be required.

4.3.4 Cumulative Impacts

Cumulative impacts would not occur at Shuqualak Auxiliary Airfield since neither the T-1 nor T-38 aircraft would conduct operations at the airfield. Thus, there is no cumulative impact discussion Shuqualak Auxiliary Airfield.

Columbus AFB

Refinements to the numbers of T-1 and T-38 airfield operations would occur under the other action. Additionally, T-38As would be modified as T-38C aircraft. Figure 4.3-10 shows the aircraft ground tracks and Figure 4.3-11 depicts the noise exposure area from the aircraft operations condition at the Base under the cumulative condition. Table 2.5-2 lists the anticipated airfield operations. Approximately 5 percent of the operations would occur at nighttime (10:00 p.m. to 7:00 a.m.). Figure 4.3-12 compares the cumulative condition and baseline noise contours.

Noise exposure to the north, northeast, east, and southeast remains nearly the same as the baseline condition. The area of exposure to the southwest, west, and northwest decreases because the aircraft overflying these areas would be T-6s, which are quieter than the T-37 aircraft that would be replaced. Additionally, exposure to the south

decreases because T-38 aircraft maintenance engine runups would occur in facilities that suppress the noise.

Table 4.3-12 compares the baseline with the cumulative condition DNL and Table 4.3-13 presents the SEL for the T-6, T-1, and T-38C aircraft at the analysis points. The T-6 is about 5 dBA quieter than the T-37 at 1,000 feet from the aircraft during takeoff, while the T-38C is approximately 1 dBA quieter than the T-38A at this distance during an afterburner takeoff (see Table 3.3-1 for T-37 and T-38A data). There would be no change to T-1 data from the baseline condition.

Table 4.3-12 DNL Comparison from Cumulative Condition Airfield Operations at Analysis Points with Baseline, Columbus AFB

Analysis Point Number	Description	DNL (dBA)		
		BL	CC	Chg
1	Mobile Home Park	60	58	-2
2	Mobile Home Park	70	58	-12
3	Mobile Home Park	69	57	-12
4	Mobile Home Park	81	71	-10
5	Residence	58	57	-1
6	Residence	68	71	+3

Note: BL=baseline. CC=cumulative condition. Chg=change. The analysis point number and description correspond to the point as reflected on the noise contour and aircraft ground track figures. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map.

Table 4.3-13 Sound Exposure Level Comparison from Cumulative Condition Airfield Operations at Analysis Points with Baseline, Columbus AFB

Analysis Point Number	Description	SEL (dBA)								
		T-6			T-1			T-38C		
		BL	CC	Chg	BL	CC	Chg	BL	CC	Chg
1	Mobile Home Park	100	94	-6	74	NA	--	85	81	-4
2	Mobile Home Park	100	94	-6	86	NA	--	93	87	-6
3	Mobile Home Park	93	88	-5	81	NA	--	89	85	-4
4	Mobile Home Park	100	95	-5	95	NA	--	103	99	-4
5	Residence	88	83	-5	92	90	-2	90	89	-1
6	Residence	NA	NA	--	100	92	-8	102	102	0

Note: BL=baseline. CC=cumulative condition. Chg=change. T-37 data used as baseline for T-6 comparison. T-38A data used for baseline for T-38C comparison. NOISEMAP rank orders the SEL for the 18 noisiest flight track events affecting the analysis point. Thus, NA indicates that the particular aircraft type does not produce one of the 18 noisiest events for the point.

Table 4.3-14 compares the on-Base land area and population exposed to noise of DNL 65 dBA and greater, as well as the population potentially highly annoyed, for the cumulative condition with the baseline condition, while Table 4.3-15 presents the same comparison for the off-Base area. The data from these tables are used in the single event and averaged noise analysis sections.

Table 4.3-14 Summary of On-Base Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Cumulative Condition, Columbus AFB

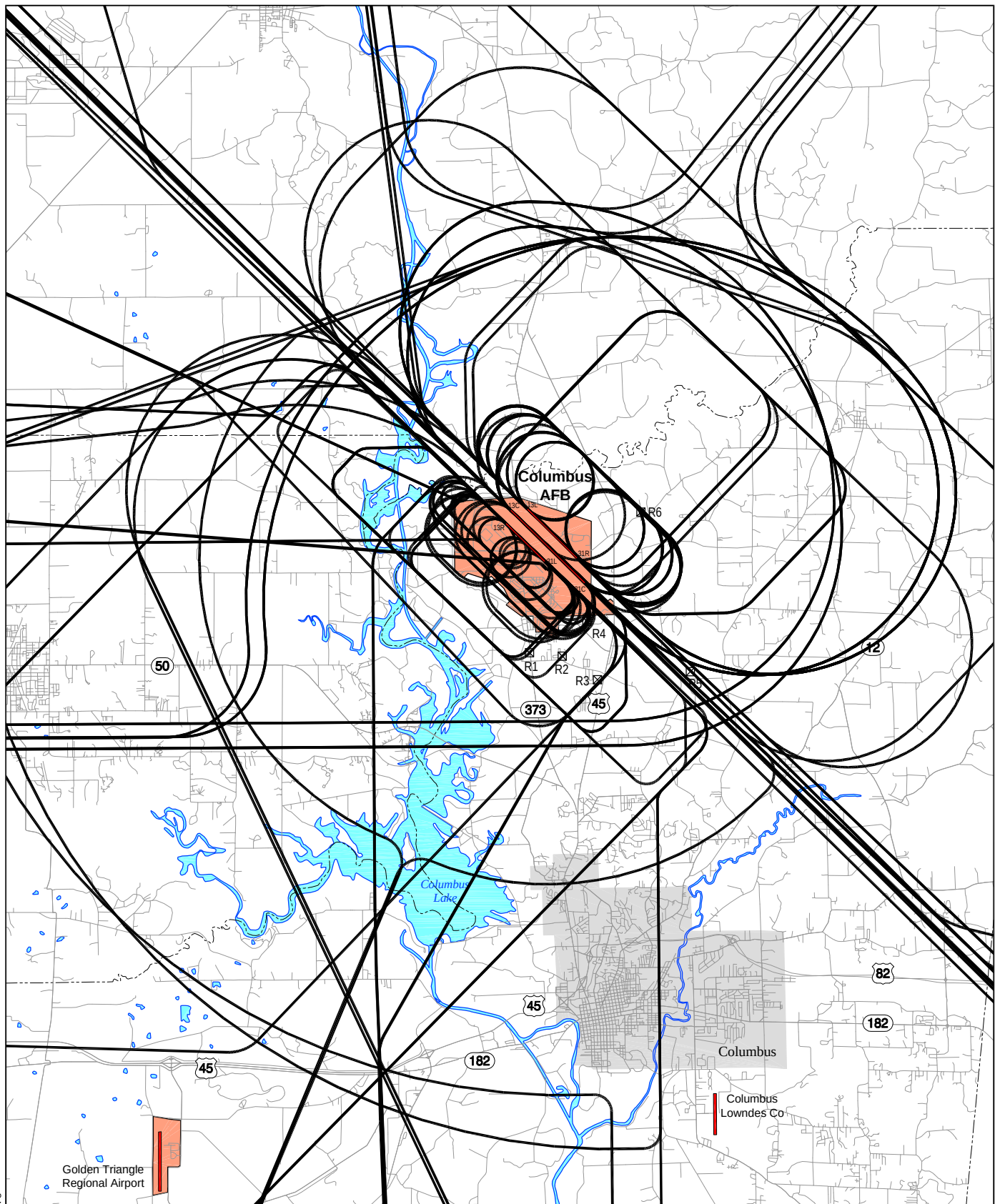
	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Acres					
Baseline Acres	762	1,180	572	1,528	4,042
Cumulative Condition	1,067	745	542	1,366	3,720
Change	+305	-435	-30	-162	-322
Percent Change	+40%	-37%	-5%	-11%	-8%
Population					
Baseline Population	1,545	333	0	0	1,878
Cumulative Condition	917	48	0	0	965
Change	-628	-285	0	0	-913
Percent Change	-41%	-86%	0%	0%	-49%
Population Highly Annoyed					
Baseline Population	340	123	0	0	463
Cumulative Condition	202	18	0	0	220
Change	-138	-105	0	0	-243
Percent Change	-41%	-86%	0%	0%	-53%

Note: The methodology described as a note to Table 3.3-5 was used to determine population exposure as well as the number of persons who might be highly annoyed.

Table 4.3-15 Summary of Off-Base Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Cumulative Condition, Columbus AFB

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Acres					
Baseline Acres	4,685	3,617	1,296	374	9,972
Cumulative Condition	3,374	3,034	1,215	256	7,879
Change	-1,311	-583	-81	-118	-2,093
Percent Change	-28%	-16%	-6%	-32%	-21%
Population					
Baseline Population	780	530	148	63	1,521
Cumulative Condition	230	174	58	25	487
Change	-550	-356	-90	-38	-1,034
Percent Change	-71%	-67%	-61%	-60%	-68%
Population Highly Annoyed					
Baseline Population	172	196	80	38	486
Cumulative Condition	51	64	31	15	161
Change	-121	-132	-49	-23	-325
Percent Change	-70%	-67%	-61%	-61%	-67%

Note: The methodology described as a note to Table 3.3-5 were used to determine population exposure as well as the number of persons who might be highly annoyed.



Columbus AFB EA LEGEND

- Flight Track
- Runway
- Analysis Point
- Roadway
- Urbanized Areas

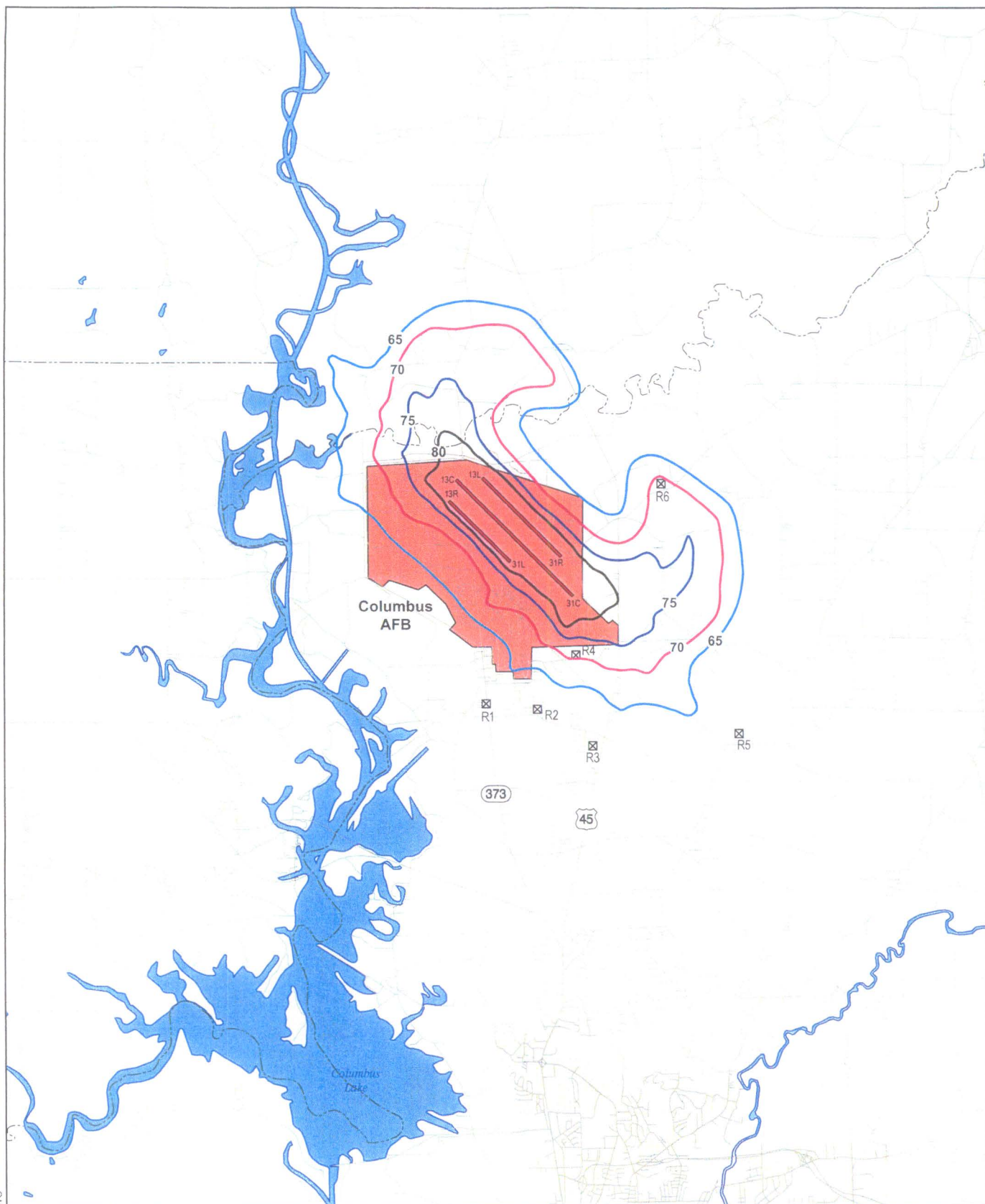
3 0 3
Miles



Cumulative Condition Aircraft Ground Tracks, Columbus AFB

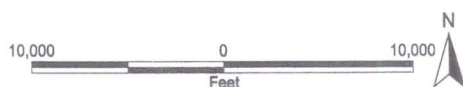
Figure 4.3-10

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Columbus AFB EA LEGEND

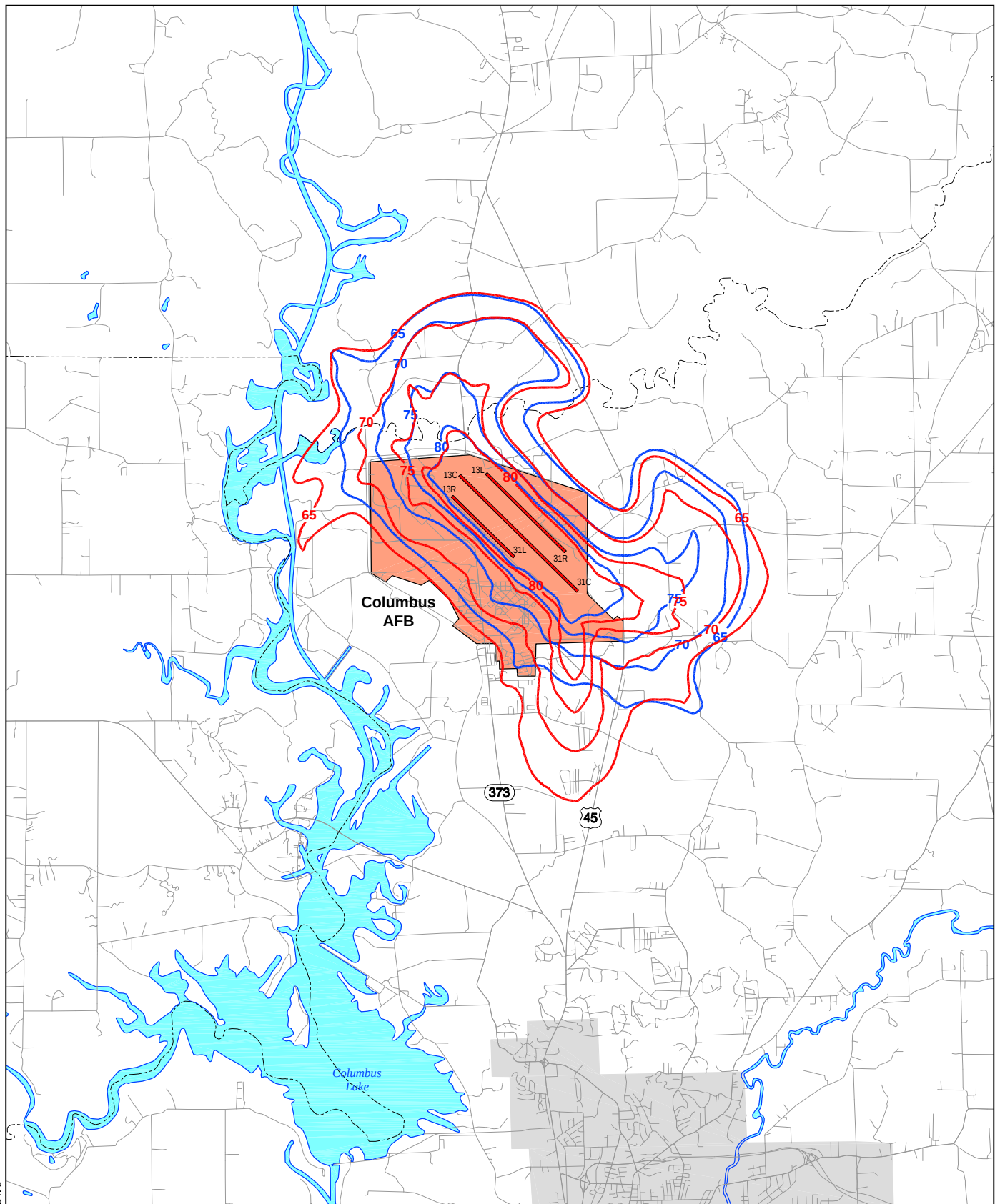
— DNL 65 dB Contour	X Analysis Point	— Roadway
— DNL 70 dB Contour	 Runway	 Urbanized Areas
— DNL 75 dB Contour		
— DNL 80 dB Contour		



Cumulative Condition Noise Contours, Columbus AFB

Figure 4.3-11

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Columbus AFB EA

LEGEND

- Baseline Noise Contours
- Cumulative Condition Noise Contours
- Runway
- Roadway
- Urbanized Areas



Comparison of Baseline and Cumulative Condition Noise Contours, Columbus AFB

Figure 4.3-12

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Single Event Noise Analysis, Columbus AFB

Sound Exposure Level

Each aircraft overflight near an analysis point yields a single-event noise level, presented as SEL. A total of six representative analysis points were selected under the traffic patterns and around the airfield to calculate the SEL from aircraft overflight. The noise contour and aircraft ground track figures show the locations of the analysis points. SEL for T-1 and T-38 operations would either remain the same or decrease at all points. The analysis for the Proposed Action applies to the T-6 for the cumulative condition.

Sleep Disturbance

The criteria used for the Proposed Action in Section 4.3.1 apply to the cumulative condition. There would be a combined total of 1,947 fewer on-and off-Base persons exposed to DNL 65 dBA and greater as a result of the cumulative condition. Assuming the number of sleep awakenings would be proportional to the decrease in exposed population and that 10 percent of the persons would be awakened, about 195 fewer persons potentially could be awakened when comparing the cumulative condition to the baseline condition. 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 (*e.g.*, window breakage, wall cracks, foundation cracks) from external pressures and induced vibrations would not occur at 127 decibels and below (see Table 3.3-3). The highest maximum sound pressure level produced by any of the aircraft assigned to Columbus AFB at a distance of 1,000 feet during a high power setting (*i.e.*, afterburner takeoff) conservatively would be 105 dBA generated by the T-38C aircraft, while the T-1 would produce 99 dBA at this distance for takeoff power. The maximum sound pressure levels at a distance of 1,000 feet during a high power setting (*i.e.*, takeoff) for the T-6 conservatively would be 88 dBA. The maximum sound pressure at 200 feet from T-38C, T-6, and T-1 aircraft conservatively would be about 118, 89, and 105 dBA, respectively. Therefore, no damage to structures in the area surrounding Columbus AFB would be anticipated because the sound pressure produced by the aircraft would not exceed the level at which structural damage could occur (*i.e.*, 127 dBA).

Construction Noise

Other facilities would be constructed at Columbus AFB under the cumulative condition. As depicted in Figures 2.3-1 and 2.5-1, the distance between Taxiway D repair project and the COMBS facility could be as close as 100 feet. For analysis purposes, it is assumed the noisiest piece of construction equipment (89 dB scraper which produces 85 dB at 100 feet from the noise source) is being operated simultaneously at each site and the distance to a receptor is 100 feet from each construction site. If the intensity of a sound is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, the combined noise from equipment operation at the receptor would be 88 dB. As with the Proposed Action, construction noise would be temporary and occur only during the hours that construction, demolition, or renovation activity would occur and would cease when the project is completed.

The primary source of noise at Columbus AFB during construction activities would continue to be from airfield operations and aircraft maintenance activities. Noise from these sources would tend to mask the noise generated by construction projects for the same exposure area. The perception would be that construction noise likely would not be discernible during periods of airfield operations and aircraft maintenance activity. However, there could be periods of time during which construction noise could be discerned. This condition would occur when construction activity is underway and aviation-related activity is low.

Averaged Noise Analysis, Columbus AFB

As indicated in Table 4.3-14, there would be fewer on-Base persons in the two noise zones, with the overall number of persons exposed to DNL 65 dBA and greater decreasing by about 913 people (49 percent). The overall number of on-Base persons who would be highly annoyed by noise exposure would decrease by 243 people (53 percent). The reduction in persons exposed to noise would be attributed to the eastward movement of noise exposure from the family housing areas.

As indicated in Table 4.3-15, there would be fewer off-Base persons in each of the four noise zones, with the overall number of persons exposed to DNL 65 dBA and greater decreasing by about 1,034 people (68 percent). The overall number of off-Base persons who would be highly annoyed by noise exposure would decrease by 325 people (67 percent). The reduction in persons exposed to DNL 65 dBA and greater would occur south of the airfield.

The background information for speech disruption and noise-induced hearing loss discussions for the Proposed Action apply to the cumulative condition. Overall, there would be fewer persons exposed to noise. Thus the potential for speech disruption would decrease. Noise-induced hearing loss would not be expected because it is doubtful any individual would be outdoors within the DNL 75 dBA and greater noise exposure area for the length of time that could produce hearing loss.

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

In summary, there would be a reduction in speech disruption from aircraft overflight and there should be no noise-induced hearing loss impacts. The overall effect of the cumulative condition at Columbus AFB would be a 57 percent decrease in the number of people exposed to DNL 65 dBA and greater.

Golden Triangle Regional Airport

Under the cumulative condition, T-1 aircraft from Columbus AFB would accomplish airfield operations at GTRA along with the Base's T-6 aircraft. Except for the ELP tracks, T-1 aircraft would use many of the aircraft ground tracks used by T-6s. Therefore, the aircraft ground tracks depicted in Figure 4.3-7 apply to the cumulative condition. Figure 4.3-13 depicts the noise exposure area from the addition of Columbus AFB T-6 and T-1 operations at GTRA. Figure 4.3-14 compares the cumulative condition contours with the baseline. Table 2.5-3 lists the anticipated airfield operations. No operations would be conducted by T-6 or T-1 aircraft during nighttime (10:00 p.m. to 7:00 a.m.).

Overall, the noise exposure area would retain the same shape as the baseline. However, the area of exposure to the north of the runway end would increase by about 0.75 mile to 2.25 miles, while the area to the south would increase by about 1.0 mile to 2.3 miles. Likewise, the width of the exposure area along the runway axis would increase by about 0.25 mile. The additional exposure would be attributed to the addition of T-6 and T-1 aircraft operations at the airfield.

Table 4.3-16 compares the DNL changes from the baseline for the cumulative condition at GTRA at the analysis points, as well as the SEL from T-6 and T-1 operations. Table 4.3-17 compares the off-airport land area and population exposed to noise of DNL 65 dBA and greater, as well as potentially highly annoyed, for the cumulative condition with the baseline condition. The data from these tables are used in the single event and averaged noise analysis sections.

Table 4.3-16 Comparison of SEL and DNL from Proposed Cumulative Condition Airfield Operations at Analysis Points with Baseline, Golden Triangle Regional Airport

Analysis Point Number	Description	DNL (dBA)			SEL (dBA)		
		BL	CC	Chg	BL	T-6	T-1
1	Below North Extended Runway Centerline	66	75	+9	109	96	107
2	Below West Closed Pattern	18	52	+34	60	92	96
3	Below South Extended Runway Centerline	66	73	+7	109	96	106
4	Below East Closed Pattern	18	52	+34	60	92	96

Note: BL=baseline. CC=cumulative condition. Chg=change. There would be no change to the SEL (see Table 3.3-9) for the other aircraft since there are no changes to the flight tracks or profiles these aircraft would fly. The analysis point number and description correspond to the points reflected on the noise contour and aircraft ground track figures. The baseline SEL represents the greatest SEL for the baseline condition (see Table 3.3-9), while the T-6 and T-1 columns reflect the maximum estimated SEL for the respective aircraft at the analysis point. There may be minor differences when comparing the DNL for a point from the table to the DNL for the point as depicted on the noise contour figure. This difference is a result of small misalignments during the process of printing the noise contours on top of the background map.

Table 4.3-17 Summary of Off-Installation Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Cumulative Condition, Golden Triangle Regional Airport

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Acres					
Baseline Acres	553	137	91	40	821
Cumulative Condition	1,128	443	176	99	1,846
Change	+575	+306	+85	+59	+1,025
Percent Change	+104%	+223%	+93%	+148%	+125%
Population					
Baseline Population	1	0	0	0	1
Cumulative Condition	8	1	0	0	9
Change	+7	+1	0	0	+8
Percent Change	+700%	--	0%	0%	+800%

Table 4.3-17 Summary of Off-Installation Land Area and Population Exposed to, and Population Potentially Highly Annoyed by DNL 65 dBA and Greater, Cumulative Condition, Golden Triangle Regional Airport
(*cont'd*)

	DNL Interval (dBA)				
Category	65-70	70-75	75-80	80+	Total
Population Highly Annoyed					
Baseline Population	0	0	0	0	0
Cumulative Condition	2	0	0	0	2
Change	+2	0	0	0	+2
Percent Change	--	0%	0%	0%	--

Note: The methodology described as a note to Table 3.3-5 was used to determine population exposure as well as the number of persons who might be highly annoyed.

Single Event Noise Analysis, Golden Triangle Regional Airport

Sound Exposure Level

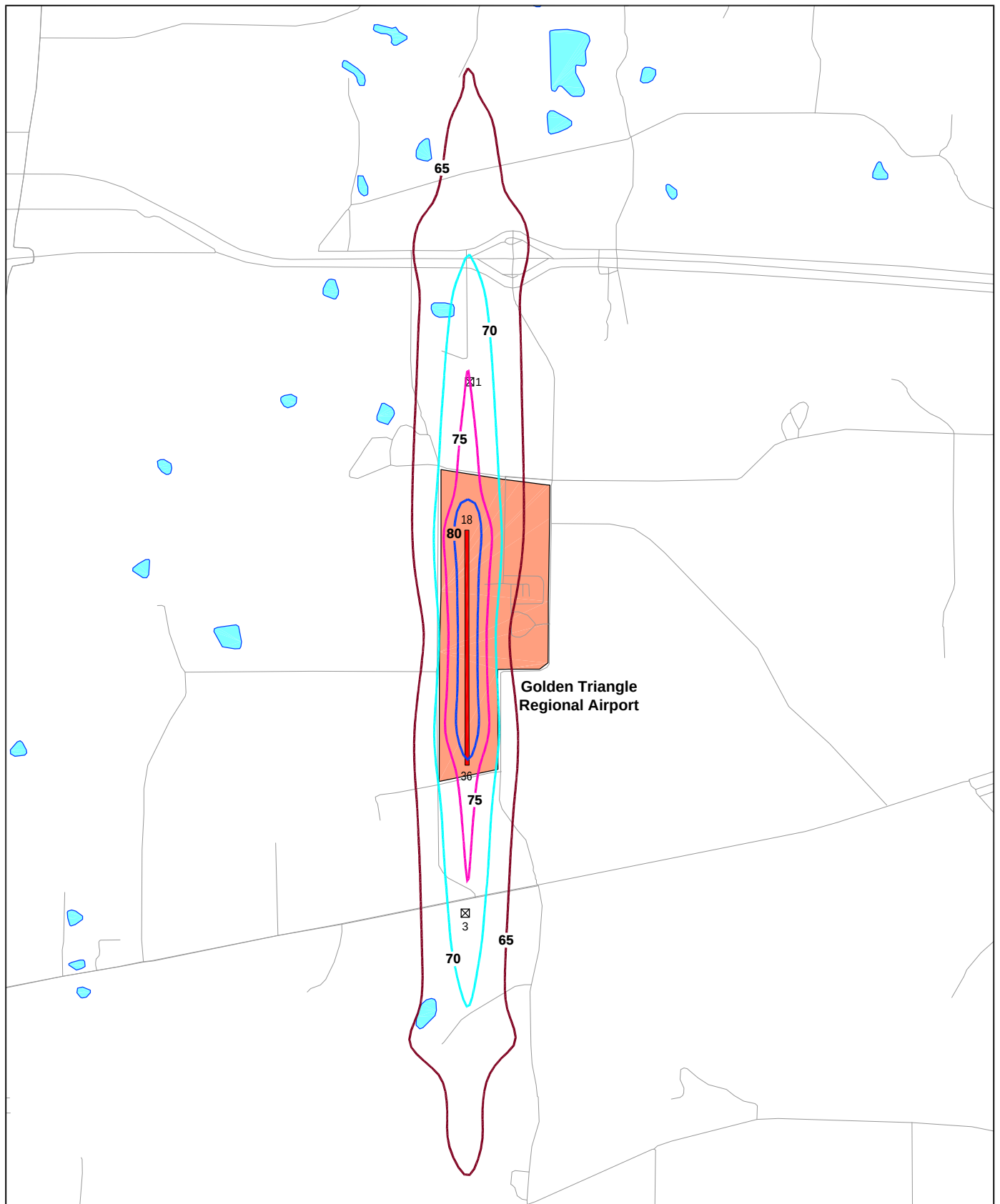
The civil aircraft types and operations for the baseline would continue under the cumulative condition. Since SEL is related to single overflight, there would be no changes for the SEL for the baseline aircraft that continue to operate under the cumulative condition (see Table 3.3-9). Table 4.3-16 presents the SEL for T-1 and T-6 operations under the cumulative condition. The SEL from T-1 and T-6 operations at the points north and south of the runway, respectively, would be about 2 or 13 dBA less than that from Learjet operations under the baseline (see Tables 3.3-9 and 4.3-16). The T-1 and T-6 SEL at the points east and west of the airfield, respectively, would be approximately 36 and 32 dBA greater than that from the Learjet.

Sleep Disturbance

The sleep disturbance introductory and background information for Columbus AFB in Section 4.3.1 applies to GTRA. Individuals in residences in the area around the airfield would continue to be exposed to indoor SEL of 60 to 80 dBA during normal sleep periods (10:00 p.m. to 7:00 a.m.). 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-6 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 normal sleep periods.

Effects of Noise on Structures

The maximum sound pressure levels at a distance of 1,000 feet during a high power setting (*i.e.*, takeoff) for the T-6 and T-1 aircraft conservatively would be 88 dBA and 94 dBA, respectively. The maximum sound pressure at 200 feet from T-6 and T-1 aircraft conservatively would be about 89 dBA and 105 dBA, respectively. Therefore, no damage to structures in the area surrounding GTRA would be anticipated because the sound pressure produced by the aircraft would not exceed the level at which structural damage could occur (*i.e.*, 127 dBA).



Golden Triangle Regional Airport

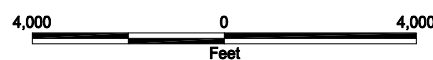
LEGEND

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

- Runway
- Roadway

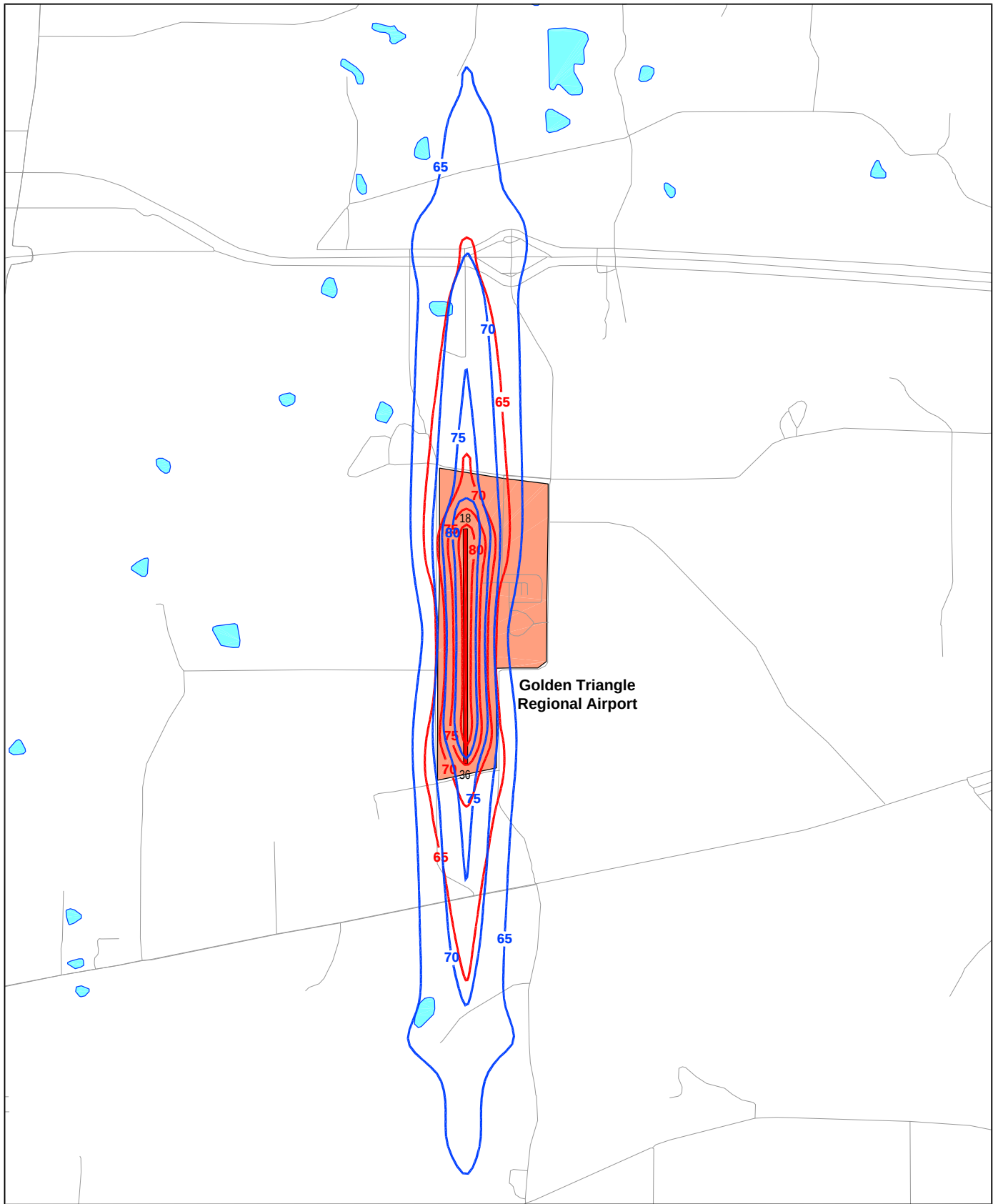
- ☒ Analysis Point

Golden Triangle Regional Airport



**Cumulative Condition
Noise Contours,
Golden Triangle Regional
Airport**
Figure 4.3-13

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Golden Triangle Regional Airport

LEGEND

— Baseline Noise Contours	— Runway	 Golden Triangle Regional Airport
— Cumulative Condition Noise Contours	— Roadway	



Comparison of Baseline and Cumulative Condition Noise Contours, Golden Triangle Regional Airport

Figure 4.3-14

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Averaged Noise Analysis, Golden Triangle Regional Airport

As indicated in Table 4.3-17, the number of persons exposed to DNL 65 dBA and greater would increase by 8 persons. The number of persons who would be highly annoyed by noise exposure would increase by 2 persons.

The discussions and analyses for the Proposed Action at Columbus AFB for speech disruption, hearing loss, and nonauditory health effects apply to the cumulative condition at GTRA. The overall effect of the cumulative condition at the GTRA would be an increase of 8 persons exposed to DNL 65 dBA and greater.

Averaged Noise Analysis, Golden Triangle Regional Airport

As indicated in Table 4.3-17, the number of persons exposed to DNL 65 dBA and greater would increase by 8 persons. The number of persons who would be highly annoyed by noise exposure would increase by 2 persons.

The discussions and analyses for the Proposed Action at Columbus AFB for speech disruption, hearing loss, and nonauditory health effects apply to the cumulative condition at GTRA. The overall effect of the cumulative condition at the GTRA would be an increase of 8 persons exposed to DNL 65 dBA and greater.

Military Training Routes

Table 2.5-4 lists the annual and monthly operations anticipated for the 10 MTRs under the cumulative condition. Table 4.3-18 compares the L_{dnmr} for the Columbus AFB aircraft operations that would occur on the specific routes with the baseline condition.

Table 4.3-18 Comparison of Aircraft Noise Levels below the Military Training Routes, Cumulative Condition

Route	L_{dnmr} (dBA)			Route	L_{dnmr} (dBA)		
	Baseline	CC	Chg.		Baseline	CC	Chg.
IR0-66	40	40	0	VR-1014	43	42	-1
IR-067	35	29	-6	VR-1050	35	29	-6
IR-068	35	32	-3	VR-1051	42	32	-10
IR-070	42	40	-2	VR-1072	42	30	-12
IR-091	41	40	-1	SR-137	45	38	-7

Note: L_{dnmr} is represented for 500 feet AGL. CC=cumulative condition.

As indicated in the table, the L_{dnmr} would remain the same or decrease for each MTR and would range from a low of 29 dBA to a high of 42 dBA. The L_{dnmr} would not exceed 55 dBA, the level above which the general population could be at risk from the effects of noise, on any of the routes (USEPA 1974). The L_{dnmr} would be a maximum of 5 dBA greater than the values stated in Table 4.3-18 at the points at which the MTRs intersect or when there are common route segments. Thus, the maximum L_{dnmr} for any route could be about 47 dBA. Overall, the L_{dnmr} would not exceed the HUD, FAA, and Air Force noise level at which residential and other noise-sensitive land uses would be unacceptable on any route (*i.e.*, L_{dnmr} 65 dBA).

The noise anticipated from MTR operations would not exceed the level used for hearing loss and speech interference analysis (*i.e.*, L_{dnmr} 75 dBA). The discussion for these two items in the Proposed Action (Section 4.3.1) apply to MTR operations. Likewise, the sleep disruption and non-auditory health effects discussions from the Section apply.

Table 4.3-19 lists the SEL values for the T-38C for points directly below and lateral to an aircraft ground track. Both the L_{dnmr} and SEL decrease as the distance between the receptor and the route centerline increases. The T-38C is approximately 5 dBA louder than the T-38A for the distances listed in Table 4.3-11 (see Table 3.3-12 for T-8A data). There would be no change from the baseline for the T-1 and the T-6 discussion in Section 4.3.1 applies to the T-6.

Table 4.3-19 Aircraft Noise Levels (SEL) as a Function of Distance from Aircraft Ground Track Centerline, Cumulative Condition

Aircraft	200 Feet	315 Feet	500 feet	1,000 Feet	2,000 Feet	3,150 Feet
T-38C	103	100	96	91	84	79

Note: Table 3.3-12 lists the data for the T-1 and Table 4.3-11 contains the T-6 information. Data reflect noise from cruise power.

The conservative L_{max} for the T-38C and T-1 at cruise power and 500 feet AGL, the minimum altitude flown on an MTR, would be about 91 dBA and 92 dBA, respectively. As mentioned in Section 4.3.1, the L_{max} for the T-6 would be 81 dBA. Thus, the L_{max} all three aircraft would be well below the threshold at which structural damage would occur (*i.e.*, 127 dBA). Thus, no structural damage would be expected from Columbus AFB operations on an MTR.

The discussion on the effects of aircraft noise and sonic booms on livestock and fowl for the Proposed Action in Section 4.3.1 apply to the cumulative condition. No impacts would be anticipated to livestock or fowl from MTR operations under the cumulative condition.

4.4 LAND USE

An impact to land use would be considered significant if one or more of the following occur as a result of the proposed action: (1) conflict with applicable ordinances and/or permit requirements; (2) nonconformance with applicable land use plans; (3) preclusion of adjacent or nearby properties being used for existing activities; or (4) conflict with established uses of an area.

4.4.1 Proposed Action

Columbus AFB

The COMBS facility would be constructed on a site within the airfield and direct mission land use category. The facility would be used to store aircraft parts and used for aircraft maintenance. The function of the warehouse would be directly related to the land use category in which it would be located and would be compatible with the category.

When compared to baseline conditions, the Proposed Action would decrease the area of noise exposure in the residential areas of the Base. There would be only minor changes in off-Base noise exposure. Thus, the incompatible land uses resulting from aircraft noise would continue. There would be no change to the dimensions of current CZs or APZs at Columbus AFB. Therefore, the APZ incompatibilities that occur in the baseline would continue under the Proposed Action. No additional land use incompatibilities would be anticipated under the Proposed Action.

Shuqualak Auxiliary Airfield

When compared to baseline conditions, the Proposed Action would decrease the area of noise exposure, especially to the north and east of the airfield. There would be no change to the dimensions of current CZs or APZs at Shuqualak Auxiliary Airfield. No CZ or APZ incompatibilities occur under the condition. The mobile homes along the rural road that passes northwest of the airfield would continue to be within the DNL 65 dBA and greater noise exposure area and would continue to be incompatible from noise exposure. No additional land use incompatibilities would be anticipated under the Proposed Action.

Golden Triangle Regional Airport

Noise modeling indicates the DNL 65 dBA and greater noise exposure area would extend about three-quarters of a mile further to the north and south of the runway ends than that for the baseline. 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 report (GTRA 1984), land use in the area around the airport has undergone little change and has 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.

Military Training Routes

Land within the MTR corridors would be exposed to noise from aircraft operations at levels of L_{dnmr} 42 and 38 dBA. The resultant noise levels would be below the noise/land use compatibility guidelines synopsized in Table 3.4-1. Additionally, the L_{dnmr} would not exceed the HUD, FAA, and Air Force noise level at which residential and other noise-sensitive land uses would be unacceptable on any route (*i.e.*, L_{dnmr} 65 dBA). There are numerous recreational/wilderness areas below the MTRs where visitors may be annoyed by aircraft overflight (see Section 3.4.4). However, based on the sensitive land uses, exposed noise levels and consideration of the noise and overflight studies described in Section 3.3, annoyance should not increase because the noise levels from aircraft overflight would decrease. Neither aircraft overflight nor the resultant noise would cause changes to existing land uses.

4.4.2 No Action Alternative

The COMBS facility would not be constructed and aircraft operations at Columbus AFB, Shuqualak Auxiliary Airfield, and on the MTRs would continue at the baseline operations condition. Columbus AFB aircrews would not conduct airfield operations at the GTRA. Routine facilities actions at Columbus AFB would be accomplished in accordance with the Base's General Plan. The aircraft-operations conditions at the Base, Shuqualak Auxiliary Airfield, and the MTRs would not generate any conditions that would require changes to existing land use around the airfields and along the MTR corridors. Noise exposure from airfield operations at the GTRA would remain the same as the baseline condition, which does not affect land use.

4.4.3 Mitigation

No mitigation would be required.

4.4.4 Cumulative Impacts

Columbus AFB

The distance between the Proposed Action COMBS facility and the other action projects would preclude land use conflicts between the projects.

When compared to baseline conditions, the cumulative condition would decrease the area of noise exposure, especially in the residential areas south of the Base. Thus, the incompatible land uses resulting from aircraft noise in these residential areas would be eliminated. There would be no change to the dimensions of current CZs or APZs at Columbus AFB. Therefore, the APZ incompatibilities that occur in the baseline would continue under the cumulative condition. No additional land use incompatibilities would be anticipated under the cumulative condition.

Golden Triangle Regional Airport

Noise modeling indicates the DNL 65 dBA and greater noise exposure area would extend about three-quarters of a mile further to the north and south of the runway ends than that for the baseline. 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 undergone little change and has remained primarily rural farmland. Although the noise exposure area would increase under the cumulative condition, the additionally exposed areas would continue to be farmland and no other land use types would be exposed to aircraft noise.

Military Training Routes

Land within the MTR corridors would be exposed to noise from aircraft operations at levels between L_{dnmr} 29 and 42 dBA. The resultant noise levels would be below the noise/land use compatibility guidelines synopsized in Table 3.4-1. Additionally, the L_{dnmr} would not exceed the HUD, FAA, and Air Force noise level at which residential and other noise-sensitive land uses would be unacceptable on any route (*i.e.*, L_{dnmr} 65 dBA). There are numerous recreational/wilderness areas below the MTRs where visitors may be annoyed by aircraft overflight (see Section 3.4.4). However, noise from aircraft overflight would be below the level at which persons could be highly annoyed (see Table 3.3-1). Neither aircraft overflight nor the resultant noise would cause changes to existing land uses.

4.5 AIR QUALITY

Impacts to air quality in attainment areas would be considered significant if pollutant emissions associated with the implementation of the federal action caused or contributed to a violation of any national, state, or local ambient air quality standard, exposed sensitive receptors to substantially increased pollutant concentrations, represented an increase of ten percent or more in affected AQCR's emissions inventory, or exceeded any significance criteria established by the SIP. Impacts to air quality in nonattainment areas would be considered significant if the net change in proposed pollutant emissions caused or contributed to a violation of any national, state, or local ambient air quality standard; increased the frequency or severity of a violation of any ambient air quality standard; or delayed the attainment of any standard or other milestone

contained in the SIP. With respect to the General Conformity Rule, impacts to air quality would be considered significant if emissions increased a nonattainment or maintenance area's emissions inventory by ten percent or more for individual nonattainment pollutants; or exceeded threshold levels established in 40 CFR 93.153(b) for individual nonattainment pollutants or pollutants for which an area has been redesignated as a maintenance area.

4.5.1 Proposed Action

Columbus AFB, Shuqualak Auxiliary Airfield, and Golden Triangle Regional Airport

Fugitive dust from ground disturbing activities, combustive emissions from construction equipment, and emissions from asphalt paving operations would be generated during construction and demolition. Fugitive dust would be generated from activities associated with site clearing, grading, cut and fill operations, and from vehicular traffic moving over the disturbed site. These emissions would be greatest during the initial site preparation activities and would vary from day to day depending on the construction phase, level of activity, and prevailing weather conditions.

The quantity of uncontrolled fugitive dust emissions from a construction site is proportional to the area of land being worked and the level of construction activity. The USEPA has estimated that uncontrolled fugitive dust emissions from ground-disturbing activities would be emitted at a rate of 80 lbs of TSP per acre per day of disturbance (USEPA 1995). In a USEPA study of air sampling data at a distance of 50 meters downwind from construction activities, PM₁₀ emissions from various open dust sources were determined based on the ratio of PM₁₀ to TSP sampling data. The average PM₁₀ to TSP ratios for top soil removal, aggregate hauling, and cut and fill operations is reported as 0.27, 0.23, and 0.22, respectively (USEPA 1988). Using 0.24 as the average ratio for purposes of analysis, the emission factor for PM₁₀ dust emissions becomes 19.2 lbs per acre per day of disturbance. Fugitive dust emissions from demolition activities would be generated primarily from building dismemberment, debris loading, and debris hauling. The USEPA has established a recommended emission factor of 0.011 lbs of PM₁₀ per square foot of demolished floor area. This emission factor is based on air sampling data taken from the demolition of a mix of commercial brick, concrete, and steel buildings (USEPA 1988).

The USEPA also assumes that 230 working days are available per year for construction (accounting for weekends, weather, and holidays), and that only half of these working days would result in uncontrolled fugitive dust emissions at the emitted rate described above (USEPA 1995). The construction emissions presented in Table 4.5-1 include the estimated annual PM₁₀ emissions associated with the Proposed Action at Columbus AFB. These emissions would produce slightly elevated short-term PM₁₀ ambient air concentrations. The USEPA estimates that the effects of fugitive dust from construction activities would be reduced significantly with an effective watering program. Watering the disturbed area of the construction site twice per day with approximately 3,500 gallons per acre per day would reduce TSP emissions as much as 50 percent (USEPA 1995).

Specific information describing the types of construction equipment required for a specific task, the hours the equipment is operated, and the operating conditions vary

widely from project to project. For purposes of analysis, these parameters were estimated using established cost estimating methodologies for construction and experience with similar types of construction projects (Means 1996). Combustive emissions from construction equipment exhausts were estimated by using USEPA approved emissions factors for heavy-duty diesel-powered construction equipment (USEPA 1995). The construction emissions presented in Table 4.5-1 include the estimated annual emissions from construction equipment exhaust associated with the Proposed Action at Columbus AFB. As with fugitive dust emissions, combustion emissions would produce slightly elevated air pollutant concentrations. However, the effects would be temporary, fall off rapidly with distance from the proposed construction site, and would not result in any long-term impacts.

Table 4.5-1 Proposed Action Emissions, Columbus AFB, Shuqualak Auxiliary Airfield, Golden Triangle Regional Airport, and Military Training Routes within AQCR 135

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM10 (tpy)
AQCR 135 CY99Totals ^a	379,722	93,371	79,718	10,082	126,795
Proposed Action					
Construction Emissions ^b	0.48	0.09	1.16	0.13	0.25
Construction Emissions as Percent of AQCR Emissions	0.0001%	0.0010%	0.0015%	0.0013%	0.0002%
Aircraft Emissions					
Columbus AFB	1,140.30	218.40	157.90	0.00	34.60
Shuqualak Auxiliary Airfield	53.60	13.80	15.40	0.00	0.00
Golden Triangle Regional Airport	238.90	56.40	52.60	0.00	0.00
VR-1014	0.86	0.02	0.29	0.00	0.04
SR-137	2.31	0.10	2.15	0.00	0.00
Annual Aircraft Emissions	1,435.97	288.72	228.34	0.00	34.64
Aircraft Emissions as Percent of AQCR Emissions	0.38%	0.31%	0.29%	0.00%	0.03%

a USEPA 2003.

b Assumed to be FY05.

tpy tons per year.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Emissions listed for a MTR are those that would occur from operations on that portion of the MTR that is within the AQCR. Emissions for the remainder of the MTRs are listed in Table 4.5-3.

Airfield operations at Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA, as well as MTR operations, would generate emissions on a recurring basis within AQCR 135. Table 4.5-1 lists the annual emissions from these operations for the Proposed Action. Emissions for airfield and MTR operations were determined using Air Emissions Inventory Guidance Document for Mobile Sources at Air Force Installations (USAF 2001b). Emissions were calculated for the time an aircraft spends in each mode, the number of engines on the aircraft, the number of operations, and the modal emission rate. Emissions for touch and go operations (*i.e.*, closed patterns) were calculated similar to the takeoffs and landings, except that emissions resulting for taxi out, taxi in, and idle were excluded since these modes are not part of a touch and go. The aircraft related emissions in Table 4.5-1 for AQCR 135 represent airfield operations conditions listed in Tables 2.3-1 through 2.3-4.

Review of data in Table 4.5-1 for AQCR 135 indicates that the greatest increase in emissions from aircraft operations would be CO (1,435.97 tpy), which equates to

0.38 percent of the CO emissions within the AQCR. Emissions in the AQCR fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, the AQCR is in attainment.

Table 4.5-2 compares the net change in emissions from aircraft operations-related activities at Columbus AFB, Shuqualak Auxiliary Airfield, the GTRA, and on the MTRs within AQCR 135 with the AQCR emissions.

Table 4.5-2 Net Change in Emissions from Aircraft Operations, Proposed Action, Columbus AFB, Shuqualak Auxiliary Airfield, Golden Triangle Regional Airport, and Military Training Routes within AQCR 135

Activity	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR 135 CY99Totals ^a	379,722	93,371	79,718	10,082	126,795
Baseline Aircraft Emissions	584.00	63.00	11.90	3.60	0.70
Annual Proposed Action Aircraft Operations Emissions	1,435.97	288.72	228.34	0.00	34.64
Net Change in Aircraft Operations Emissions	+851.97	+225.72	+216.44	-3.60	+34.93
Net Change as Percent of AQCR Emissions	+0.224%	+0.242%	+0.272%	-0.036%	+0.027%

^a USEPA 2003.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data reflected as tons per year.

Based on the requirements outlined in the USEPA's General Conformity Rule published in 58 Federal Register 63214 (November 30, 1993) and codified in 40 CFR Part 93, Subpart B (for federal agencies), a conformity analysis is required to analyze whether the applicable criteria air pollutant emissions associated with the project equal or exceed the threshold emission limits that trigger the need to conduct a formal conformity determination. A Federal action would be considered regionally significant when the total emissions from the proposed action equal or exceed 10 percent of the nonattainment or maintenance area's emissions inventory for any criteria air pollutant. However, the AQCR is in attainment. As summarized in Table 4.5-2, the net change in emissions for any of the criteria pollutants would be less than 10 percent of the particular emissions inventory. This analysis satisfies the General Conformity Rule conformity analysis requirement and a Conformity Determination would not be required.

Military Training Routes

Columbus AFB T-6 aircrews would accomplish operations on MTRs that overfly portions of Mississippi and Alabama. Table 4.5-3 lists the estimated emissions for all aircraft operations on the MTR within the respective AQCRs and compares the emissions to the baseline condition. Table 2.3-4 lists the proposed operations on the respective MTRs. As indicated in the Table 4.5-3, MTRs may occur in more than one AQCR due to the route's length and location. Emissions for operations on the portions of the MTRs that occur within AQCR 135 are included in and assessed with the data for that AQCR. Table 4.5-4 shows the net change in emissions from MTRs within AQCR 4 when compared to the baseline as well as the net change compared to the AQCR. This comparison is shown for this AQCR because it is the only region associated with the

MTRs that is nonattainment or does not meet the secondary standard for a criteria pollutant.

Table 4.5-3 Proposed Action Emissions, Military Training Routes

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR 4					
AQCR Emissions ^a	887,254	144,949	328,711	354,167	144,024
VR-1014	2.771	0.077	0.941	0.000	0.123
MTR Emissions as Percent of AQCR Emissions	0.0003%	0.0001%	0.0003%	0.0000%	0.0001%
AQCR 7					
AQCR Emissions ^a	67,659	13,445	9,329	3,346	9,187
VR-1014	2.825	0.079	0.959	0.000	0.125
MTR Emissions as Percent of AQCR Emissions	0.0042%	0.0006%	0.0103%	0.0000%	0.0014%

a See Table 3.5-4.

b Estimated emissions from Proposed Action activities.

tpy tons per year.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Table 4.5-4 Net Change in Emissions from Military Training Route Operations within AQCR 4

Activity	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR 4 CY99Totals ^a	887,254	144,949	328,711	354,167	144,024
Baseline Aircraft Emissions	7.350	0.210	0.820	0.020	0.000
Annual Proposed Action Aircraft Operations Emissions	2.771	0.077	0.941	0.000	0.123
Net Change in Aircraft Operations Emissions	-4.579	-0.133	+0.121	-0.020	+0.123
Net Change as Percent of AQCR Emissions	-0.0005%	-0.0001%	+0.0000%	+0.0000%	+0.0001%

a USEPA 2003.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data reflected as tons per year.

Review of data in Table 4.5-3 for AQCR 7, which is in attainment, indicates that the greatest increase in emissions from MTR operations within the AQCR would be CO (2.825 tpy), which equates to 0.0042 percent of the CO emissions within the region. Emissions in AQCR 7 fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, the AQCR is in attainment. This analysis satisfies the General Conformity Rule conformity analysis requirement and a Conformity Determination would not be required.

As indicated in Table 3.5-4, AQCR 4 is nonattainment for VOC. Based on emissions calculations summarized in Table 4.5-4, the net change in emissions for this criteria pollutant would be less than 10 percent of the particular emissions inventory and the action would not be considered regionally significant. Additionally, the net change in emissions would not exceed the threshold emission limits. The Proposed Action has been demonstrated by USEPA standards not to cause or contribute to new violations of any NAAQS in the affected area, nor increase the frequency or severity of an existing

violation. Implementation of the Proposed Action would not delay timely attainment of the air quality standards in the AQCR, and the action is in compliance or consistent with all relevant requirements and milestones contained in the applicable SIP. This conclusion of positive general Conformity determination for the federal action planned for Columbus AFB fulfills the Air Force's obligation and responsibility under 40 CFR Part 93, Subpart B.

4.5.2 No Action Alternative

Emissions would continue to be generated by Columbus AFB activities such as aircraft operations at the Base, Shuqualak Auxiliary Airfield, and on the MTRs as well as aircraft maintenance, vehicle, boiler, generator, and fueling operations, and industrial processes. Emissions from these activities would continue at the levels generated under the baseline condition and no significant impacts occur from the existing emissions.

4.5.3 Mitigation

No mitigation would be required.

4.5.4 Cumulative Impacts

Columbus AFB, Shuqualak Auxiliary Airfield, and Golden Triangle Regional Airport

Numerous construction projects would be accomplished under the other actions announced for Columbus AFB. Additionally, the T-1 and T-38 airfield operations refinements would occur along with the T-6 basing and operation. The methodologies for calculating emissions for the Proposed Action were used for the cumulative condition. Table 4.5-6 summarizes the emissions from the other actions as well as the Proposed Action and compares the cumulative condition emissions with the baseline.

Table 4.5-6 Cumulative Condition Emissions, Columbus AFB

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM10 (tpy)
AQCR 135 CY99 Totals ^a	379,722	93,371	79,718	10,082	126,795
Construction Emissions					
Other Action Emissions	32.73	15.43	97.92	10.57	44.63
Proposed Action Emissions ^b	0.48	0.09	1.16	0.13	0.25
Total Construction Emissions	33.21	15.52	99.08	10.69	44.88
Cumulative Condition Construction Emissions as Percent of AQCR Emissions	0.01%	0.02%	0.12%	0.11%	0.04%
Aircraft Emissions					
Columbus AFB	1,528.30	218.40	148.90	0.00	44.5
Shuqualak Auxiliary Airfield	53.60	13.80	15.40	0.00	0.00
Golden Triangle Regional Airport	262.60	78.50	50.00	0.00	4.00
IR-066	1.53	0.03	0.31	0.00	0.06
IR-067	0.00	0.00	0.01	0.00	0.00
IR-068	0.02	0.01	0.14	0.00	0.05
IR-091	3.34	0.09	0.87	0.00	0.20
SR-137	2.31	0.10	2.15	0.00	0.00
VR-1014	0.63	0.02	0.22	0.00	0.02
VR-1050	0.02	0.01	0.10	0.00	0.03
VR-1051	0.04	0.02	0.21	0.00	0.07

Table 4.5-6 Cumulative Condition Emissions, Columbus AFB
(cont'd)

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
Annual Aircraft Emissions	1,852.39	310.98	218.31	0.00	48.93
Cumulative Condition Aircraft Emissions as Percent of AQCR Emissions	0.49%	0.33%	0.24%	0.00%	0.04%

a USEPA 2003.

b Estimated emissions from Proposed Action activities.

Note: VOCs are not an air pollutant criterion. However, VOCs are reported because, as an O₃ precursor, it is a controlled pollutant.

Emissions would also be expected from asphalt paving operations. The primary pollutant from asphalt paving is CO; however, minor emissions of other criteria pollutants can be expected. To determine potential emissions from asphalt paving operations, it was assumed that the unit weight of asphalt concrete is 149 pounds per cubic foot (lbs/ft³). The quantity of asphalt concrete required for each construction project is based on an assumed pavement depth of 6 inches. The USEPA has established emission factors for CO, VOCs, SO_x, NO_x, and PM₁₀ of 0.340, 0.017, 0.005, 0.025, 0.020 pounds of pollutant per ton of asphalt concrete, respectively. Expected emissions from asphalt paving are included in the construction emissions data in Table 4.5-6. Emissions from paving would last only as long as the duration of construction activity, fall off rapidly with distance from the construction site, and would not result in long-term impacts.

Table 4.5-6 lists the annual emissions from ground disturbing, construction, demolition, and paving activities for the cumulative condition at Columbus AFB. Review of data in the table indicates that the greatest increase in emissions from cumulative condition construction activities would be NO_x (99.08 tons), which equates to 0.12 percent of the NO_x emissions within the AQCR. The discussion and analysis for the Proposed Action apply to the cumulative condition.

Airfield operations at Columbus AFB, Shuqualak Auxiliary Airfield, and GTRA, as well as MTR operations, would generate emissions on a recurring basis within AQCR 135. Table 4.5-6 lists the annual emissions from these operations for the cumulative condition. The aircraft related emissions in Table 4.5-6 for AQCR 135 represent airfield operations conditions listed in Tables 2.5-2 through 2.5-4 and 2.3-2.

Review of data in Table 4.5-6 for AQCR 135 indicates that the greatest increase in emissions from aircraft operations would be CO (1,852.39 tpy), which equates to 0.49 percent of the CO emissions within the AQCR. Emissions in the AQCR fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, the AQCR is in attainment.

Table 4.5-7 compares the net change in emissions from T-1, T-6, and T-38 operations-related activities at Columbus AFB, Shuqualak Auxiliary Airfield, the GTRA, and on the MTRs within AQCR 135 with the AQCR baseline.

Table 4.5-7 Net Change in Emissions from Aircraft Operations, Cumulative Condition, Columbus AFB, Shuqualak Auxiliary Airfield, Golden Triangle Regional Airport, and Military Training Routes within AQCR 135

Activity	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR 135 CY99Totals ^a	379,722	93,371	79,718	10,082	126,795
Baseline Aircraft Emissions	584.00	63.00	11.90	3.60	0.70
Annual Proposed Action Aircraft Operations Emissions	1,852.39	310.98	218.31	0.00	48.93
Net Change in Aircraft Operations Emissions	+1,268.39	+247.98	+204.41	-3.60	+48.23
Net Change as Percent of AQCR Emissions	+0.33%	+0.27%	+0.26%	-0.40%	+0.04%

a USEPA 2003.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data reflected as tons per year.

As summarized in Table 4.5-7, the net change in emissions for any of the criteria pollutants would be less than 10 percent of the particular emissions inventory. Additionally, the net change in emissions would not exceed the threshold emission limits. Emissions from the construction activities would be temporary and would be eliminated when the activities are completed. Emissions from aircraft operations at Columbus AFB, Shuqualak Auxiliary Airfield, and the GTRA, as well as on the MTRs within AQCR 135, would not exceed threshold limits. A Conformity Determination would not be required.

Military Training Routes

Columbus AFB T-6 aircrews would accomplish operations on MTRs that overfly portions of Mississippi, Alabama, Louisiana, Tennessee, and Arkansas. Table 4.5-8 lists the estimated emissions for all aircraft operations on the MTRs within the respective AQCRs and compares the emissions to the baseline condition. Table 2.5-4 lists the proposed operations by aircraft type on the MTRs. As indicated in the Table 4.5-8, MTRs may occur in more than one AQCR due to the route's length and location. Emissions for operations on the portions of the MTRs that occur within AQCR 135 are included in and assessed with the data for Columbus AFB. Table 4.5-9 shows the net change in emissions from MTRs within AQCRs 4 and 208 when compared to the baseline as well as the net change compared to the AQCR. This comparison is shown for these two AQCRs because they are the only two regions associated with the MTRs that are nonattainment or do not meet the secondary standard for a criteria pollutant.

Table 4.5-8 Cumulative Condition Emissions, Military Training Routes

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR 4					
AQCR Emissions ^a	887,254	144,949	328,711	354,167	144,024
IR-066	0.043	0.001	0.009	0.000	0.002
IR-067	0.000	0.000	0.002	0.000	0.001
VR-1014	2.028	0.054	0.704	0.000	0.064
VR-1050	0.013	0.006	0.078	0.000	0.025
VR-1051	0.001	0.000	0.005	0.000	0.002
Total MTR Emissions	2.085	0.061	0.798	0.000	0.094
MTR Emissions as Percent of AQCR Emissions	0.0002%	0.0000%	0.0002%	0.0000%	0.0001%
AQCR 5					
AQCR Emissions ^a	1,600,121	329,266	403,943	413,838	321,204

Table 4.5-8 Cumulative Condition Emissions, Military Training Routes
(cont'd)

Criteria Air Pollutant	CO (tpy)	VOC (tpy)	NOx (tpy)	SOx (tpy)	PM ₁₀ (tpy)
VR-1072	0.055	0.024	0.329	0.000	0.107
MTR Emissions as Percent of AQCR Emissions	0.0000%	0.0000%	0.0001%	0.0000%	0.0000%
AQCR 7					
AQCR Emissions ^a	67,659	13,445	9,329	3,346	9,187
IR-066	2.099	0.047	0.419	0.000	0.084
IR-067	0.020	0.009	0.120	0.000	0.039
VR-1014	2.067	0.055	0.718	0.000	0.066
VR-1050	0.020	0.009	0.118	0.000	0.039
VR-1051	0.038	0.016	0.225	0.000	0.073
Total MTR Emissions	4.244	0.136	1.600	0.000	0.300
MTR Emissions as Percent of AQCR Emissions	0.0063%	0.0010%	0.0172%	0.0000%	0.0033%
AQCR 16					
AQCR Emissions ^a	483,920	86,460	114,081	85,383	129,733
IR-070	0.193	0.083	1.147	0.000	0.374
MTR Emissions as Percent of AQCR Emissions	0.0000%	0.0001%	0.0010%	0.0000%	0.0003%
AQCR 19					
AQCR Emissions ^a	266,663	45,733	89,599	29,742	87,176
IR-070	0.225	0.097	1.337	0.000	0.436
MTR Emissions as Percent of AQCR Emissions	0.0001%	0.0002%	0.0015%	0.0000%	0.0005%
AQCR 134					
AQCR Emissions ^a	151,531	36,210	62,514	36,228	87,291
IR-068	0.029	0.012	0.172	0.000	0.056
IR-070	0.178	0.077	1.057	0.000	0.344
IR-091	0.513	0.014	0.134	0.000	0.031
Total MTR Emissions	0.720	0.103	1.363	0.000	0.431
MTR Emissions as Percent of AQCR Emissions	0.0005%	0.0003%	0.0022%	0.0000%	0.0005%
AQCR 208					
AQCR Emissions ^a	792,216	143,849	252,006	297,269	100,773
IR-066	1.065	0.024	0.213	0.000	0.042
IR-067	0.018	0.008	0.109	0.000	0.035
VR-1050	0.010	0.004	0.060	0.000	0.020
VR-1051	0.051	0.022	0.304	0.000	0.099
Total MTR Emissions	1.145	0.058	0.685	0.000	0.196
MTR Emissions as Percent of AQCR Emissions	0.0001%	0.0000%	0.0003%	0.0000%	0.0002%
AQCR 209					
AQCR Emissions ^a	273,480	57,661	59,287	13,141	78,102
IR-066	1.324	0.030	0.264	0.000	0.053
IR-067	0.023	0.010	0.135	0.000	0.044
VR-1050	0.012	0.005	0.071	0.000	0.023
VR-1051	0.044	0.019	0.262	0.000	0.085
Total MTR Emissions	1.403	0.064	0.732	0.000	0.205
MTR Emissions as Percent of AQCR Emissions	0.0005%	0.0001%	0.0012%	0.0000%	0.0003%

a See Table 3.5-4.

b Estimated emissions from cumulative condition activities.

tpy tons per year.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant.

Table 4.5-9 Net Change in Cumulative Condition Emissions from Military Training Route Operations within AQCRs 4 and 208

Activity	CO (tpy)	VOC (tpy)	NO _x (tpy)	SO _x (tpy)	PM ₁₀ (tpy)
AQCR 4 CY99Totals ^a	887,254	144,949	328,711	354,167	144,024
Baseline Aircraft Emissions	7.350	0.210	0.820	0.020	0.000
Annual Proposed Action Aircraft Operations Emissions	2.085	0.061	0.798	0.0	0.094
Net Change in Aircraft Operations Emissions	-5.265	-0.149	-0.022	-0.020	+0.094
Net Change as Percent of AQCR Emissions	0.00%	0.00%	0.00%	0.00%	0.00%
AQCR 208 CY99Totals ^a	792,216	143,849	252,006	297,269	100,773
Baseline Aircraft Emissions	3.000	0.200	1.200	0.100	0.000
Annual Proposed Action Aircraft Operations Emissions	1.145	0.058	0.685	0.000	0.196
Net Change in Aircraft Operations Emissions	-1.855	-0.142	-0.515	-0.100	+0.196
Net Change as Percent of AQCR Emissions	-0.0002%	-0.0001%	-0.0002%	-0.0000%	+0.0002%

^a USEPA 2003.

Note: VOC is not a criteria air pollutant. However, VOC is reported because, as an ozone precursor, it is a controlled pollutant. Data reflected as tons per year.

Review of data in Table 4.5-8 for AQCRs 5, 7, 16, 19, 134, and 209, all of which are in attainment, indicates that the greatest increase in emissions from MTR operations would be CO (4.244 tpy), which equates to 0.0063 percent of the CO emissions within the AQCR. Emissions in each of these AQCRs fall below the 10 percent level that would be considered regionally significant by the USEPA if the region were nonattainment for any of the criteria pollutants as stated in 40 CFR 51, Subpart W, Section 852. However, the AQCRs are in attainment. A Conformity Determination would not be required.

As indicated on Table 3.5-4, AQCR 4 is nonattainment for VOC and AQCR 208 does not meet the secondary standard for PM₁₀. Based on emissions calculations summarized in Table 4.5-9, the net change in emissions for these two criteria pollutants would be less than 10 percent of the particular emissions inventory and the action would not be considered regionally significant. Additionally, the net change in emissions would not exceed the threshold emission limits. The cumulative condition has been demonstrated by USEPA standards not to cause or contribute to new violations of any NAAQS in the affected area, nor increase the frequency or severity of an existing violation. Implementation of the cumulative condition would not delay timely attainment of the air quality standards in the AQCRs, and the action is in compliance or consistent with all relevant requirements and milestones contained in the applicable SIP. This conclusion of positive general Conformity determination for the federal action planned for Columbus AFB fulfills the Air Force's obligation and responsibility under 40 CFR Part 93, Subpart B. A Conformity Determination would not be required.

4.6 INFRASTRUCTURE AND UTILITIES

Impacts to the infrastructure and utility systems would be considered significant if the federal action substantially increased the demands on systems, resulting in the need for additional capacity or new facilities.

4.6.1 Proposed Action

Energy

Implementation of the Proposed Action would result in a slight increase in the demand for energy after the basing action is complete. As a result of the Proposed Action, an additional 12,000 square feet of climate-controlled space would be constructed and daily electricity and natural gas use would increase by 503.5 kWh (12,000 square feet x 0.04196 kWh per square foot) and 1.5 Mcf (12,000 square feet x 0.000121 Mcf per square foot), respectively. The increases would represent 0.45 and 0.39 percent of the baseline electricity and natural gas consumption conditions, respectively.

Solid Waste Management

Analysis of the impacts associated with the proposed demolition and construction activities is based on the following assumptions:

- The weight of concrete debris is 150 lb/ft³ (Merritt 1976);
- The weight of asphaltic concrete roadways is 130 lb/ft³ (AI 1983);
- Approximately 4 pounds of construction debris is generated for each square foot of floor area for new structures (Davis 1995);
- Approximately 92 pounds of demolition debris is generated for each square foot of floor area of demolished structures (USACE 1976);
- Approximately 96 pounds of demolition and construction debris are generated for each square foot of floor area of renovated structures;
- Approximately 1 pound of construction debris is generated for each square foot of new asphaltic concrete pavement;

Under the Proposed Action, there would be no change in the number of personnel residing or working on Base. Thus, there would be no change in solid waste when compared to the baseline.

Solid waste would be generated from implementation of the Proposed Action. These wastes would consist of building debris and construction materials such as concrete, metals (roofing, reinforcement bars, conduit, piping, *etc.*), fiberglass (roofing materials and insulation), cardboard, plastics (PVC piping, packaging material, shrink wrap, *etc.*), and lumber. Based on information in paragraph 2.3.2 and estimations, 12,000 square feet would be constructed. Based on these data and the assumptions listed above, it is estimated that 25 tons of construction debris would be generated by the Proposed Action.

As mentioned in Section 3.6.2, the Golden Triangle Solid Waste Authority Landfill has a remaining projected life expectancy of 100 years, with an average disposal rate of 470 tons per day. Based on an average disposal of 260 days per year (*i.e.*, 5 days per week) for 100 years, there would be 26,000 days when construction and demolition debris would be disposed in the landfill. Thus, the total remaining capacity of the landfill

is estimated at 12,220,000 tons. The projected disposal from the project (25 tons) equates to about 0.0002 percent of the total remaining capacity. This condition is conservative and reflects that all waste would be disposed in a landfill. It is assumed the contractor would recycle materials to the maximum extent possible, thereby reducing the amount of construction and demolition debris disposed in the landfill. However, the exact amount of debris cannot be estimated at this time and this analysis assessed the most conservative condition.

Storm Water Management

An additional 12,000 square feet of impervious cover (0.5 percent of the existing facility footprint at the Base) would occur from construction of the COMBS facility. The anticipated increase of 0.5 percent in storm water would be minimal when compared to the runoff from the approximate 2,338,110 square feet of facility footprint at the Base.

Transportation Systems

A temporary increase in construction-related traffic during the construction activities would occur from the Proposed Action. It is anticipated construction-related traffic would be localized to the specific construction project area as well as to the route between the project site and the Base gate. The construction-related traffic would be temporary, lasting as long as the project activity. There would be no change in the number of personnel at Columbus AFB as a result of the Proposed Action. Thus, no change in weekday on-Base roadway volumes or at the Base gates would be anticipated.

4.6.2 No Action Alternative

No facilities actions associated with T-6 basing would be accomplished at Columbus AFB under the No Action Alternative. Although there could be minor variations in the number of personnel authorizations at the Base, no large-scale changes such as those associated with unit changes would occur. For these reasons, energy use, as well as solid waste generation, would continue at the levels experienced under the current conditions. The volume of vehicular traffic would remain at current levels due to no change in assigned personnel.

4.6.3 Mitigation

No mitigation would be required.

4.6.4 Cumulative Impacts

Energy

Climate controlled space would decrease by 44,249 square feet as a result of the other actions and increase by 12,000 square feet under the Proposed Action, for a net decrease of 32,249 square feet. Daily electricity and natural gas use would decrease by 1,353.2 kWh (32,249 square feet x 0.04196 kWh per square foot) and 3.9 Mcf (32,249 square feet x 0.000121 Mcf per square foot), respectively. The decreases would represent 1.2 percent of the baseline electricity and natural gas consumption conditions, respectively.

Solid Waste Management

There would be no change in the number of personnel residing or working on Base under the Proposed Action cumulative condition. Thus, there would be no change in solid waste when compared to the baseline.

Based on the information in Section 2.5, a total of about 931,299 square feet of facility space would be constructed under other actions, and 1,075,076 square feet would be demolished. Based on these data and the assumptions listed in Section 4.6.1, it is estimated that 51,316 tons of debris would be generated by the other actions.

The life expectancy and disposal information used for the Proposed Action analysis apply to the cumulative condition. The projected disposal from the Proposed Action cumulative condition (51,316 plus 25 equals 51,341 tons) equates to 0.42 percent of the total remaining capacity. The recycling discussion for the Proposed Action applies to the alternative.

Storm Water Management

There would be a net decrease of 131,077 square feet of facility footprint at the Base when combining the decrease of 143,077 square feet associated with the other actions to the additional 12,000 square feet from the COMBS facility. This would equate to an approximate 5.6 percent reduction in facility footprint. Thus, there should be a corresponding decrease in storm water runoff under the cumulative condition.

Transportation

Construction projects associated with the other actions would increase project-related traffic as described for the Proposed Action. Since one of the other actions is in the same area as the Proposed Action construction activity, there could be a slight cumulative increase in traffic in the specific area for the period when both projects are in progress. Overall, it is anticipated construction-related traffic would be localized to the specific construction project area as well as to the route between the project site and the Base gate. The construction-related traffic from the cumulative condition would be temporary, lasting as long as the project activity. As with the Proposed Action, there would be no increase in the number of personnel under the other actions. Thus, no change in weekday on-Base roadway volumes or at the Base gates would be anticipated for the cumulative condition.

4.7 BIOLOGICAL RESOURCES

An impact to biological resources would be considered significant if the action would interfere substantially with wildlife movement or reproductive behavior, substantially diminish a regionally or locally important animal species, or adversely effect a threatened or endangered species.

4.7.1 Proposed Action

Operations on VR-1014 would include the T-6, T-1, and T-38 aircraft and SR-137 operations would be limited to T-6s. Although the Proposed Action is limited to T-6 aircraft, the analysis pertains to all three aircraft because each type would use the route.

The diversity of landforms and geography covered by the MTRs support a number of plant communities, which are categorized into several life zones. Travel across

remote, less-densely populated sections of the states results in increased contact between military overflights and natural resources. There are no known effects of low-level overflights of the MTRs to vegetation communities or plant species.

In some situations, noise and visual disturbance caused by military overflight may cause short-duration effects to wildlife, or conflict with conservation purposes of National Wildlife Refuges (GAO 1989; Dewey and Mead 1994). Only when animals have little freedom of movement (*i.e.*, for escape) and/or are subjected to intense sound volume and frequency would negative effects likely to be measurable or long-lasting (Janis and Busnel 1978).

An increasing number of studies show low-level, fixed-wing military overflight of varying intensity of sonic or sub-sonic noise (dBA) elicit little response from most free-roaming species, particularly birds and mammals (Platt 1977; Ellis 1981; USUF 1992; Grubb and Bowerman 1997; Johnson and Reynolds 2002). The USFWS reports numerous studies show there is little or no effect on wildlife from aircraft-related noise and visual disturbances (Gladwin *et al.* 1988).

The Proposed Action would result in T-6 aircraft flying within proposed MTR corridors. Activities would most likely result in immediate, non-harmful and short-duration responses by some wildlife. Wildlife would be expected to quickly habituate to sights and sounds associated with low-level aircraft overflights. In general, military overflights would be random and pose no threat to wildlife at the behavioral (individual), population, or species level.

Threatened, Endangered, and Special Status Species

There are no known effects of noise or overflight disturbance to threatened and endangered species of plants. The noise effects discussion in the previous paragraphs also applies to listed mammal species. Birds would have the greatest potential for effect from aircraft overflight. Thus, this analysis focuses on birds.

Little research has been done comparing the differences in bird responsiveness to aircraft overflight and ground-based disturbances. Four studies that examined the effects of aircraft overflight on nesting birds noted a slight, insignificant decrease in nesting success and productivity when comparing disturbed and undisturbed nests (USACE 2000).

Birds may be more susceptible to disturbance-caused nest abandonment early in the nesting season. Studies have shown the following nest abandonment after being exposed to ground-based and aircraft overflight disturbances (USACE 2000).

- 30 percent of Ferruginous Hawk abandoned the nest after exposure to various ground-based disturbances (no control group was used for comparison).
- 2 of 29 Red-tailed Hawk nests were abandoned after being flushed by helicopter overflight compared to 0 of 12 for the control group.
- 1 of 19 Prairie Falcon nests was abandoned when exposed to frequent low-altitude jet overflight (no control group was used for comparison).
- 1 of 11 Gyrfalcon nests failed (reportedly due to snow damage) compared to 0 of 12 for the control group.

- 1 of 6 Peregrine Falcon nests exposed to helicopter flights were abandoned (apparently due to inclement weather) compared to 0 of 3 control sites.

An Arizona study on the affect of anthropogenic disturbances on Bald Eagles found that the highest response frequency and severity of response was to ground-based, aquatic, and aerial disturbances, respectively. Another study involving the Mexican Spotted Owl found that chain saws resulted in a greater flush response than helicopters at comparable distances and noise levels. Birds not previously exposed to specific disturbance types (*e.g.*, aircraft approach distance) are more likely to flush (USACE 2000).

Studies associated with the stimulus distance have indicated it was rare for birds to flush when the stimulus distance was greater than 197 feet. Many studies imply that animal response to noise disturbance events increases with a decrease in the distance to the stimulus source. One study found that owl flushing in response to a disturbance was “strongly and negatively related to stimulus distance and positively related to noise level.” Another study found similar results when experimentally exposing Red-cockaded woodpeckers to military training noise (USACE 2000).

A study found that Snail Kites living near an airport and thus accustomed to aircraft noise did not flush even when the noise levels were as high as 105 dBA. Mexican Spotted Owls did not flush during the nesting season when the SEL from helicopters was equal to or less than 92 dBA and the equivalent average sound level for chain saws was equal to or less than 46 dBA. (Equivalent average sound level is the steady-state A-weighted sound level that contains the same acoustical energy as the time varying A-weighted sound level during the same interval.) Noise response thresholds for the nonnesting season were comparable with those for the nesting season (USACE 2000).

The USACE recently completed a study to determine the effect of military noise on the Red-cockaded woodpecker (USACE 2000). Three types of sample sites were chosen: passive disturbed; undisturbed; and experimental. A passive disturbed site received potentially significant noise disturbance as part of normal training operations; however, there was no control over time, number, or level of noise events at the site. Noise sources at the passive disturbed sites were from firing large-caliber weapons, small arms, and grenade and artillery simulators and helicopter overflight. An undisturbed site was one where the noise levels were judged to be consistently low or absent for all these noise types. Birds at experimental sites were exposed to either artillery simulators or .50-caliber blank fire under controlled conditions at distances ranging from 50 to 801 feet from the nest tree.

Summary of the USACE 2000 study focuses on the results from passive disturbance since aircraft overflight would not produce ground-based noise sources such as weapons firing. No Red-cockaded Woodpeckers were observed flushing the nest when a passive noise source was equal to or greater than 656 feet from the nest. More specifically, birds did not flush when helicopters were equal to or greater than 328 feet from the nest site and SEL noise levels were less than 88 dBA (USACE 2000), which would be about 85 dBA at 500 feet from the source.

The USACE study indicated that Red-cockaded Woodpeckers that renested after initial nest failure due to disturbance were as successful and productive as sites that nested only once (*i.e.*, were not disturbed). Disturbed and undisturbed nest sites did not

differ significantly in the number of eggs, nestlings, or successful fledglings per nest. Table 4.7-1 summarizes the success and productivity results from the study.

Table 4.7-1 Summary of Red-cockaded Woodpecker Nesting Data

Condition	Disturbed Nest Site	Undisturbed Nest Site
Successful sites	42	23
Total sites	48	25
Average eggs per nest	3.47	3.56
Average nestlings per nest	2.27	2.28
Average young/occupied per nest	1.84	1.80
Average young/successful per nest	2.14	1.96

Source: USACE 2000.

As indicated in Table 4.3-11, the SEL for a T-6 aircraft directly overhead on a MTR at 500 feet AGL would be 86 dBA, nearly the same as the noise level at that distance and the condition in which no Red-cockaded Woodpeckers were observed flushing the nest in the USACE 2000 study (*i.e.*, 85 dBA). As mentioned in Section 2.3.1, aircraft altitude on the MTRs would be no lower than 500 feet AGL. As indicated in Tables 3.3-12 and 4.3-19, the SEL at 500 feet for the T-1 and T-38 aircraft would be 102 and 96 dBA, respectively. T-1 MTR use would be 0.25 sortie operations per day on a specific route based on five days of flying per week (see Table 2.3-4). T-38 MTR operations on the route for the same condition would be 2.2 sortie operations per day. Thus, the route would be flown infrequently and overflight noise would be less as the slant range to the nest increases. For the reasons in this and preceding paragraphs, it is not likely that MTR operations by Columbus AFB aircraft would adversely affect Red-cockaded Woodpeckers.

Specific studies involving bald eagles and peregrine falcons have shown both to tolerate low-flying jets without short- or long-term behavioral or reproductive impacts (Platt 1977; Ellis, 1981; Grubb and Bowerman 1997). As mentioned in Section 2.3.1, aircraft altitude on the MTRs would be no lower than 500 feet AGL. This altitude would provide the USFWS-recommended separation of 500 feet vertically and 1,500 feet horizontally between bald eagle nest sites and the aircraft (USFWS 2003). (The USFWS letter containing the recommendation is in Appendix C.) Thus, MTR operations by Columbus AFB aircraft likely would not adversely affect the bald eagle.

Air Force Instruction 11-202 and Federal Aviation Regulations recommend all aircraft maintain a minimum altitude of 2,000 feet AGL over National Wildlife Refuges, National Parks, and Forest Service lands in order to minimize aircraft-wildlife conflicts including BASH. Operating procedures for T-1, T-6, and T-38 aircraft mention avoiding overflight of known sensitive areas. These flight restrictions would be continued for the proposed operation of T-1, T-6, and T-38 aircraft at Columbus AFB. Use of the MTRs, including associated noise would not adversely affect listed wildlife species.

4.7.2 No Action Alternative

The types of aircraft operating on the MTRs, as well as the level of operations, would continue at the baseline condition. The potential for an adverse effect to plant or animal species would remain low.

4.7.3 Mitigation

No adverse biological effects would be anticipated. Therefore, no mitigation would be required.

4.7.4 Cumulative Impacts

T-1 MTR use would range between 0.25 and 3.0 sortie operations per day based on five days of flying per week and depending on the specific route (see Table 2.5-4). T-38 MTR operations on any of the routes for the same condition would be 1.5 sortie operations per day. T-6 use would be 3.35 or 10.1 sortie operations per day, depending on the route. The discussion, analyses, and conclusions for the Proposed Action apply. No cumulative biological effects would be anticipated.

4.8 HAZARDOUS MATERIALS AND WASTES

Impacts to hazardous materials and waste management would be considered significant if the federal action resulted in noncompliance with applicable federal and Mississippi environmental quality regulations, caused waste generation that could not be accommodated by current Columbus AFB waste management capacities, or interfered with the IRP.

4.8.1 Proposed Action

Hazardous Materials

Products containing hazardous materials would be procured and used during construction activities. Contractors would be required to use and store hazardous materials in accordance with all federal, state, and local regulations.

Since the number of aircraft assigned to Columbus AFB would decrease by seven aircraft and because the T-6 and T-37 are similar size aircraft, it is anticipated that no new hazardous material types would be needed and that hazardous material procurement could decrease by approximately seven percent. During aircraft maintenance operations, release of hazardous materials may potentially occur where materials are stored, during transport, and during use or application. The existing hazardous materials handling processes and procedures could accommodate the activities associated with T-6 operation and maintenance.

Hazardous materials would be procured and used at the COMBS facility. However, it is not anticipated that any hazardous materials not currently used at other aircraft maintenance facilities would be used at the COMBS facility. The existing hazardous materials management procedures would accommodate the activities at the COMBS facility.

Hazardous Wastes

Hazardous wastes could be generated during construction activities. It is anticipated that the quantity of hazardous wastes generated during the construction period would be negligible. The construction contractor would maintain records of all waste determinations, including appropriate results of analysis performed, substances and sample locations, date and time of collection, and other pertinent data as required by 40 CFR Part 280, Section 74 and 40 CFR, Part 262, Subpart D.

In the event of a spill of any amount or type of hazardous material or waste (petroleum products included), the construction contractor would take immediate action to contain and clean up the spill. Contractor spill clean up personnel would be trained and certified to perform spill clean up. The contractor would be responsible for proper characterization and disposal of any waste and clean up materials generated. All waste and associated clean up material would be removed from the project site and transported and/or stored in accordance with regulations until final disposal.

Hazardous wastes generated by T-6 operation and maintenance activities would be similar in character and volume with existing waste streams at Columbus AFB. The primary waste producing processes would continue to include aircraft parts cleaning, fluid changes for routine aircraft and vehicle maintenance, aircraft corrosion control facility, and infrastructure maintenance. Hazardous waste would be handled in accordance with federal, state, and local laws and regulations, including RCRA requirements for waste management and Department of Transportation requirements for waste transport.

Since the number of aircraft assigned to Columbus AFB would decrease by seven aircraft and because the T-6 and T-37 are similar sized aircraft, it is anticipated the volume of hazardous wastes generated under the Proposed Action would decrease by approximately seven percent when compared to the baseline. Additional storage capacity should not be needed at any of the HW satellite accumulation points or the accumulation site at Bldg. 267. The Base would continue to be a large quantity generator. No impact would be anticipated for the capacity at any of the tanks used for recyclable oils and fuels. If needed, Columbus AFB would revise its existing HWMP to incorporate the activities of the Proposed Action. The Plan would be revised to reflect any additional procedures necessary to achieve and maintain regulatory compliance regarding accumulation, transportation, and disposal of hazardous waste.

Hazardous wastes would be generated at the COMBS facility. However, it is not anticipated that any new hazardous waste streams would be generated. The existing hazardous waste management procedures would accommodate the activities at the COMBS facility.

4.8.2 No Action Alternative

The mission of Columbus AFB would not change under the No Action Alternative. Thus, the Base would continue to accomplish the activities that occur under the current condition. It is anticipated that the volumes of hazardous materials procured and hazardous waste generated would remain current levels. The existing processes and procedures, which accommodate current activities, would continue to be used to manage hazardous materials and hazardous wastes.

4.8.3 Mitigation

No mitigation would be required.

4.8.4 Cumulative Impacts

Hazardous Materials

Products containing hazardous materials would be procured and used during construction activities associated with the other actions. As with the Proposed Action,

contractors at the other project sites would be required to use and store hazardous materials in accordance with all federal, state, and local regulations. Hazardous materials would be procured and used for operations at some of the other action facilities after construction is completed. However, it is not anticipated that any hazardous materials not currently used at existing facilities would be used at the replacement facilities. The existing hazardous materials management procedures would accommodate the cumulative condition construction and facility operation.

There would be no change in the volumes or types of hazardous materials used to support T-1 or T-38 aircraft maintenance operations. The discussion and analysis for the T-6 under the Proposed Action applies. The existing hazardous materials management procedures would accommodate the cumulative condition aircraft operations and maintenance activities.

Hazardous Wastes

As with the Proposed Action, hazardous wastes would be generated from construction activities as well as operation of the facilities. The discussion and analysis for the Proposed Action applies to the cumulative condition. The existing hazardous wastes management procedures would accommodate the cumulative construction and facility operation conditions.

There would be no change in the numbers of T-1 or T-38 aircraft under the other action. Therefore, the volumes or types of hazardous wastes generated by T-1 or T-38 aircraft maintenance operations would be similar to the current condition. The discussion and analysis for the T-6 under the Proposed Action applies. The existing hazardous waste management procedures would accommodate the cumulative condition aircraft operations and maintenance activities.

CHAPTER 5

LIST OF PREPARERS

Name	Degree	Resource	Years of Experience
Kirk, Justin	B.S., Agricultural Development	Biological Resources	5
Lair, Sanaan	B.S., Civil Engineering M.S., Environmental Engineering	Air Quality; Infrastructure and Utilities	2
Miller, Dorothy	B.S., Mathematics	Aircraft Noise Modeling	29
Wallin, John	B.A., Biology M.A., Management	Project Manager; Airspace and Airfield Operations, BASH, and Aircraft Safety; Noise; Land Use	32
Wooten, R.C., Ph.D.	Ph.D., Ecology and Biology	Technical Manager	34

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CHAPTER 6 PERSONS AND AGENCIES CONSULTED

The following persons and agencies were consulted during preparation of this EA.
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Sloan, Jimmy (Manager)

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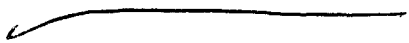
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APPENDIX A

Air Force Form 813

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REQUEST FOR ENVIRONMENTAL IMPACT ANALYSIS			Report Control Symbol RCS:	
INSTRUCTIONS <i>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).</i>				
SECTION I - PROPONENT INFORMATION				
1. TO (Environmental Planning Function) 14 CES/CEV	2. FROM (Proponent organization and functional address symbol) AETC/XPRU, Randolph AFB, TX 78150	2a. TELEPHONE NO. DSN 487-4555		
3. TITLE OF PROPOSED ACTION T-6 Basing and Operation at Columbus AFB, Mississippi				
4. PURPOSE AND NEED FOR ACTION (identify decision to be made and need date) see attached				
5. DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES (DOPAA) (Provide sufficient details for evaluation of the total action.) see attached				
6. PROPONENT APPROVAL (Name & Grade) Lt. Col. Bud Brooks	6a. SIGNATURE 	6b. DATE 30 June 2003		
SECTION II - PRELIMINARY ENVIRONMENTAL SURVEY (Check appropriate box and describe potential environmental effects including cumulative effect.) (+ = positive effect; 0 = no effect; - = adverse effect; U = unknown effect)			+	0
7. AIR INSTALLATION COMPATIBLE USE ZONE/LAND USE (Noise, accident potential, encroachment, etc.)				X
8. AIR QUALITY (Emissions, attainment status, state implementation plan, etc.)				X
9. WATER RESOURCES (Quality, quantity, source, etc.)			X	
10. SAFETY AND OCCUPATIONAL HEALTH (Asbestos/radiation/chemical exposure, explosives safety quantity-distance, etc.)			X	
11. HAZARDOUS MATERIALS/WASTE (Use/storage/generation, solid waste, etc.)				X
12. BIOLOGICAL RESOURCES (Wetlands/floodplains, flora, fauna, etc.)				X
13. CULTURAL RESOURCES (Native American burial sites, archaeological, historical, etc.)				X
14. GEOLOGY AND SOILS (Topography, minerals, geothermal, Installation Restoration Program, seismicity, etc.)				X
15. SOCIOECONOMIC (Employment/population projections, school and local fiscal impacts, etc.)			X	
16. OTHER (Potential Impacts not addressed above.)				X
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				
19. ENVIRONMENTAL PLANNING FUNCTION CERTIFICATION (Name & Grade)		19a. SIGNATURE		19b. DATE

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

4.1 Purpose of the Action

The purpose of the action is to replace the T-37 aircraft used in the initial, primary phase of Specialized Undergraduate Pilot Training (SUPT) conducted at Columbus AFB, Mississippi with the higher performance and more modern T-6 aircraft.

4.2 Need for the Action

The Air Force has determined a need to replace the T-37 aircraft, which has reached the end of its useful life cycle. The aircraft has shortcomings in performance and design, training effectiveness, safety, and supportability. Production of the aircraft began in 1952 and ended in 1968. As aircraft are lost to attrition, they cannot be replaced. The T-37 has been used as the primary training aircraft in Air Force pilot training since the 1950s. The T-6 was competitively procured to be the aircraft used in the primary phase of SUPT.

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

5.1 Background

Through a preliminary alternatives formulation and elimination process, the Air Education and Training Command (AETC) determined that other bases would not be viable alternatives for basing and operating the T-6 aircraft. The purpose of the action is to replace an aging fleet of aircraft used as the primary training aircraft in the SUPT program conducted at three specific AETC bases. Since the actions to base and operate T-6s at Laughlin AFB, Texas and Vance AFB, Oklahoma, the two other bases that conduct SUPT, are under way, there are no alternatives other than to replace the Columbus AFB T-37 aircraft with T-6s.

5.2 Proposed Action

The Proposed Action is to convert from the T-37 to the T-6 at Columbus AFB. The conversion is expected to begin with facilities construction in fiscal year 2005 (FY05). The first aircraft would arrive in FY06, with the last aircraft being delivered in FY11. The basing and operation plan keys on a gradual transition of aircraft, with the T-37s being removed from the base at about the same rate as T-6s arrive. Columbus AFB currently has 96 T-37 aircraft. The conversion would place as many as 89 T-6s at the base. There would be an estimated six-month overlap from the initial T-6 delivery until the departure of the first T-37. Beginning with the initial departure, T-37 aircraft would depart on a one-for-one basis with T-6 arrivals. Upon receipt of the last T-6, all T-37s would be relocated.

5.2.1 Personnel

Military personnel requirements would remain at current levels. The T-6 instructor pilot changeover would continue at the same rate as that experienced for the T-37. As with the T-37, government civilian personnel, supported by contractor personnel, would perform T-6 aircraft maintenance activities. The total number of T-6 maintenance personnel would be nearly the same as that currently supporting the T-37.

Pilot production during and after the conversion is complete would be similar to current levels. Thus, the combined, total, SUPT average daily student load for Columbus AFB would be about 487 students.

5.2.2 Airfield Operations

Flying training operations associated with T-6 training at Columbus AFB would use the base's airfield facilities, the Shuqualak Auxiliary Airfield, and the nearby Golden Triangle Regional Airport (GTRA). The traffic pattern dimensions and altitudes for T-6 operations at Columbus AFB and Shuqualak Auxiliary Airfield would be the same as the T-37. Because the T-6 is a single engine aircraft, aircrews would practice emergency landing patterns at Columbus AFB, Shuqualak Auxiliary Airfield, and the GTRA. The sortie duration, the number and types of training events per sortie type (i.e., contact, instrument, formation, and navigation), and the training sortie profile for the T-6 syllabus are very similar to the T-37 syllabus. Therefore, the T-6 would accomplish approximately the same number of airfield and sortie operations currently flown by the T-37 for pilot production.

5.2.3 Airspace Operations

The military operations areas (MOAs) and military training routes (MTRs) used by Columbus AFB aircrews for T-37 training would be used for T-6 training. The number of T-6 sorties within the MOAs and on the MTRs is anticipated to be the same as that accomplished by T-37 aircraft.

5.2.4 Facility Use and Construction

Several existing facilities would be used to support the T-6 aircraft during and after the conversion. One facility would be constructed beginning in 2005. A 12,000 square foot Contractor Operated and Managed Base Supply facility would be constructed in 2005 and used for storage of T-6 aircraft spare parts and equipment, shipping and receiving of material, engine uncrating, removal and application of preservation material, and for quick engine change kit removal and installation.

5.3 DECISION-MAKER AND DECISION TO BE MADE

The chairperson of the 14 Flying Training Wing Environmental Protection Committee is the decision-maker. The decision-maker, based on the analyses in the environmental assessment that will be prepared for the action, will decide if there are significant environmental impacts associated with the proposed aircraft conversion. Based on review of the analyses, the decision-maker will either sign a Finding of No Significant Impact or recommend the analysis proceed to an environmental impact statement.

5.4 ANTICIPATED ENVIRONMENTAL ISSUES

- Noise exposure from aircraft operations at the airfields and along the MTRs
- Hazardous materials and hazardous waste streams from aircraft maintenance and construction activities
- Air emissions from aircraft operations and construction activities

5.5 ALTERNATIVES

5.5.1 No Action Alternative

The Air Force would continue to use the T-37 as the primary training aircraft in the SUPT program at Columbus AFB. The number of military, government civilian, and contractor personnel at the base, as well as the average daily student load would remain at approximately the current levels associated with maximum SUPT pilot production at the base. Likewise, T-37 operations would continue at the baseline levels. Columbus AFB T-37 aircrews would continue to use the airspaces and airfields currently used for flying training.

5.5.2 Other Alternatives

While other potential alternatives were considered in the conceptual phase for this action, only the No Action Alternative is viable (see 5.1 above).

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APPENDIX B

Military Training Route Data

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B-1 IR-066

IR-066 is an eight-segment route beginning east of Lewis Smith Lake in north central Alabama, extending north into Tennessee below the Columbus 2 and Columbus 4 MOAs, before turning southwest and south and terminating under the northern portion of the Columbus 1 MOA. Table B-1-1 lists the route structure data and Table B-1-2 presents the federal airways and MTRs that intersect the route, as well as the airports within the corridor. Figure B-1 depicts IR-066.

Table B-1-1 IR-066

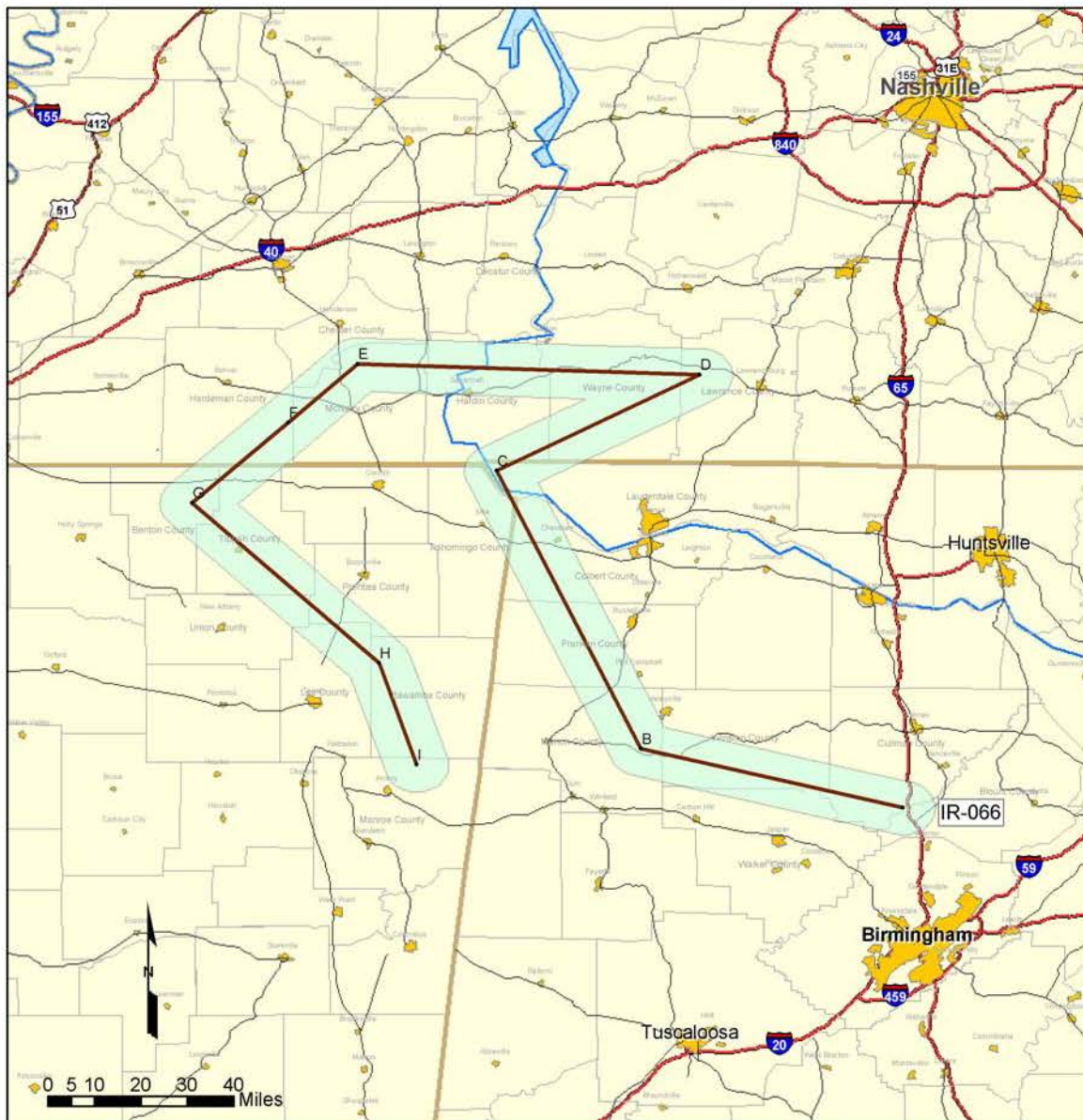
Originating/Scheduling Activity:			14 OSS/OSOR, Columbus AFB, MS		
Hours of Operation:			sunrise to sunset, Monday through Friday		
Route Description					
Point	Altitude Data (100 FT)	Route Width (NM)	Length (NM)	Latitude	Longitude
A (Entry Point)				33° 56.00' N	86° 53.00' W
B	30 MSL - 50 MSL	5/LT - 5/RT	41.5	34° 07.00' N	87° 42.00' W
C	15 AGL - 30/50 MSL	5/LT - 5/RT	56.5	34° 59.00' N	88° 09.00' W
D	01 AGL - 30 MSL	5/LT - 5/RT	36.0	35° 17.00' N	87° 31.00' W
E	01 AGL - 30 MSL	5/LT - 5/RT	52.0	35° 19.00' N	88° 35.00' W
F	01 AGL - 30 MSL	5/LT - 5/RT	15.0	35° 08.00' N	88° 48.00' W
G	01 AGL - 30 MSL	5/LT - 5/RT	21.0	34° 53.00' N	89° 06.00' W
H	01 AGL - 30 MSL	5/LT - 5/RT	42.0	34° 23.00' N	88° 31.00' W
I (Exit Point)	01 AGL - 30 MSL	5/LT - 5/RT	20.0	34° 04.00' N	88° 24.00' W
Total Route Length:			284.0		
LT=NM distance left of route center line; RT=NM distance right of route center line					
Source: DoD 2002					

Table B-1-2 IR-066

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V49	IR-067	Walker Co - Belvill*
V7	VR-1050	Double Springs Winston Co*
V159	VR-1051	Posey
V54	VR-1016	Russellville
	VR-1014	Iuka*
	VR-1051	Hassell
	VR-1050	Savannah-Hardin*
	VR-1016	Sibley *
		Ripley
		Booneville Baldwin
		Fulton-Itawamba*
		Lamb
		Mantachie

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable

Figure B-1 IR-066



B-2 IR-067

IR-067 is an eight-segment route beginning east of Lewis Smith Lake in north central Alabama and extending north under the Columbus 2 and Columbus 4 MOAs to the Tennessee/Kentucky state line before turning west and south. The route terminates 40 NM southeast of the City of Memphis, Tennessee. The MTR is flown to develop low-altitude navigation skills and formation maneuvering procedures. Figure B-2 depicts IR-067.

Table B-2-1 IR-067

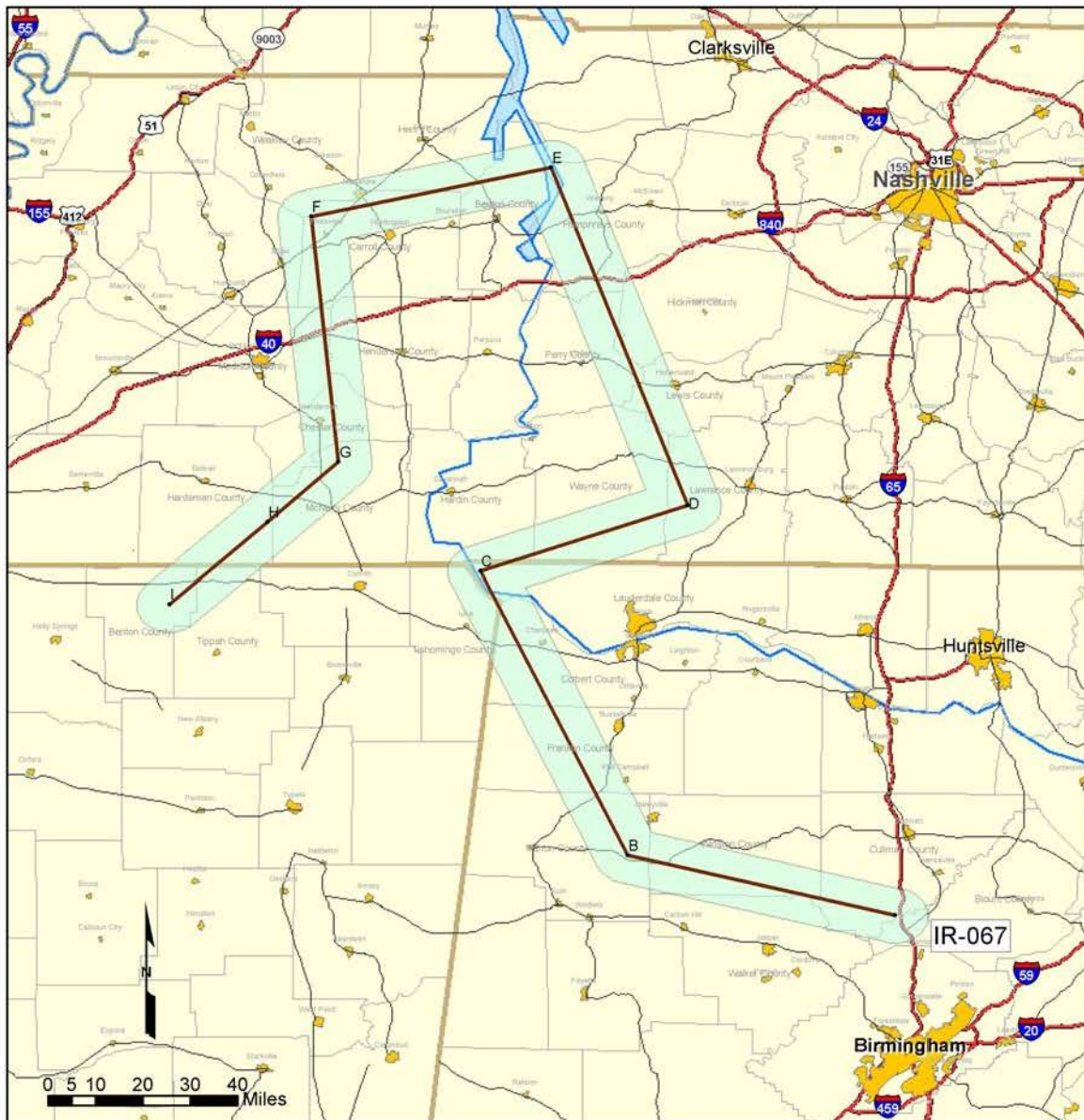
Originating/Scheduling Activity:			14 OSS/OsOR, Columbus AFB, MS		
Hours of Operation:			sunrise to sunset, Monday through Friday		
Route Description					
Point	Altitude Data (100 FT)	Route Width (NM)	Length (NM)	Latitude	Longitude
A (Entry Point)	As Assign			33° 56.00' N	86° 53.00' W
B	15 AGL - 30/50 MSL	5/LT - 5/RT	42.5	34° 07.00' N	87° 42.00' W
C	01 AGL - 30 MSL	5/LT - 5/RT	57.0	34° 59.00' N	88° 09.00' W
D	01 AGL - 30 MSL	5/LT - 5/RT	35.5	35° 17.00' N	87° 31.00' W
E	01 AGL - 30 MSL	5/LT - 5/RT	60.0	36° 13.00' N	87° 56.00' W
F	01 AGL - 30 MSL	5/LT - 5/RT	36.0	36° 04.00' N	88° 40.00' W
G	01 AGL - 30 MSL	5/LT - 5/RT	45.0	35° 19.00' N	88° 35.00' W
H	01 AGL - 30 MSL	5/LT - 5/RT	15.0	35° 08.00' N	88° 48.00' W
I(Exit Point)	01 AGL - 30 MSL	5/LT - 5/RT	21.0	34° 53.00' N	89° 06.00' W
Total Route Length:			312.0		
LT=NM distance left of route center line; RT=NM distance right of route center line Source: DoD 2002					

Table B-2-2 IR-067

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 49	IR-066	Walker Co - Belvill*
V 7	VR-1050	Double Springs Winston Co *
V 159	VR-1051	Posey
V 54	VR-1016	Russellville
V 16-94	VR-1014	Iuka *
V 124	IR-077/078	Palmer Napier Lake
V 140		Baker
		Humphreys Co *
		Houston Co *
		Carroll Co
		Southfork
		Sibley *

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable.

Figure B-2 IR-067



B-3 IR-068

IR-068 is a four-segment route beginning 10 miles northwest of Greenwood, Mississippi, and extending northwest along the Mississippi River to the City of Helena, Arkansas, then to the southeast, terminating under the southwest corner of Columbus 3 MOA. Table B-3-1 lists the route structure data and Table B-3-2 presents the federal airways and MTRs that intersect the route, as well as the airports within the corridor. Figure B-3 depicts IR-068.

Table B-3-1 IR-068

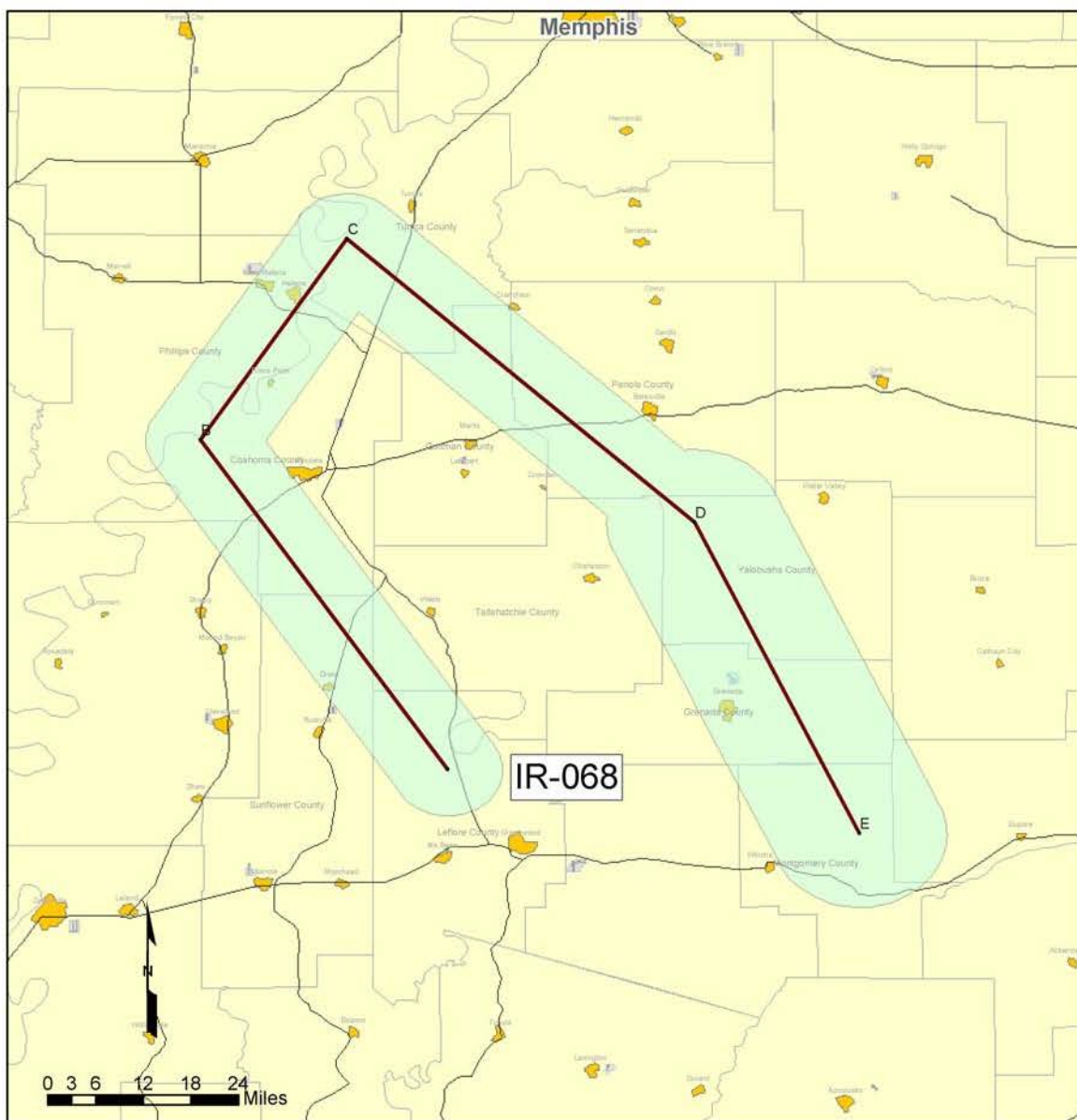
Originating/Scheduling Activity: 14 OSS/OSOR, Columbus AFB, MS					
Hours of Operation: sunrise to sunset, Monday through Friday					
Route Description					
<i>Point</i>	<i>Altitude Data (100 FT)</i>	<i>Route Width (NM)</i>	<i>Length (NM)</i>	<i>Latitude</i>	<i>Longitude</i>
A (ENTRY POINT)	30 MSL			33° 40.00' N	90° 19.00' W
B	01 AGL - 30 MSL	5/LT - 5/RT	42.0	34° 16.00' N	90° 46.00' W
C	01 AGL - 30 MSL	5/LT - 5/RT	25.5	34° 38.00' N	90° 30.00' W
D	01 AGL - 30 MSL	5/LT - 5/RT	44.0	34° 07.00' N	89° 52.00' W
E (Exit Point)	01 AGL - 40 MSL	5/LT - 5/RT	37.0	33° 33.00' N	89° 34.00' W
Total Route Length:			148.5		
LT=NM distance left of route center line; RT=NM distance right of route center line					
Source: DoD 2002					

Table B-3-2 IR-068

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 397	IR-070	Ruleville-Drew
V 9	IR-091	Flying Y *
V 94	VR-1051	Thompson Robbins *
V 16		Tunica *
V 11		Water Valley *
V 535		Burney Farms
		Grenada
		Spencer *
		Winona Montgomery *

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable

Figure B-3 IR-068



B-4 IR-070

IR-070 is an eight-segment route beginning west of Yazoo, Mississippi, proceeding across northern Louisiana, and then north into Arkansas toward Pine Bluff. From a point south of Pine Bluff, the route turns east and terminates northwest of the City of Greenwood, Mississippi. Table B-4-1 lists the route structure data and Table B-4-2 presents the federal airways and MTRs that intersect the route as well as the airports within the corridor. Figure B-4 depicts IR-070.

Table B-4-1 IR-070

Originating/Scheduling Activity:			14 OSS/OSOR, Columbus AFB, MS		
Hours of Operation: normally 8:00 a.m.- 9:00 p.m. daily (use between 9:00 p.m.- 8:00 a.m. prohibited)					
Route Description					
<i>Point</i>	<i>Altitude Data (100 FT)</i>	<i>Route Width (NM)</i>	<i>Length (NM)</i>	<i>Latitude</i>	<i>Longitude</i>
A (Entry Point)				32° 48.00' N	90° 37.00' W
B	05 AGL - 30 MSL	5/LT - 5/RT	35.5	33° 09.00' N	91° 11.00' W
C	05 AGL - 30 MSL	5/LT - 5/RT	60.0	32° 53.00' N	92° 20.00' W
D	05 AGL - 30 MSL	5/LT - 5/RT	34.0	33° 27.00' N	92° 20.00' W
E	05 AGL - 50 MSL	5/LT - 5/RT	17.0	33° 44.00' N	92° 20.00' W
F	05 AGL - 50 MSL	5/LT - 5/RT	4.5	33° 45.20' N	92° 15.00' W
G	05 AGL - 30 MSL	5/LT - 5/RT	71.0	34° 02.00' N	90° 52.00' W
H	05 AGL - 30 MSL	5/LT - 5/RT	16.0	33° 59.00' N	90° 33.00' W
I (Exit Point)	05 AGL - 40 MSL	5/LT - 5/RT	22.5	33° 40.00' N	90° 19.00' W
Total Route Length:			260.5		
LT=NM distance left of route center line; RT=NM distance right of route center line Source: DoD 2002					

Table B-4-2 IR-070

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 397	IR-068	Nicks
V 94	VR-1032	Rollang
V 71		Wade
V 278		Tonnar
V 69		Lewis
V 74		Eifling
V 9		Lake Washington
		Mayersville *
		Baker
		Johnson
		Travis
		Hampton
		Hopkins-Fordyce *
		Star City
		Billy Free Municipal
		Reedville
		Watts
		Christmas
		Flying Y *
		Ruleville-Drew

* *Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable*

Figure B-4 IR-070



B-5 IR-091

IR-091 is a six-segment route beginning 25 NM west of Columbus AFB. The route follows the Columbus 3 MOA boundary in a counter clockwise direction. The route terminates at a point approximately 30 NM southwest of the City of Tupelo, Mississippi. Table B-5-1 lists the route structure data and Table B-5-2 presents the federal airways and MTRs that intersect the route as well as the airports within the corridor. Figure B-5 depicts IR-091.

Table B-5-1 IR-091

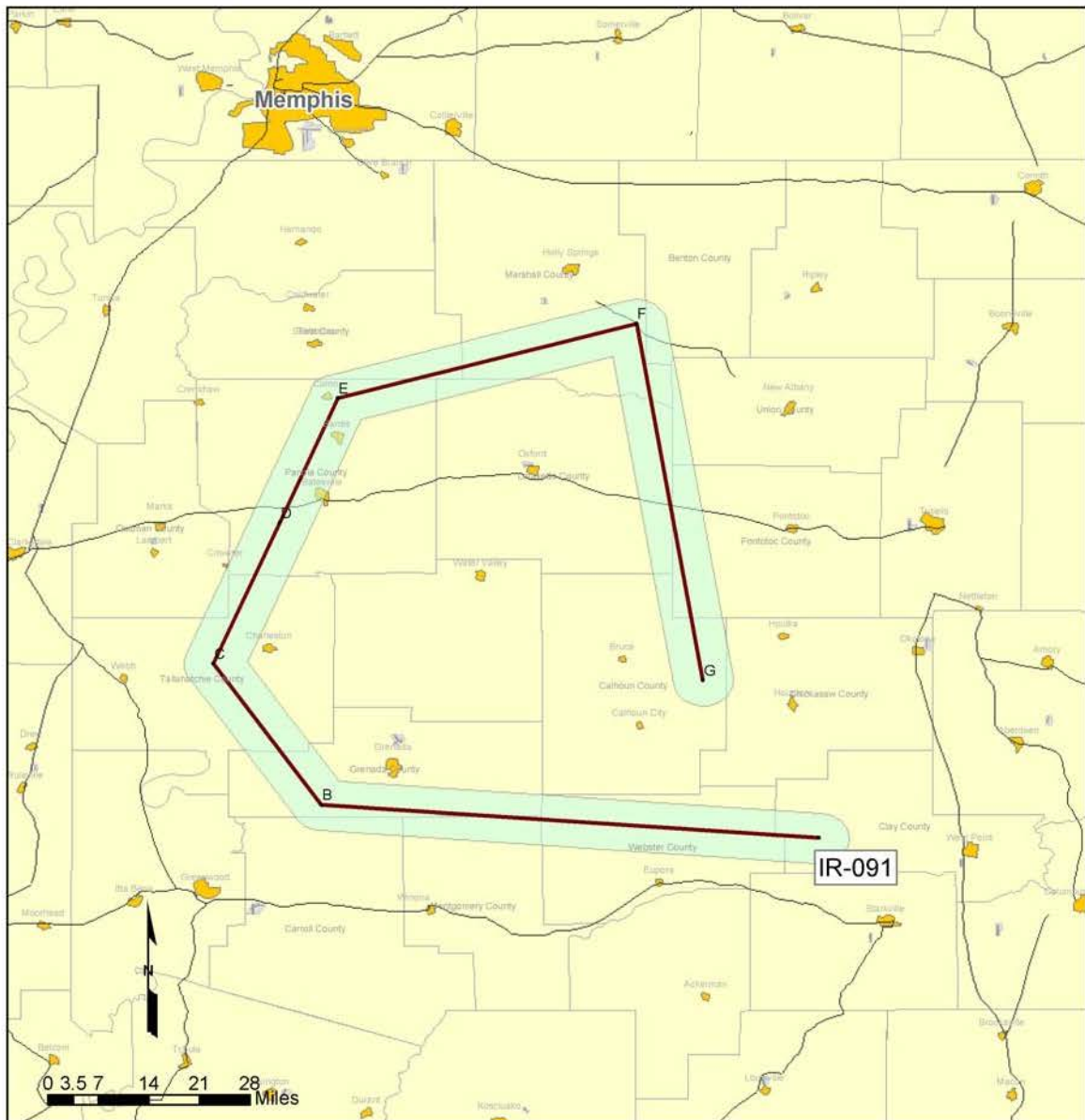
Originating/Scheduling Activity:			14 OSS/OSOR, Columbus AFB, MS		
Hours of Operation: sunrise to sunset, Monday through Friday					
Route Description					
Point	Altitude Data (100 FT)	Route Width (NM)	Length (NM)	Latitude	Longitude
A (Entry Point)				33° 38.00' N	88° 57.00' W
B	Sfc to 40 MSL	3/LT - 3/RT	50.0	33° 42.00' N	89° 57.00' W
C	Sfc to 40 MSL	3/LT - 3/RT	20.0	33° 59.00' N	90° 10.00' W
D	Sfc to 40 MSL	3/LT - 3/RT	18.0	34° 16.00' N	90° 02.00' W
E	Sfc to 40 MSL	3/LT - 3/RT	16.5	34° 31.00' N	89° 55.00' W
F	Sfc to 40 MSL	3/LT - 3/RT	31.0	34° 40.00' N	89° 19.00' W
G (Exit Point)	Sfc to 40 MSL	3/LT - 3/RT	43.0	33° 57.00' N	89° 11.00' W
Total Route Length:			178.5		
LT=NM distance left of route center line; RT=NM distance right of route center line Source: DoD 2002					

Table B-5-2 IR-091

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 535	IR-068	Charleston *
V 11	VR-1051	Panola *
V 94	SR-73	
V 159	SR-74	

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable

Figure B-5 IR-091



B-6 VR-1014

VR-1014 is a nine-segment route that starts 20 NM southeast of Columbus AFB. The route proceeds east to Birmingham, Alabama, then turns north, northwest across Lewis Smith Lake to a point northeast of Haleyville. The route proceeds west under Columbus 2 MOA and terminates north of Amery, Mississippi, under the Columbus 1 MOA. Table B-6-1 lists the route structure data and Table B-6-2 presents the federal airways and MTRs that intersect the route as well as the airports within the corridor. Figure B-6 depicts VR-1014.

Table B-6-1 VR-1014

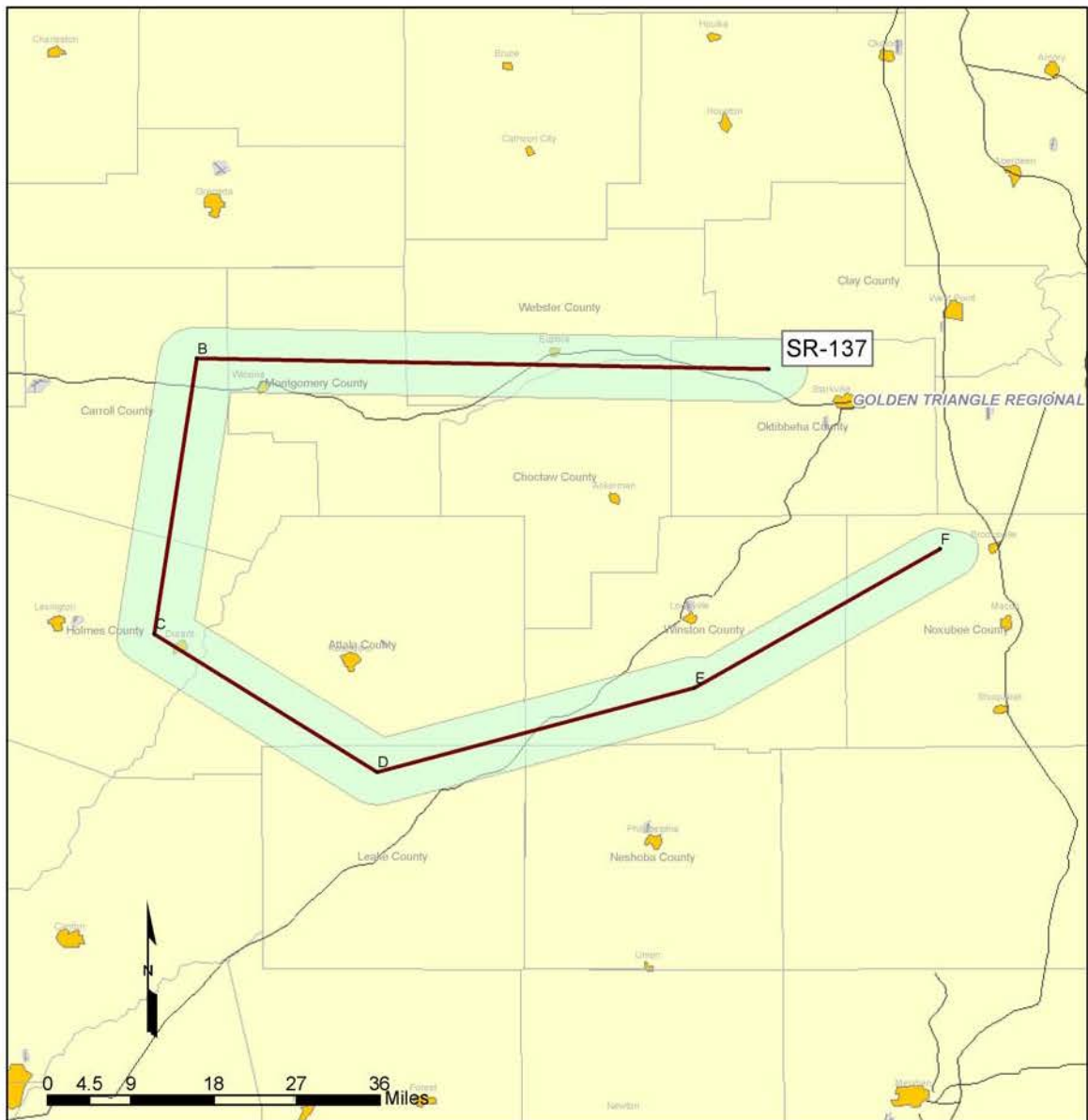
Originating/Scheduling Activity: 14 OSS/OSOR, Columbus AFB, MS					
Hours of Operation: sunrise to sunset, Monday through Friday					
Route Description					
<i>Point</i>	<i>Altitude Data (100 FT)</i>	<i>Route Width (NM)</i>	<i>Length (NM)</i>	<i>Latitude</i>	<i>Longitude</i>
A (Entry Point)				33° 28.50' N	88° 07.00' W
B	5 AGL - 15 AGL	3/LT - 3/RT	18.0	33° 24.00' N	87° 45.50' W
C	5 AGL - 15 AGL	3/LT - 3/RT	18.0	33° 25.00' N	87° 23.50' W
D	5 AGL - 15 AGL	3/LT - 3/RT	12.0	33° 26.00' N	87° 09.00' W
E	5 AGL - 15 AGL	3/LT - 3/RT	28.5	33° 53.50' N	86° 59.00' W
F	5 AGL - 15 AGL	3/LT - 3/RT	15.0	34° 05.50' N	87° 10.50' W
G	5 AGL - 15 AGL	3/LT - 3/RT	21.5	34° 23.00' N	87° 25.00' W
H	5 AGL - 15 AGL	3/LT - 3/RT	30.0	34° 22.00' N	88° 02.00' W
I	5 AGL - 15 AGL	3/LT - 3/RT	19.0	34° 11.50' N	88° 21.00' W
Total Route Length:			175.0		
LT=NM distance left of route center line; RT=NM distance right of route center line Source: DoD 2002					

Table B-6-2 VR-1014

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 245	VR-1050	North Pickens*
V 417	VR-1051	Lake Tuscaloosa* (Seaplane base)
V 278	IR-066	Double Springs Winston Co*
V 159	IR-067	Addison Muni*
V 7	VR-1016	Henson*
		Russellville*
		Rye*

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable

Figure B-6 VR-1014



B-7 VR-1050

VR-1050 is a 10-segment route beginning east of Lewis Smith Lake in north-central Alabama and extends north under the Columbus 2 and Columbus 4 MOAs into southern Tennessee before turning west and south. The south bound route passes under the Columbus 1 MOA, turns southeast toward Tuscaloosa, Alabama, and terminates 20 NM west of downtown Birmingham, Alabama. Table B-7-1 lists the route structure data, and Table B-7-2 presents the federal airways and MTRs that intersect the route, as well as the airports within the corridor. Figure B-7 depicts VR-1050.

Table B-7-1 VR-1050

Originating/Scheduling Activity:			14 OSS/OSOR, Columbus AFB, MS		
Hours of Operation: 7:00 a.m.-11:00 p.m. daily					
Route Description					
Point	Altitude Data (100 FT)	Route Width (NM)	Length (NM)	Latitude	Longitude
A (Entry Point)				33° 56.00' N	86° 53.00' W
B	15 AGL	5/LT - 5/RT	42.5	34° 07.00' N	87° 42.00' W
C	01 AGL - 15 AGL	5/LT - 5/RT	57.0	34° 59.00' N	88° 09.00' W
D	01 AGL - 15 AGL	5/LT - 5/RT	36.0	35° 17.00' N	87° 31.00' W
E	01 AGL - 15 AGL	5/LT - 5/RT	52.5	35° 19.00' N	88° 35.00' W
F	01 AGL - 15 AGL	5/LT - 5/RT	15.5	35° 08.00' N	88° 48.00' W
G	01 AGL - 15 AGL	5/LT - 5/RT	39.0	34° 29.00' N	88° 51.00' W
H	01 AGL - 15 AGL	5/LT - 5/RT	17.5	34° 23.00' N	88° 31.00' W
I	01 AGL - 15 AGL	5/LT - 5/RT	30.5	33° 54.00' N	88° 20.00' W
J	01 AGL - 15 AGL	5/LT - 5/RT	38.0	33° 27.00' N	87° 48.00' W
K (Exit Point)	01 AGL - 15 AGL	5/LT - 5/RT	32.5	33° 38.00' N	87° 12.00' W
Total Route Length:			361.0		
LT=NM distance left of route center line; RT=NM distance right of route center line Source: DoD 2002					

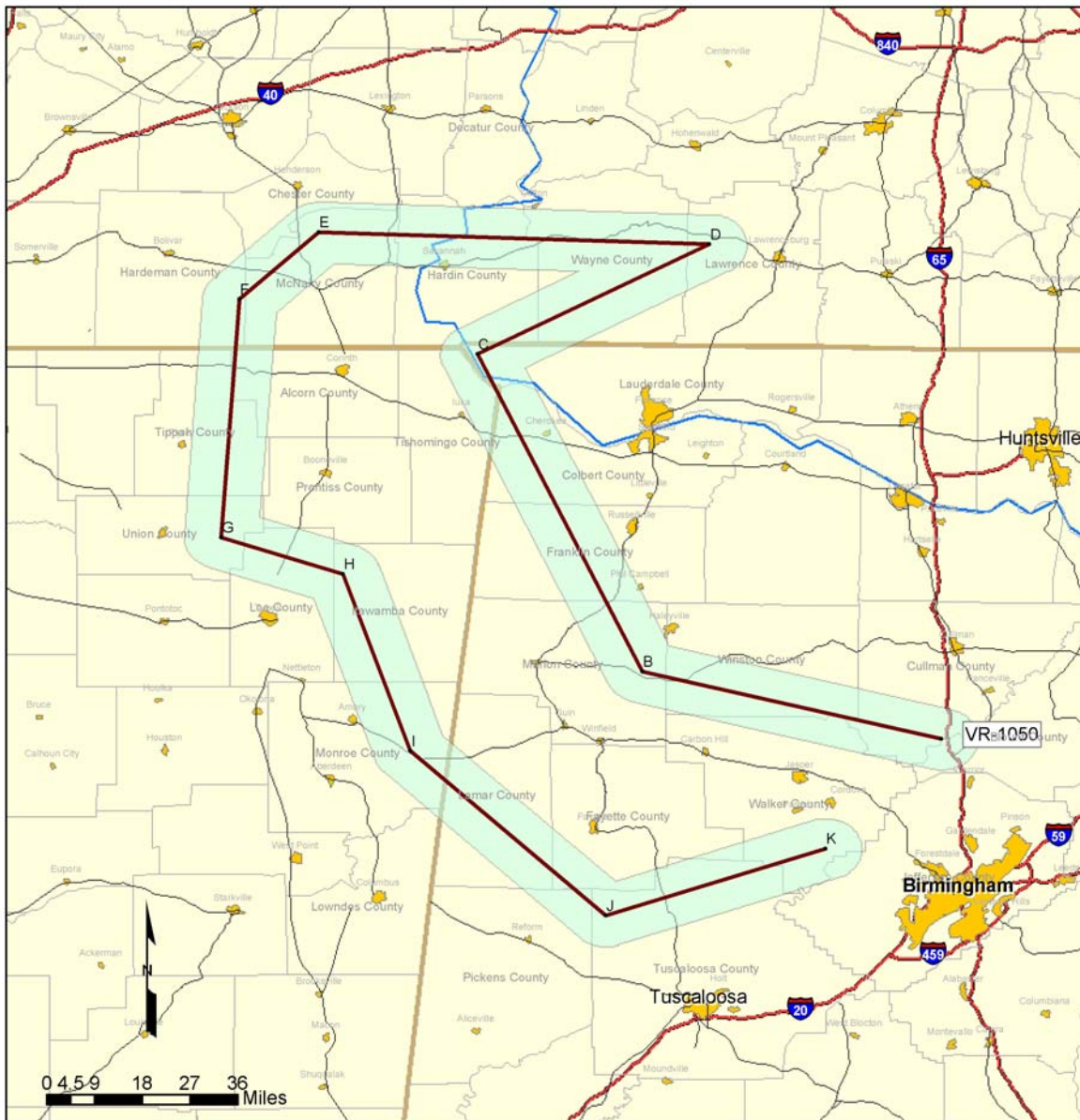
Table B-7-2 VR-1050

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 49	IR-066	Walker Co – Belvill*
V 7	IR-067	Double Springs Winston Co *
V 159	IR-1051	Posey
V 54	VR-1016	Russellville
V 278	VR-1014	Iuka *
	VR-1051	Hassell
		Savannah-Hardin *
		Sibley *
		Ripley

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
		Fulton-Itawamba *
		Lamb
		Mantachie
		Rye
		Lamar Co

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable

Figure B-7 VR-1050



B-8 VR-1051

VR-1051 is an 11-segment route that starts east of Lewis Smith Lake in north central Alabama and extends north under the Columbus 2 and Columbus 4 MOAs to the Tennessee/Kentucky state line before turning west and south. The south bound route passes under the Columbus 4 and Columbus 3 MOAs and terminates 20 NM northeast of Greenwood, Mississippi. Table B-8-1 lists the route structure data, and Table B-8-2 presents the federal airways and MTRs that intersect the route, as well as the airports within the corridor. Figure B-8 depicts VR-1051.

Table B-8-1 VR-1051

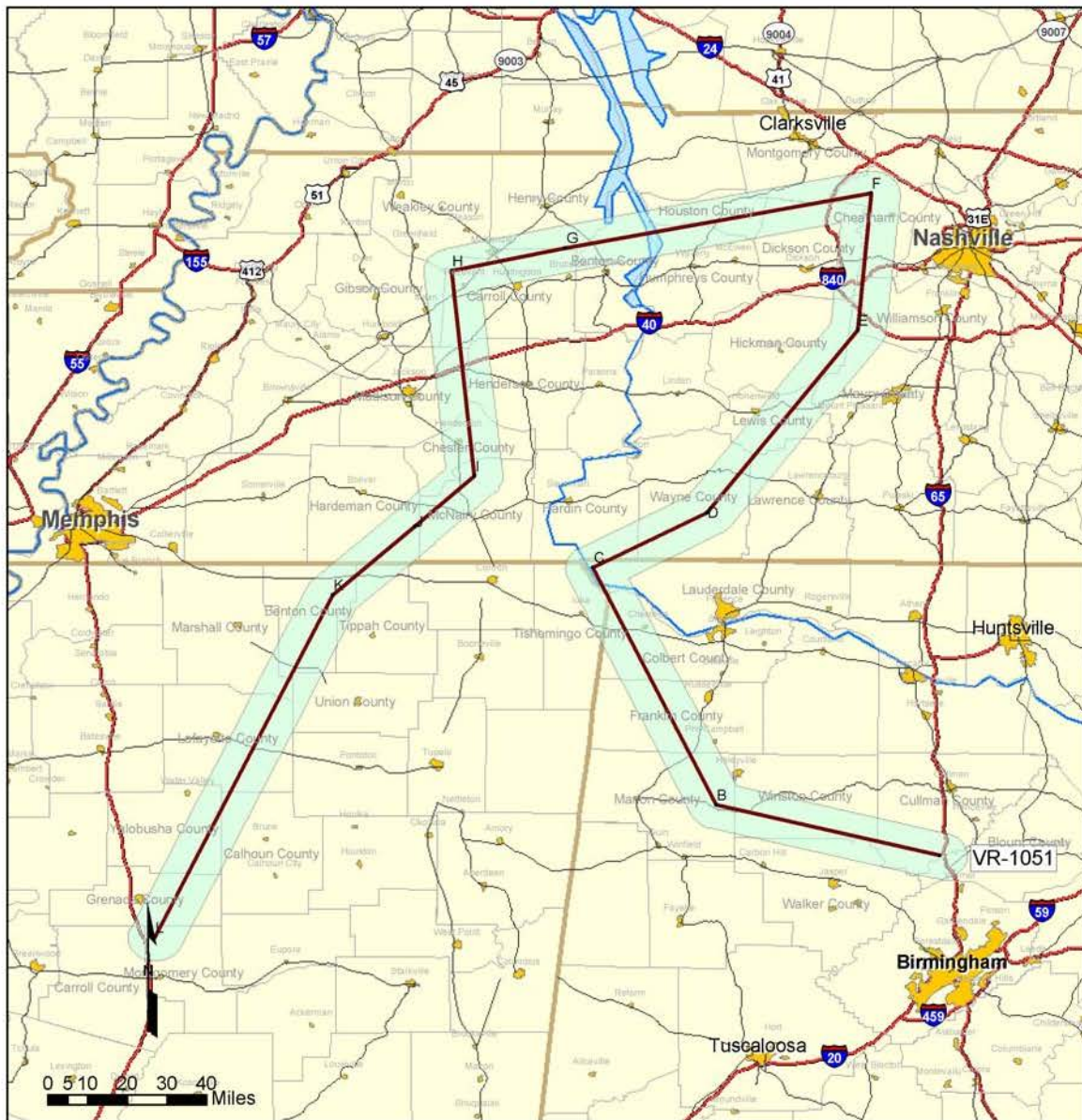
Originating/Scheduling Activity:			14 OSS/OSOR, Columbus AFB, MS		
Hours of Operation: 7:00 a.m-11:00 p.m., daily					
Route Description					
Point	Altitude Data (100 FT)	Route Width (NM)	Length (NM)	Latitude	Longitude
A (Entry Point)				33° 56.00' N	86° 53.00' W
B	15 AGL	5/LT - 5/RT	42.0	34° 07.00' N	87° 42.00' W
C	01 AGL - 15 AGL	5/LT - 5/RT	56.5	34° 59.00' N	88° 09.00' W
D	01 AGL - 15 AGL	5/LT - 5/RT	24.0	35° 11.00' N	87° 44.00' W
E	01 AGL - 15 AGL	5/LT - 5/RT	47.5	35° 51.00' N	87° 11.00' W
F	01 AGL - 15 AGL	5/LT - 5/RT	30.5	36° 21.00' N	87° 08.00' W
G	01 AGL - 15 AGL	5/LT - 5/RT	55.0	36° 09.00' N	88° 15.00' W
H	01 AGL - 15 AGL	5/LT - 5/RT	21.0	36° 04.00' N	88° 40.00' W
I	01 AGL - 15 AGL	5/LT - 5/RT	45.0	35° 19.00' N	88° 35.00' W
J	01 AGL - 15 AGL	5/LT - 5/RT	15.5	35° 08.00' N	88° 48.00' W
K	01 AGL - 15 AGL	5/LT - 5/RT	21.0	34° 53.00' N	89° 06.00' W
L (Exit Point)	01 AGL - 15 AGL	5/LT - 5/RT	81.5	33° 38.00' N	89° 45.00' W
Total Route Length:			439.5		
LT=NM distance left of route center line; RT=NM distance right of route center line Source: DoD 2002					

Table B-8-2 VR-1051

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 49	IR-066	Walker Co - Belvill*
V 7	IR-067	Double Springs Winston Co *
V 159	IR-1050	Posey
V 54	VR-1016	Russellville
V 16	VR-1014	Iuka *
V 67	IR-077/078	Palmer-Napier Lake

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 140	IR-091	Baker *
V 94		Whifferdill
V 124		Weakley
		Humphreys Co *
		Houston Co *
		Carroll Co
		Huntingdon *
		Southford
		Sibley *
		Ripley *
		University Oxford *
		Grenada *

Figure B-8 VR-1051



B-9 VR-1072

VR-1072 is a seven-segment route that is located in southwest Mississippi along the Louisiana state line. The route starts south of Jackson, Mississippi, and proceeds southwest toward Natchez, Mississippi, then south toward the Louisiana state line. The route proceeds northeast and terminates south the City of Meridian, Mississippi. Table B-9-1 lists the route structure data, and Table B-9-2 presents the federal airways and MTRs that intersect the route, as well as the airports within the corridor. Figure B-9 depicts VR-1072.

Table B-9-1 VR-1072

Originating/Scheduling Activity: 14 OSS/OSOR, Columbus AFB, MS					
Hours of Operation: normally 8:00 a.m.-9:00 p.m. (use other times prohibited)					
Route Description					
<i>Point</i>	<i>Altitude Data (100 FT)</i>	<i>Route Width (NM)</i>	<i>Length (NM)</i>	<i>Latitude</i>	<i>Longitude</i>
A (Entry Point)				32° 03.00' N	90° 08.00' W
B	15 AGL	5/LT - 5/RT	12.0	32° 01.00' N	90° 22.00' W
C	5 AGL - 15 AGL	5/LT - 5/RT	35.0	31° 41.00' N	90° 56.00' W
D	5 AGL - 15 AGL	5/LT - 5/RT	33.0	31° 15.00' N	91° 20.00' W
E	5 AGL - 15 AGL	5/LT - 5/RT	17.0	31° 03.00' N	91° 06.00' W
F	5 AGL - 15 AGL	5/LT - 5/RT	67.0	31° 36.00' N	89° 59.00' W
G	5 AGL - 15 AGL	5/LT - 5/RT	35.0	32° 02.00' N	89° 31.00' W
H (Exit Point)	5 AGL - 15 AGL	5/LT - 5/RT	41.0	31° 58.00' N	88° 43.00' W
Total Route Length:			240.0		
LT=NM distance left of route center line; RT=NM distance right of route center line					
Source: DoD 2002					

Table B-9-2 VR-1072

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 9	VR-1024	Alton *
V 557	VR-1033	Berryhill
V 570		Copiah Co *
V 71		Netterville
V 212		Piker-Too*
V 222		McGee
V 11		Clay
V 194		Prentise-Jefferson Davis Co
V455		Magee
		Thigpen
		Clark Co

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable.

Figure B-9 VR-1072



B-10 SR-137

SR-137 is a five-segment route that begins 5 NM west of Starkville, Mississippi, and proceeds west to Greenwood, Mississippi. The route turns south toward Lexington and Carthage, Mississippi, then east where it terminates 15 NM southeast of Starkville. Table B-10-1 lists the route structure data and Table B-10-2 presents the federal airways and MTRs that intersect the route, as well as the airports within the corridor. Figure B-10 depicts SR-137.

Table B-10-1 SR-137

Originating/Scheduling Activity: 14 OSS/OSOR, Columbus AFB, MS					
Hours of Operation: sunrise to sunset, Monday through Friday					
Route Description					
<i>Point</i>	<i>Altitude Data (100 FT)</i>	<i>Route Width (NM)</i>	<i>Length (NM)</i>	<i>Latitude</i>	<i>Longitude</i>
A (Entry Point)				33° 31.03' N	88° 56.13' W
B	5 AGL - 15 AGL	3/LT - 3/RT	44.5	33° 32.03' N	89° 50.00' W
C	5 AGL - 15 AGL	3/LT - 3/RT	35.5	33° 06.10' N	89° 54.00' W
D	5 AGL - 15 AGL	3/LT - 3/RT	22.0	32° 53.09' N	89° 33.02' W
E	5 AGL - 15 AGL	3/LT - 3/RT	26.0	33° 01.00' N	89° 03.13' W
F (Exit Point)	5 AGL - 15 AGL	2/LT - 3/RT	24.0	33° 14.09' N	88° 40.00' W
Total Route Length:			152.0		
LT=NM distance left of route center line; RT=NM distance right of route center line Source: DoD 2002					

Table B-10-2 SR-137

<i>Federal Airways</i>	<i>Military Training Routes</i>	<i>Airports</i>
V 278	IR-068	Eupora
V 245	IR-044	Winona*
	VR-1033	

* Airport outside MTR but within 3 nautical miles of corridor boundary. Airports will be avoided by 3 NM and 1,500' AGL where practicable

APPENDIX C

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

13 Aug 03

Herbert Harper, Director
Tennessee Historical Commission
Clover Bottom Mansion
2941 Lebanon Road
Nashville TN 37243

Dear Mr. Harper,

The 14th Flying Training Wing, Columbus Air Force Base (AFB), Mississippi, is conducting an environmental assessment to assess the potential environmental impacts of replacing the T-37 training aircraft with T-6 aircraft. The attached Draft Description of the Proposed Action and Alternatives (DOPAA) provides details of the action, explains the purpose and need for the action, and discusses alternatives to the action.

Under the Proposed Action, 96 T-37s would be replaced with as many as 89 T-6 aircraft between 2006 and 2011. In addition to Columbus AFB, the Shuqualak Auxiliary Airfield in Noxubee County, Mississippi and the Golden Triangle Regional Airport at Columbus, Mississippi would be used for flying training operations. Ten low-level navigation military training routes that overfly Mississippi, Alabama, Tennessee, Arkansas, and Louisiana would be used by Columbus AFB T-6, T-1, and T-38 aircraft. One facility would be constructed. The number of military, government civilian, and contractor personnel at the base would remain at current levels. There would be no change from the current type and level of activities under the No Action Alternative.

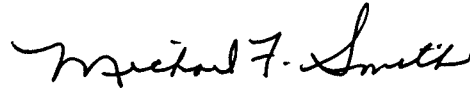
According to the National Environmental Policy Act (NEPA), the Air Force must assess the potential environmental impacts of the proposed and alternative actions. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, the Air Force is requesting input from other federal, state, and local agencies on the proposal. Please identify any resources within your agency's purview that may be potentially impacted. Maps and graphics are included within the Draft DOPAA to assist your office in reviewing the proposal.

Please provide any comments or information by September 15, 2003. Responses should be sent directly to:

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

Your assistance in providing information is greatly appreciated. If you have any questions, please call Mr. Lockhart at (662) 434-3130.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael F. Smith". The signature is fluid and cursive, with the first name "Michael" and last name "Smith" clearly distinguishable.

MICHAEL F. SMITH, REM
Chief, Environmental Flight

Attachment:

Draft Description of the Proposed Action and Alternatives



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

13 Aug 03

United States Fish and Wildlife Service
Cookeville Ecological Field Services Office
446 Neal Street
Cookeville TN 38501

Dear Sir or Madam,

The 14th Flying Training Wing, Columbus Air Force Base (AFB), Mississippi, is conducting an environmental assessment to assess the potential environmental impacts of replacing the T-37 training aircraft with T-6 aircraft. The attached Draft Description of the Proposed Action and Alternatives (DOPAA) provides details of the action, explains the purpose and need for the action, and discusses alternatives to the action.

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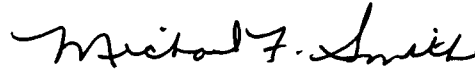
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14 CES/CEVN (Star Digital)
555 Simler Blvd
Columbus AFB MS 39710-6010

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Sincerely,

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MICHAEL F. SMITH, REM
Chief, Environmental Flight

Attachment:

Draft Description of the Proposed Action and Alternatives



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

13 Aug 03

United States Fish and Wildlife Service
LaFayette Ecological Field Services Office
646 Cajundome Blvd., Suite 400
LaFayette LA 70506

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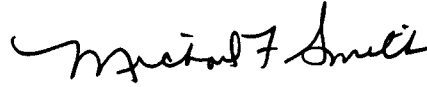
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Mr. Frank Lockhart
14 CES/CEVN (Star Digital)
555 Simler Blvd
Columbus AFB MS 39710-6010

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Draft Description of the Proposed Action and Alternatives



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

13 Aug 03

United States Fish and Wildlife Service
Daphne Ecological Field Services Office
P.O. Box 1190
Daphne AL 36526

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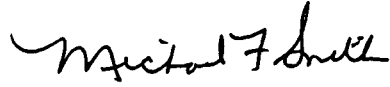
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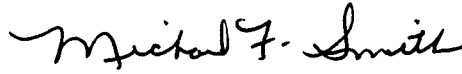
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE MISSISSIPPI

13 Aug 03

Louisiana Department of Cultural Development
P.O Box 94361
Baton Rouge LA 70804

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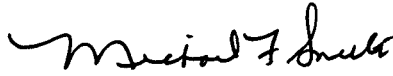
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE MISSISSIPPI

13 Aug 03

Louisiana Department of Wildlife and Fisheries
2000 Quail Drive
Baton Rouge LA 70808

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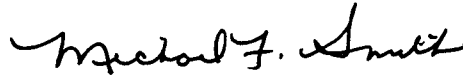
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE MISSISSIPPI

13 Aug 03

Tennessee Wildlife Resources Agency
PO Box 40747
Nashville TN 37204

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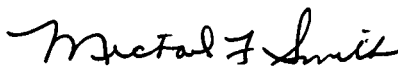
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
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13 Aug 03

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468 South Perry Street
Montgomery AL 36130

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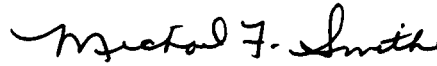
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE MISSISSIPPI

13 Aug 03

Alabama Department of Conservation & Natural Resources
64 North Union Street
Montgomery AL 36130

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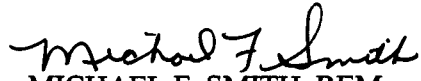
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
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13 Aug 03

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2 Natural Resources Drive
Little Rock AR 72205

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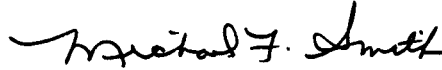
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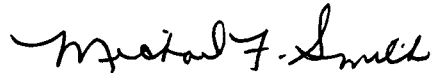
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE MISSISSIPPI

13 Aug 03

Tracy L. Copeland
Manager, State Clearinghouse
Off. of Intergovernmental Services
Department of Finance and Administration
1515 West 7th St., Room 412
Little Rock AR 72203

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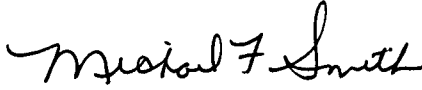
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE MISSISSIPPI

13 Aug 03

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

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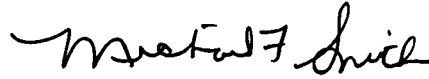
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HEADQUARTERS 14TH FLYING TRAINING WING
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13 Aug 03

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 14th Flying Training Wing, Columbus Air Force Base (AFB), Mississippi, is conducting an environmental assessment to assess the potential environmental impacts of replacing the T-37 training aircraft with T-6 aircraft. The attached Draft Description of the Proposed Action and Alternatives (DOPAA) provides details of the action, explains the purpose and need for the action, and discusses alternatives to the action.

Under the Proposed Action, 96 T-37s would be replaced with as many as 89 T-6 aircraft between 2006 and 2011. In addition to Columbus AFB, the Shuqualak Auxiliary Airfield in Noxubee County, Mississippi and the Golden Triangle Regional Airport at Columbus, Mississippi would be used for flying training operations. Ten low-level navigation military training routes that overfly Mississippi, Alabama, Tennessee, Arkansas, and Louisiana would be used by Columbus AFB T-6, T-1, and T-38 aircraft. One facility would be constructed. The number of military, government civilian, and contractor personnel at the base would remain at current levels. There would be no change from the current type and level of activities under the No Action Alternative.

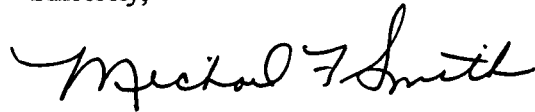
According to the National Environmental Policy Act (NEPA), the Air Force must assess the potential environmental impacts of the proposed and alternative actions. In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, the Air Force is requesting input from other federal, state, and local agencies on the proposal. Please identify any resources within your agency's purview that may be potentially impacted. Maps and graphics are included within the Draft DOPAA to assist your office in reviewing the proposal.

Please provide any comments or information by September 15, 2003. Responses should be sent directly to:

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

Your assistance in providing information is greatly appreciated. If you have any questions, please call Mr. Lockhart at (662) 434-3130.

Sincerely,

A handwritten signature in black ink, reading "Michael F. Smith". The signature is written in a cursive style with a large, stylized "M" and "S".

MICHAEL F. SMITH, REM
Chief, Environmental Flight

Attachment:

Draft Description of the Proposed Action and Alternatives



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

September 12, 2003

Mr. Frank Lockhart
14 CES/CEVN (Star Digital)
555 Simler Boulevard
Columbus AFB, Mississippi 39710-6010

Subject: Proposed Action and Alternatives, T-6 Aircraft Basing Operation, Columbus Air Force Base, Mississippi.

Dear Mr. Lockhart:

Thank you for your letter and enclosures of August 13, 2003, requesting information regarding potential environmental impacts that could occur as a result of the Air Force replacing the T-37 training aircraft with T-6 aircraft. Fish and Wildlife Service (Service) personnel from the Ecological Services Office in Cookeville, Tennessee, have reviewed the information which you provided in the Description of Proposed Action and Alternatives.

The proposed action would involve navigational military training routes that overfly portions of Mississippi, Alabama, Tennessee, Arkansas, and Louisiana. The T-6 aircraft would be used by the Columbus Air Force Base, Mississippi, and utilize the same airspace as the existing T-37 aircraft; therefore, no change to the dimensions of any military operations area (MOA) is expected. The following constitute the comments of the U.S. Department of the Interior provided in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.) and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

Endangered species collection records available to the Service do not indicate the presence in Tennessee of federally listed or proposed endangered or threatened species that would be adversely impacted by the proposed activities. We do not anticipate significant adverse impacts to fish and wildlife or their habitats as a result of this action.

Thank you for this opportunity to review the proposed action and alternatives. Please contact Robbie Sykes of my staff at 931/528-6481 (ext. 209) if you have questions about these comments.

Sincerely,

Lee A. Barclay, Ph.D.
Field Supervisor



United States Department of the Interior

FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

August 26, 2003

Mr. Frank Lockhart
14 CES/CEVN (Star Digital)
555 Simler Boulevard
Columbus AFB, Mississippi 39710-6010

Dear Mr. Lockhart:

In response to the Department of the Air Force's, August 13, 2003, request, personnel from the U. S. Fish and Wildlife Service's Louisiana Field Office have reviewed the draft Description of Proposed Action and Alternatives (DOPAA) for the 14th Flying Training Wing, Columbus Air Force Base, Mississippi. That DOPAA outlines the proposed replacement of 96 T-37 training aircraft with up to 89 T-6 training aircraft, and describes a proposed facility construction project. That DOPAA was prepared under the authority of the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.). We submit the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the National Environmental Policy Act.

The DOPAA depicts the proposed military training routes (MTR) for the aircraft. Those MTRs are currently used by pilots based at the 14th Flying Training Wing. Two of those MTRs include portions of Louisiana. MTR number IR-070 traverses northeastern Louisiana near the Arkansas border, and MTR number VR-1072 includes a portion of East Feliciana Parish in the southeastern portion of the State.

Federally listed species present in Louisiana in the vicinity of MTR IR-070 include the red-cockaded woodpecker (RCW, *Picoides borealis*) and bald eagle (*Haliaeetus leucocephalus*). Additionally, as shown on the map provided in the DOPAA, MTR IR-070 appears to cross over a portion of the Service's Upper Ouachita National Wildlife Refuge. No Federally listed species are known from Louisiana in the vicinity of MTR VR-1072.

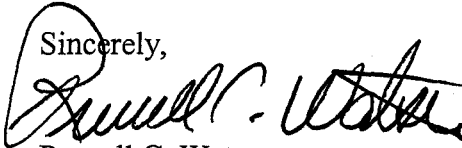
The endangered RCW inhabits open, park-like stands of mature (i.e., greater than 60 years of age) pine trees containing little hardwood understory or midstory. RCWs can tolerate small numbers of overstory hardwoods or large midstory hardwoods at low densities found naturally in many southern pine forests, but they are not tolerant of dense hardwood midstories resulting from fire suppression. RCWs excavate roost and nest cavities in large living pines (i.e., 10 inches or

greater in diameter at breast height). The cavity trees and the foraging area within 200 feet of those trees are known as a cluster. Foraging habitat is defined as pine and pine-hardwood (i.e., 50 percent or more of the dominant trees are pine trees) stands over 30 years of age that are located within one-half mile of the cluster.

Federally listed as threatened, bald eagles nest in Louisiana from October through mid-May. Eagles typically nest in bald cypress trees near fresh to intermediate marshes or open water in the southeastern Parishes. Areas with high numbers of nests include the Lake Verret Basin south to Houma, the southern marshes/ridge from Houma to Bayou Vista, the north shore of Lake Pontchartrain, and the Lake Salvador area. Eagles also winter and infrequently nest near large lakes in central and northern Louisiana. Major threats to this species include habitat alteration, human disturbance, and environmental contaminants (i.e., organochlorine pesticides and lead).

Prior to committing funds for the proposed project, the Department of the Air Force should determine if the proposed project is "likely (or not likely) to adversely affect" the red-cockaded woodpecker or the bald eagle, and provide that determination to this office. Should the Department of the Air Force determine that the proposed action is "likely to adversely affect" either of those species, then further consultation with this office will be required. If, however, the Department of the Air Force determines the proposed action is "not likely to adversely affect" those species, that determination and its supporting rationale should be provided to this office for our concurrence. If we concur with that determination, then no further consultation would be required for this project.

We appreciate the opportunity to comment on the DOPAA. If questions arise, please contact Bill Vermillion (337/291-3133) of this office.

Sincerely,

Russell C. Watson
Acting Supervisor
Louisiana Field Office

cc: Upper Ouachita NWR, Farmerville, LA
LDWF, Natural Heritage Program, Baton Rouge, LA



United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

August 25, 2003

Mr. Frank Lockhart
Department of the Air Force
Columbus Air Force Base, Mississippi 39710-6010

Dear Mr. Lockhart:

The U.S. Fish and Wildlife Service (Service) has reviewed preliminary data to be included in an environmental assessment regarding a proposed change in aircraft training at the Columbus Air Force Base (AFB) in Lowndes County, the Shuqualak Auxiliary Airfield in Noxubee County, and the Golden Triangle Regional Airport in Lowndes County, Mississippi. The 14th Flying Training Wing at Columbus AFB proposes to replace the T-37 training aircraft with the T-6 aircraft. Our comments are submitted in accordance with the Endangered Species Act (16 U.S.C. 1531 et seq.).

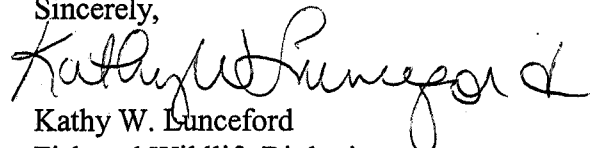
Although there will be little ground disturbing activity, we believe the federally listed threatened bald eagle (*Haliaeetus leucocephalus*) might be impacted by the proposed change in air traffic. There are several known eagle nests associated with the Corps of Engineers' (COE) north-central Mississippi reservoirs (Enid, Arkabutla, Grenada, and Sardis) and the Tennessee-Tombigbee Waterway. Also, there are eagles nesting areas around the Ross Barnett Reservoir near Jackson, and along many major river systems within the state.

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 or the COE in Vicksburg, telephone: (601) 631-5289.

Additional eagle information may be obtained from Jenny Thompson, the Mississippi bald eagle coordinator at the Mississippi Department of Wildlife, Fisheries and Parks, telephone: (601) 362-9212. If you have any questions, please feel free to contact Kathy Lunceford in our office, telephone: 601-629-6617.

Sincerely,


Kathy W. Lunceford
Fish and Wildlife Biologist



STATE OF MISSISSIPPI
DEPARTMENT OF FINANCE AND ADMINISTRATION

MEMORANDUM

TO: COLUMBUS AIR FORCE BASE
HEADQUARTERS 14TH FLYING TRAINING
555 SIMLER BLVD.
COLUMBUS MS 39710 6010

DATE: SEP - 4 2003

FROM: STATE CLEARINGHOUSE FOR FEDERAL PROGRAMS

SUBJECT: REVIEW COMMENTS - Activity:
THE 14TH FLYING TRAINING WING IS CONDUCTING AN
ENVIRONMENTAL ASSESSMENT TO ASSESS THE POTENTIAL ENVIRON-
MENTAL IMPACTS OF REPLACING THE T-37 TRAINING AIRCRAFT
WITH T-6 AIRCRAFT.

State Application Identifier Number MS030818-002

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)

EO 12372
WEEKLY LOG
PGM=N150

STATE OF MISSISSIPPI
STATE CLEARINGHOUSE FOR FEDERAL PROGRAMS

DATE 08/14/03
08/20/03

MS APPLICANT NO.: MS030818-002
IMPACT AREA(S): LOWNDES

APPLICANT:
COLUMBUS AIR FORCE BASE
HEADQUARTERS 14TH FLYING TRAINING
555 SIMLER BLVD.
COLUMBUS MS 39710-6010

CONTACT: FRANK LOCKHART
PHONE: (662) 434-3130

FEDERAL AGENCY: DEPARTMENT OF AIR FORCE

FUNDING: FEDERAL
LOCAL
TOTAL

APPLICANT
OTHER

STATE
PROGRAM

DESCRIPTION: THE 14TH FLYING TRAINING WING IS CONDUCTING AN
ENVIRONMENTAL ASSESSMENT TO ASSESS THE POTENTIAL ENVIRON-
MENTAL IMPACTS OF REPLACING THE T-37 TRAINING AIRCRAFT
WITH T-6 AIRCRAFT.

CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER

1301 WOOLFOLK BLDG., SUITE E - JACKSON, MS 39201 (601) 359-6762

- THIS IS AN ACKNOWLEDGEMENT ONLY -

STATE AGENCIES MUST REVIEW CERTAIN PROPOSALS PRIOR TO
RECEIVING MISSISSIPPI INTERGOVERNMENTAL REVIEW PROCESS CLEARANCE.
THE MISSISSIPPI DEPARTMENT OF ARCHIVES AND HISTORY REVIEWS ANY
PROPOSALS INVOLVING CONSTRUCTION, SUCH AS A HIGHWAY OR AN
APARTMENT COMPLEX FOR COMPLIANCE WITH CULTURAL RESOURCES AND
HISTORIC PRESERVATION. MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL
QUALITY, OFFICE OF POLLUTION CONTROL, REVIEWS APPLICATIONS IN
ACCORDANCE WITH THE FEDERAL WATER POLLUTION CONTROL ACT. THE
MISSISSIPPI DEPARTMENT OF MARINE RESOURCES REVIEWS APPLICATIONS
FOR CONSISTENCY WITH THE COASTAL PROGRAM.

IF APPLICATIONS ARE FOR PROJECTS OF LOCAL IMPACT, THEY
SHOULD BE SENT TO THE APPROPRIATE PLANNING AND DEVELOPMENT
DISTRICT AT THE SAME TIME. PLEASE NOTE THAT ONE OF OUR
REQUIREMENTS IS THE USE OF STANDARD FORM 424. THE DEPARTMENT
OF FINANCE AND ADMINISTRATION PREPARES AND DISTRIBUTES A WEEKLY
LOG LISTING PERTINENT INFORMATION CONTAINED ON THIS FORM. OUR
ADDRESS IS 1301 WOOLFOLK BLDG., SUITE E - JACKSON, MS 39201 AND
OUR PHONE NUMBER IS (601)359-6762.

MS APPLICANT NO.: MS030815-007
IMPACT AREA(S): STATEWIDE

CONTACT: CHERYL VINCE WHITMAN
PHONE: (617) 969-7100

APPLICANT:
EDUCATION DEVELOPMENT CENTER
HEALTH/HUMAN DEV. PROGRAMS
55 CHAPEL ST.
NEWTON MA 02458-1060

FEDERAL AGENCY:

FUNDING: FEDERAL \$	353,827	APPLICANT	STATE
LOCAL		OTHER	PROGRAM
TOTAL \$	353,827		

DESCRIPTION: COOPERATIVE AGREEMENT TO SUPPLEMENT THE TECHNICAL ASSISTANCE RESOURCE CENTER FOR THE PREVENTION OF VIOLENCE AND BEHAVIORAL HEALTH PROBLEMS.

CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER 03.013

MS APPLICANT NO.: MS030818-001
IMPACT AREA(S): MULTI-COUNTY

CONTACT: MELANIE MAGRUDER
PHONE: (678) 565-9800

APPLICANT:
ALL EMPOWERED, INC
219 SOLOMON DRIVE
ELLENWOOD GA 30294

FEDERAL AGENCY: DEPARTMENT OF EDUCATION

FUNDING: FEDERAL \$	268,739	APPLICANT \$	275,000	STATE
LOCAL		OTHER		PROGRAM
TOTAL \$	543,739			

DESCRIPTION: PARENTS AND THE COMMUNITY WILL BE EMPOWERED TO ACCESS THE INFORMATION AND RESOURCES NEEDED TO EFFECTIVELY PROMOTE SCHOOL READINESS THROUGH EARLY CHILDHOOD EMOTIONAL, BEHAVIORAL AND SOCIAL DEVELOPMENT.

CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER 84.215

MS APPLICANT NO.: MS030818-002
IMPACT AREA(S): LOWNDES

CONTACT: FRANK LOCKHART
PHONE: (662) 434-3130

APPLICANT:
COLUMBUS AIR FORCE BASE
HEADQUARTERS 14TH FLYING TRAINING
555 SIMLER BLVD.
COLUMBUS MS 39710-6010

FEDERAL AGENCY: DEPARTMENT OF AIR FORCE

FUNDING: FEDERAL	APPLICANT	STATE
LOCAL	OTHER	PROGRAM
TOTAL		

DESCRIPTION: THE 14TH FLYING TRAINING WING IS CONDUCTING AN ENVIRONMENTAL ASSESSMENT TO ASSESS THE POTENTIAL ENVIRONMENTAL IMPACTS OF REPLACING THE T-37 TRAINING AIRCRAFT WITH T-6 AIRCRAFT.

CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER



August 26, 2003

TENNESSEE HISTORICAL COMMISSION
DEPARTMENT OF ENVIRONMENT AND CONSERVATION
2941 LEBANON ROAD
NASHVILLE, TN 37243-0442
(615) 532-1550

Mr. Frank Lockhart
14CES/CEVN (Star Digital)
555 Simler Blvd.
Columbus AFB, Mississippi, 39710-6010

RE: DOD, T-37/T-6 REPLACEMENT, UNINCORPORATED, MULTI COUNTY

Dear Mr. Lockhart:

In response to your request, received on Wednesday, August 18, 2004, we have reviewed the documents you submitted regarding your proposed undertaking. Our review of and comment on your proposed undertaking are among the requirements of Section 106 of the National Historic Preservation Act. This Act requires federal agencies or applicant for federal assistance to consult with the appropriate State Historic Preservation Office before they carry out their proposed undertakings. The Advisory Council on Historic Preservation has codified procedures for carrying out Section 106 review in 36 CFR 800. You may wish to familiarize yourself with these procedures (Federal Register, December 12, 2000, pages 77698-77739) if you are unsure about the Section 106 process.

After considering the documents you submitted, we determine that **THERE ARE NO NATIONAL REGISTER OF HISTORIC PLACES LISTED OR ELIGIBLE PROPERTIES AFFECTED BY THIS UNDERTAKING.** We have made this determination either because of the specific location, scope and/or nature of your undertaking, and/or because of the size of the area of potential effect; or because no listed or eligible properties exist in the area of potential effect; or because the undertaking will not alter any characteristics of an identified eligible or listed property that qualify the property for listing in the National Register or alter such property's location, setting or use. Therefore, we have no objections to your proceeding with your undertaking.

If you are applying for federal funds, license or permit, you should submit this letter as evidence of consultation under Section 106 to the appropriate federal agency, which, in turn, should contact us as required by 36 CFR 800. If you represent a federal agency, you should submit a formal determination of eligibility and effect to us for comment. You may find additional information concerning the Section 106 process and the Tennessee SHPO's documentation requirements at www.state.tn.us/environment/hist/sect106.shtm. You may direct questions or comments to Joe Garrison (615) 532-1550-103. This office appreciates your cooperation.

Sincerely,

Herbert L. Harper
Executive Director and
Deputy State Historic
Preservation Officer

HLH/jyg



STATE OF ARKANSAS
**Department of Finance
and Administration**

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

October 13, 2003

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

RE: Description of Proposed Action and Alternatives T-6 Aircraft Basing and Operation
Columbus Air Force Base, Mississippi

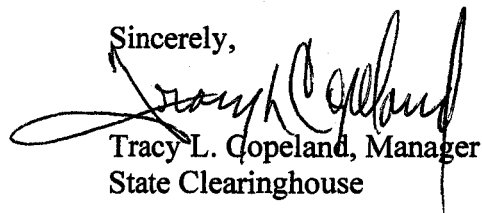
Dear Mr. Lockhart:

The State Clearinghouse has received the above document pursuant to the Arkansas Project Notification and Review System.

To carry out the review and comment process, this document was forwarded to members of the Arkansas Technical Review Committee. Resulting comments received from the Technical Review Committee which represents the position of the State of Arkansas are attached.

The State Clearinghouse wishes to thank you for your cooperation with the Arkansas Project Notification and Review System.

Sincerely,



Tracy L. Copeland, Manager
State Clearinghouse

TLC/lr
Enclosure
CC: Randy Young, AS&WCC



J. Randy Young, PE
Executive Director

Arkansas Soil & Water Conservation Commission

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us



Mike Huckabee
Governor

MEMORANDUM

RECEIVED

OCT 10 2003

INTERGOVERNMENTAL
SERVICES
STATE CLEARINGHOUSE

TO: Mr. Tracy Copeland, Manager
State Clearinghouse

FROM: Mr. J. Randy Young, P.E.
Executive Director

SUBJECT: Description of Proposed Action and Alternatives
T-6 Aircraft Basing and Operation
Columbus Air Force Base, Mississippi

DATE: September 30, 2003

Members of the Technical Review Committee have reviewed the above referenced project; the 14th Flying Training Wing, Columbus Air Force Base, Mississippi, is conducting an environmental assessment to assess the potential environmental impacts of replacing the T-37 training aircraft with T-6 aircraft. Under the proposed action, 96 T-37's would be replaced with as many as 89 T-6 aircraft between 2006 and 2011. One facility would be constructed. The Committee supports this project. Comments are attached for your review.

The opportunity to comment is appreciated.

JRY/ddavis



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

RECEIVED

1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
http://www.state.ar.us/dfa

03 AUG 22 PM 12:05
SOIL & WATER COMM.

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ~~Manager~~ ^{TRC} - State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbia Air Force Base,
Mississippi

#1582

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to -Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501)682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature Kolbert Agency ASWCC Date 9-19-03



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ^{TLC} Manager - State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to -Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501) 682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature: [Signature] Agency: ADED Date: 8-25-03



STATE OF ARKANSAS
**Department of Finance
and Administration**

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-3206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ^{TRC} Manager - State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to -Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is Imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501) 682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature: [Signature] Agency: _____ Date: 08-25-03

Division of Engineering
Arkansas Department of Health
4815 West Markham
Little Rock, AR 72205-8867

RECEIVED
03 AUG 22 AM 11:15
ARKANSAS DEPT. OF HEALTH
DIVISION OF ENGINEERING



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ^{TLC} Manager - State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to -Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501) 682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature Jamie L. Miller Agency Ark. Fa. Com. Date 22 Aug 03



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ^{TRC} Manager - State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to -Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501)682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature Mac Brubaker Agency AGC Date 8-25-03



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

1315 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ^{TLC} Manager - State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

Received

AUG 25 2003

River Basin

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to -Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debbv Davis of the ASWCC at (501)682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature Robert K. Luml Agency AGFC Date 9-9-03



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

1315 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1073
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ^{TLC} Manager - State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501) 682-1611 or the State Clearinghouse Office.

☐ Support	☐ Do Not Support (Comments Attached)
☐ Comments Attached	☐ Support with Following Conditions
☒ No Comments	☐ Non-Degradation Certification Issues (Applies to PC&E Only)

Signature J. O. Bull Agency CASH

Date 9/9/03



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-3206
http://www.state.ar.us/dfa

MEMORANDUM

3-204
TO: All Technical Review Committee Members
FROM: Tracy L. Copeland, Manager - State Clearinghouse
DATE: August 21, 2003
SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

RECEIVED

AUG 22 2003

OUTDOOR RECREATION PLANTS

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to -Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock, AR 72203.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501)682-1611 or the State Clearinghouse Office.

RECEIVED
03 SEP 22 AM
SOIL & WATER

☐ Support ☐ Do Not Support (Comments Attached)
☐ Comments Attached ☐ Support with Following Conditions
☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature A. Chennard Agency Parks & Tourism, AR Date 9-18-03

RECEIVED

AUG 22 2003

EXECUTIVE DIRECTOR'S
OFFICE



STATE OF ARKANSAS
Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES
1515 West Seventh Street, Suite 417
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ~~Manager~~ ^{THC} – State Clearinghouse

DATE: August 21, 2003

SUBJECT: Description of Proposed Action and Alternatives T-6
Aircraft Basing and Operation Columbus Air Force Base,
Mississippi

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Yours Comments should be returned by Sept. 11, 2003 to –Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock AR 72203.

NOTE: It is Imperative that your response be in to the ASWCC office by the date requested. Should your agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501)682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to PC&E Only)

Signature

J. L. Harris

Agency

AHID

Date

8/26/03

RECEIVED

AUG 27 2003

INTERGOVERNMENTAL
SERVICES
STATE CLEARINGHOUSE



STATE OF ALABAMA
ALABAMA HISTORICAL COMMISSION
468 SOUTH PERRY STREET
MONTGOMERY, ALABAMA 36130-0900

LEE H. WARNER
EXECUTIVE DIRECTOR

September 18, 2003

TEL: 334-242-3184
FAX: 334-240-3477

Frank Lockhart
14 CES/CEVN (Star Digital)
555 Simler Blvd.
Columbus AFB MS 39710-6010.

Re: AHC 03-1145; Replace T-37 Aircraft with T-6 Aircraft for Training Missions,
Statewide

Dear Mr. Lockhart:

Upon review of the above referenced project, the Alabama Historical Commission has determined that the aircraft replacement will have no effect on any known cultural resources listed on or eligible for the National Register of Historic Places. However, our office will need additional information so that we can make a final determination. Please complete and return the enclosed Project Review Consultation Form for each ground disturbing activity associated with this project (i.e. one facility will be constructed, per the cover letter) for review and determination.

We appreciate your commitment to helping us preserve Alabama's non-renewable resources. Should you have any questions, please contact Amanda McBride of this office and **include the AHC tracking number referenced above.**

Very truly yours,

Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/ALM/alm

Fav

334-262-1083



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

25 September 2003

Mr. Michael F. Smith, REM
Chief, Environmental Flight
555 Simler Boulevard, Suite 108
Columbus AFB MS 39710-6010

Ms. Elizabeth Ann Brown
Deputy State Historic Preservation Officer
Alabama Historical Commission
468 South Perry Street
Montgomery AL 36130-0900

Re: AHC 03-1145; Replace T-37 Aircraft with T-6 Aircraft for Training Missions, Statewide

Dear Ms. Brown

The above referenced project will not involve any ground disturbing activity within Alabama. There is one construction project associated with the project that will be on Columbus Air Force Base property in Mississippi.

Sincerely

A handwritten signature in black ink, appearing to read "Michael F. Smith", is written over the typed name.

MICHAEL F. SMITH, REM



October 23, 2003

AEA

Michael F. Smith, REM
Chief, Environmental Flight
555 Simler Boulevard, Suite 108
Columbus AFB, MS 39710-6010

RE: AHC 03-1145
Replace T-37 Aircraft with T-6 Aircraft
Statewide

LEE H. WARNER
Executive Director

468 South Perry Street
Montgomery, Alabama
36130-0900

tel 334 242-3184
fax 334 240-3477

Dear Mr. Smith:

Based upon the additional information forwarded by your office, the Alabama Historical Commission has determined that the proposed activities will not have an effect on any known cultural resources listed on or eligible for the National Register of Historic Places. Therefore, our office concurs with the proposed activities.

However, should any archaeological cultural resources be encountered during project activities, work shall cease and our office shall be consulted immediately.

We appreciate your efforts on this issue. If we may be of further service or if you have any questions or comments, please contact Stacey Hathorn of our office and be sure to include the project number referenced above.

Sincerely,



Elizabeth Ann Brown
Deputy State Historic Preservation Officer



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

27 Oct 03

Mr. Michael F. Smith, REM
Chief, Environmental Flight
555 Simler Boulevard, Suite 108
Columbus AFB MS 39710-6010

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

Dear Ms. Lunceford,

The Columbus Air Force Base (AFB) Wildlife Biologist has administered a tree survey on Columbus AFB for the presence of bald eagles. The survey was included all of the commercial forest stands. A copy of the survey is enclosed.

A complete walk around survey of the sites has shown no signs of nesting eagles or habitat suitable for nesting eagles. The trees consist of pine and hardwood species, are of uniform heights (no isolated, taller trees) and, are not in close proximity to large water bodies (approximately a two mile distance). Additionally, a portion of the site survey is associated with urban areas, which will discourage nesting bald eagles. Please call me with any questions or comments at 434-7958.

MICHAEL F. SMITH, REM

Enclosure (1)



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

24 Nov 03

Mr. Michael F. Smith, REM
Chief, Environmental Flight
555 Simler Blvd., Suite 108
Columbus AFB MS 39710-6010

Mr. Russell C. Watson
Acting Supervisor
United States Fish and Wildlife Service
Louisiana Field Office
646 Cajundome Blvd.
Lafayette, Louisiana 70506

Dear Mr. Watson:

Your letter dated August 26, 2003 requested that the Air Force determine if aircraft operations on low-level navigation military training routes (MTRs) at altitudes as low as 500 feet above ground level (AGL) by Columbus AFB, Mississippi T-6, T-1, and T-38 aircraft would likely (or not likely) adversely effect the Red-cockaded Woodpecker or the Bald Eagle. The attached information supports the Air Force's determination that the current and proposed Columbus AFB, MS aircraft MTR operations, at altitudes of 500 feet AGL or greater, are not likely to adversely effect these two species.

Please call Mr. Frank Lockhart at (662) 434-3130 if you have questions.

Sincerely,

A handwritten signature in black ink that reads "Michael F. Smith".

MICHAEL F. SMITH, REM

Attachment:
Supporting Rationale for Determination of No Likely Adverse Effect

Supporting Rationale
Determination that Military Training Route Aircraft Operations by Columbus AFB
Aircraft are not likely to Adversely Effect the Red-cockaded Woodpecker and Bald Eagle

In some situations, noise and visual disturbance caused by military overflight may cause short-duration effects to wildlife, or conflict with conservation purposes of National Wildlife Refuges (GAO 1989; Dewey and Mead 1994). Only when animals have little freedom of movement (*i.e.*, for escape) and/or are subjected to intense sound volume and frequency would negative effects likely to be measurable or long-lasting (Janis and Busnel 1978).

An increasing number of studies involving low-level, fixed-wing military overflight of varying intensity of sonic or sub-sonic noise (decibels, dBA) elicit little response from most free-roaming species, particularly birds and mammals (Platt 1977; Ellis 1981; USUF 1992; Grubb and Bowerman 1997; Johnson and Reynolds 2002). Numerous studies showing little or no effect on wildlife from aircraft-related noise and visual disturbances are reported by the USFWS (Gladwin *et al.* 1988).

Little research has been done comparing the differences in bird responsiveness to aircraft overflight and ground-based disturbances. Four studies that examined the effects of aircraft overflight on nesting birds noted a slight, insignificant decrease in nesting success and productivity when comparing disturbed and undisturbed nests (USACE 2000).

Birds may be more susceptible to disturbance-caused nest abandonment early in the nesting season. Studies have shown the following nest abandonment after being exposed to ground-based and aircraft overflight disturbances (USACE 2000).

- 30 percent of Ferruginous Hawk abandoned the nest after exposure to various ground-based disturbances (no control group was used for comparison).
- 2 of 29 Red-tailed Hawk nests were abandoned after being flushed by helicopter overflight compared 0 of 12 for the control group.
- 1 of 19 Prairie Falcon nests was abandoned when exposed to frequent low-altitude jet overflight (no control group was used for comparison).
- 1 of 11 Gyrfalcon nests failed (reportedly due to snow damage) compared to 0 of 12 for the control group.
- 1 of 6 Peregrine Falcon nests exposed to helicopter flights were abandoned (apparently due to inclement weather) compared to 0 of 3 control sites.

An Arizona study on the affect of anthropogenic disturbances on Bald Eagles found that the highest response frequency and severity of response was to ground-based, aquatic, and aerial disturbances, respectively. Another study involving the Mexican Spotted Owl found that chain saws resulted in a greater flush response than helicopters at comparable distances and noise

levels. Birds not previously exposed to specific disturbance types (*e.g.*, aircraft approach distance) are more likely to flush (USACE 2000).

Studies associated with the stimulus distance have indicated it was rare for birds to flush when the stimulus distance was greater than 197 feet. Many studies imply that animal response to noise disturbance events increases with a decrease in the distance to the stimulus source. One study found that owl flushing in response to a disturbance was "strongly and negatively related to stimulus distance and positively related to noise level." Another study found similar results when experimentally exposing Red-cockaded woodpeckers to military training noise (USACE 2000).

A study involving Snail Kites living near an airport and thus accustomed to aircraft noise did not flush even when the noise levels were as high as 105 decibels (A-weighted, dBA). Mexican Spotted Owls did not flush during the nesting season when the SEL from helicopters was equal to or less than 92 dBA and the equivalent average sound level for chain saws was equal to or less than 46 dBA. (Equivalent average sound level is the steady-state A-weighted sound level that contains the same acoustical energy as the time varying A-weighted sound level during the same interval.) Noise response thresholds for the non-nesting season were compatible with those for the nesting season (USACE 2000).

A recently completed study was accomplished by the United States Army Corps of Engineers at Fort Stewart, Georgia to determine the effect of military noise on the Red-cockaded woodpecker (USACE 2000). Three types of sample sites were chosen: passive disturbed; undisturbed; and experimental. A passive disturbed site received potentially significant noise disturbance as part of normal training operations; however, there was no control over time, number, or level of noise events at the site. Noise sources at the passive disturbed sites were large-caliber live fire, small arms live fire, grenade and artillery simulators, and helicopter overflight. An undisturbed site was one where the noise levels were judged to be consistently low or absent for all these noise types. Birds at experimental sites were exposed to either artillery simulators or .50-caliber blank fire under controlled conditions at distances ranging from 50 to 801 feet from the nest tree.

Summary of the USACE 2000 study focuses on the results from passive disturbance since aircraft overflight would not produce ground-based noise sources such as weapons firing. No Red-cockaded Woodpeckers were observed flushing the nest when a passive noise source was equal or greater than 656 feet from the nest. More specifically, birds did not flush when helicopters were equal to or greater than 328 feet from the nest site and SEL noise levels were less than 88 dBA (USACE 2000), which would be about 85 dBA at 500 feet from the source.

The USACE study indicated that Red-cockaded Woodpeckers that re-nested after initial nest failure due to disturbance were as successful and productive as sites that nested only once. Disturbed and undisturbed nest sites did not differ significantly in the number of eggs, nestlings, or successful fledglings per nest. The following table summarizes the success and productivity results from the study.

Summary of Red-cockaded Woodpecker Nesting Data

Condition	Disturbed Nest Site	Undisturbed Nest Site
Successful sites	42	23
Total sites	48	25
Average eggs per nest	3.47	3.56
Average nestlings per nest	2.27	2.28
Average young/occupied per nest	1.84	1.80
Average young/successful per nest	2.14	1.96

Source: USACE 2000.

The sound exposure level (SEL) for from a T-6 aircraft directly overhead on a MTR at 500 feet AGL would be 86 dBA, nearly the same as the noise level at that distance and the condition in which no Red-cockaded Woodpeckers were observed flushing the nest in the USACE 2000 study (*i.e.*, 85 dBA). (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. The maximum sound level would typically be 5 to 10 dBA below the SEL value or aircraft overflight.) Aircraft altitude on the MTRs would be no lower than 500 feet AGL. Noise modeling indicates the SEL at 500 feet for the T-1 and T-38 aircraft would be 102 and 96 dBA, respectively. T-1 MTR use would range from a low of 0.25 to a high of 3.0 sortie operations per day on a specific route based on five days of flying per week. T-38 MTR operations on any of the three routes it would use for the same condition would be 1.0 sortie operations per day. Thus, routes would be flown infrequently and overflight noise would be less as the slant range to the nest increases. For the reasons in this and preceding paragraphs, it is not likely that MTR operations by Columbus AFB aircraft would adversely affect Red-cockaded Woodpeckers.

Specific studies involving bald eagles and peregrine falcons have shown both to tolerate low-flying jets without short- or long-term behavioral or reproductive impacts (Platt 1977; Ellis, 1981; Grubb and Bowerman 1997). Aircraft altitude on the MTRs would be no lower than 500 feet AGL. This altitude would provide the 500 foot vertical and 1,500 foot horizontal between bald eagle nest sites and the aircraft recommended by the United States Fish and Wildlife Service Mississippi Field Office (USFWS 2003). Thus, MTR operations by Columbus AFB aircraft likely would not adversely affect the bald eagle.

Air Force Instruction 11-202 and Federal Aviation Regulations recommend all aircraft maintain minimum altitude of 2,000 feet AGL over National Wildlife Refuges, National Parks, and Forest Service lands in order to minimize aircraft-wildlife conflicts including bird-aircraft strike hazard. Operating procedures for T-1, T-6, and T-38 aircraft mention avoiding overflight of known sensitive areas. These flight restrictions would be continued for the proposed operation of T-1, T-6, and T-38 aircraft at Columbus AFB.

For the reasons in the preceding paragraphs, the Air Force feels that use of the MTRs by Columbus AFB aircraft, including associated noise, would not adversely affect the Red-cockaded Woodpecker or Bald Eagle.

References

- Dewey and Mead 1994. Dewey, R., and D. Mead, Unfriendly Skies: the Threat of Military Overflights to National Wildlife Refuges, Washington, D.C. <http://www.defenders.org/pbs-us00.html>.
- Ellis 1981. Ellis, D.H., Responses of raptorial birds to low level military jets and sonic booms. Institute for Raptor Studies.
- GAO 1989. General Accounting Office, National Wildlife Refuges: Continuing Problems with Incompatible Uses Call for Bold Action. General Accounting Office GAO/RCED-89-196, Washington, D.C., 1989
- Gladwin *et al.* 1988. Gladwin, D.N., K.M. Mancini, and R. Villella, Effects of Aircraft Noise and Sonic Booms on Domestic Animals and Wildlife: Bibliographic Abstracts. Dept. Interior, Fish and Wildlife Service, National Ecology Research Center NERC 88/32, Fort Collins, CO.
- Grubb and Bowerman 1997. Grubb, T.G., and W.W. Bowerman, Variations in Breeding Bald Eagle Responses to Jets, Light Planes and Helicopters. *J. Raptor Res.* 31:213-222.
- Janis and Busnel 1978. Janis, I.L., and R.G. Busnel, *Effects of Noise on Wildlife*. Academic Press, New York.
- Johnson and Reynolds 2002. Johnson, C.L., and R.T. Reynolds, Responses of Mexican spotted owls to low-flying jet aircraft. U.S. Dept. Agriculture, Forest Service Res. Note RMRS-RN-12. Fort Collins, CO.
- Platt 1977. Platt, J.B., The breeding behavior of wild and captive gyrfalcons in relation to their environment and human disturbances. Unpubl. Ph.D. dissert., Cornell Univ., Ithaca, NY.
- USACE 2000. U.S. Army Corps of Engineers, *Assessment of Training Noise Impact on the Red-cockaded Woodpecker, 1999 Results*, May 2000.
- USFWS 2003. United States Department of the Interior, Fish and Wildlife Service, Mississippi Field Office, Jackson, MS letter to Columbus AFB in response to the office's review of Chapters 1 and 2 of this EA, August 25, 2003.
- USUF 1992. Utah State University Foundation, Sonic boom/animal disturbance studies on pronghorn antelope, Rocky Mountain elk, and bighorn sheep. Contract No. F42650-87-C-0349, Hill Air Force Base, Clearfield, UT; Utah State University Foundation (G.W. Workman, ed.). Utah State Univ., Logan, UT.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

December 12, 2003

Mr. Michael R. Smith, REM
Chief, Environmental Flight
555 Simler Boulevard, Suite 108
Columbus Air Force Base, Mississippi 39710-6010

Dear Mr. Smith:

Please reference your letter of November 24, 2003, wherein you provided a determination of the effects of current and proposed low-level aircraft navigation military training routes (MTRs) originating from Columbus Air Force Base (AFB), Mississippi, on the Federally listed endangered red-cockaded woodpecker (RCW, *Picoides borealis*), and the Federally listed threatened bald eagle (*Haliaeetus leucocephalus*). Your determination was that the proposed action would not likely adversely affect those species, and you provided supporting rationale for that determination. The U.S. Fish and Wildlife Service (Service) has reviewed the information you supplied, and provides comments under the authority of the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321-4347).

Two MTRs; specifically, IR-070 and VR-1072, include portions of Louisiana. MTR IR-070 traverses habitat used by the RCW and the bald eagle; no Federally listed threatened or endangered species are known from the vicinity of MTR VR-1072. According to the August 2003 draft Description of Proposed Action and Alternatives (DOPAA) for the 14th Flying Training Wing, Columbus AFB, Mississippi, MTR IR-1070 is currently used by T-1 aircraft at the rate of 26 sorties per month (312 sorties annually). The proposed action would potentially increase those sorties on IR-070 to 60 per month (720 annually). Minimum altitude flown on the MTRs would be 500 feet above ground level (AGL).

On March 10, 1997, personnel from the Service's Louisiana Field Office provided comments on an Environmental Assessment (EA) and draft Finding of No Significant Impact for the Specialized Undergraduate Pilot Training Production (SUPT) Increases at Columbus, Laughlin, and Vance Air Force Bases. Among the actions analyzed in that EA was a forty percent increase in aircraft operations on the MTRs used by Columbus AFB (including IR-070). That EA stated

that traffic pattern altitude for the T-1 aircraft was 1,000 feet AGL. In our March 10, 1997, correspondence, the Service concurred with the United States Air Force's determination that the actions referenced above and the others analyzed in that EA would not adversely affect fish and wildlife resources, including Federally listed threatened or endangered species, in Louisiana.

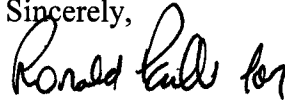
The DOPAA described a greater-than 100 percent increase in T-1 aircraft sorties flown on MTR IR-070, at an altitude 500 feet lower than that described in the SUPT EA. In the supporting rationale you provided with your November 24, 2003, letter, the sound exposure level (SEL) modeled for a T-1 aircraft at 500 feet AGL was 102 decibels (A-weighted, dBA), and it was stated that sorties flown by T-1 aircraft on specific MTRs would range from 0.25 to 3.0 per day. In that rationale, you also cited several research projects investigating the impacts of military overflight noise and other disturbances on nesting birds. Notably, a U.S. Army Corps of Engineers' (Corps) study at Fort Stewart, Georgia, focused on the impacts of various military activities on RCWs. Although the primary focus of the study was on the impacts of ground-based disturbances such as gunfire, a small number of aircraft disturbance responses were measured as well. Five fixed-wing aircraft flyovers were recorded, and no response was elicited from RCWs on all occasions. Only one cavity, however, contained nesting RCWs. Fixed-wing aircraft flyovers occurred between 1,640 to 2,000 feet from RCW cavities. SELs ranged from 67.4 to 92.0 dBA. Ten helicopter overflights over active RCW nest cavities were recorded during the Corps' study. On one of those overflights, an adult bird appeared at the cavity entrance, but did not flush from the cavity. In that overflight, the helicopter was 131 feet from the cavity, and a SEL of 91.9 dBA was recorded. The remaining helicopter overflights occurred within 328 to 1,640 feet from RCW cavities, with SELs ranging from 55.8 to 93.8 dBA.

The new action described in the DOPAA which is relevant to Federal-trust fish and wildlife resources in Louisiana is the increase in sorties, and the presumed reduction in minimum altitude, from 1,000 to 500 feet AGL, on MTR IR-070. Little current information exists for the status of RCW clusters in northeastern Louisiana in the vicinity of MTR IR-070. The majority of those clusters occur on private lands, and they are not known to have been surveyed by Service or Louisiana Department of Wildlife and Fisheries biologists since the 1980's. A few, however, are known to have been active since 2000. Two bald eagle nests are known from that vicinity; one was active in 2001. Thus, noise and disturbance impacts associated with currently-occurring T-1 overflights have not eliminated RCW or bald eagle nesting in northeastern Louisiana.

Based upon the information above, and upon that provided in your supporting rationale, the Service concurs with your determination that the proposed action is not likely to adversely affect Federally listed threatened or endangered species. We suggest, if possible, however, that the previously-established 1,000 foot minimum AGL altitude be used when traversing habitat in the vicinity of MTR IR-070 occupied by the RCW or nesting bald eagles. A map showing those locations is enclosed.

We appreciate the opportunity to comment on the DOPAA. If questions arise, please contact Bill Vermillion (337/291-3133) of this office.

Sincerely,

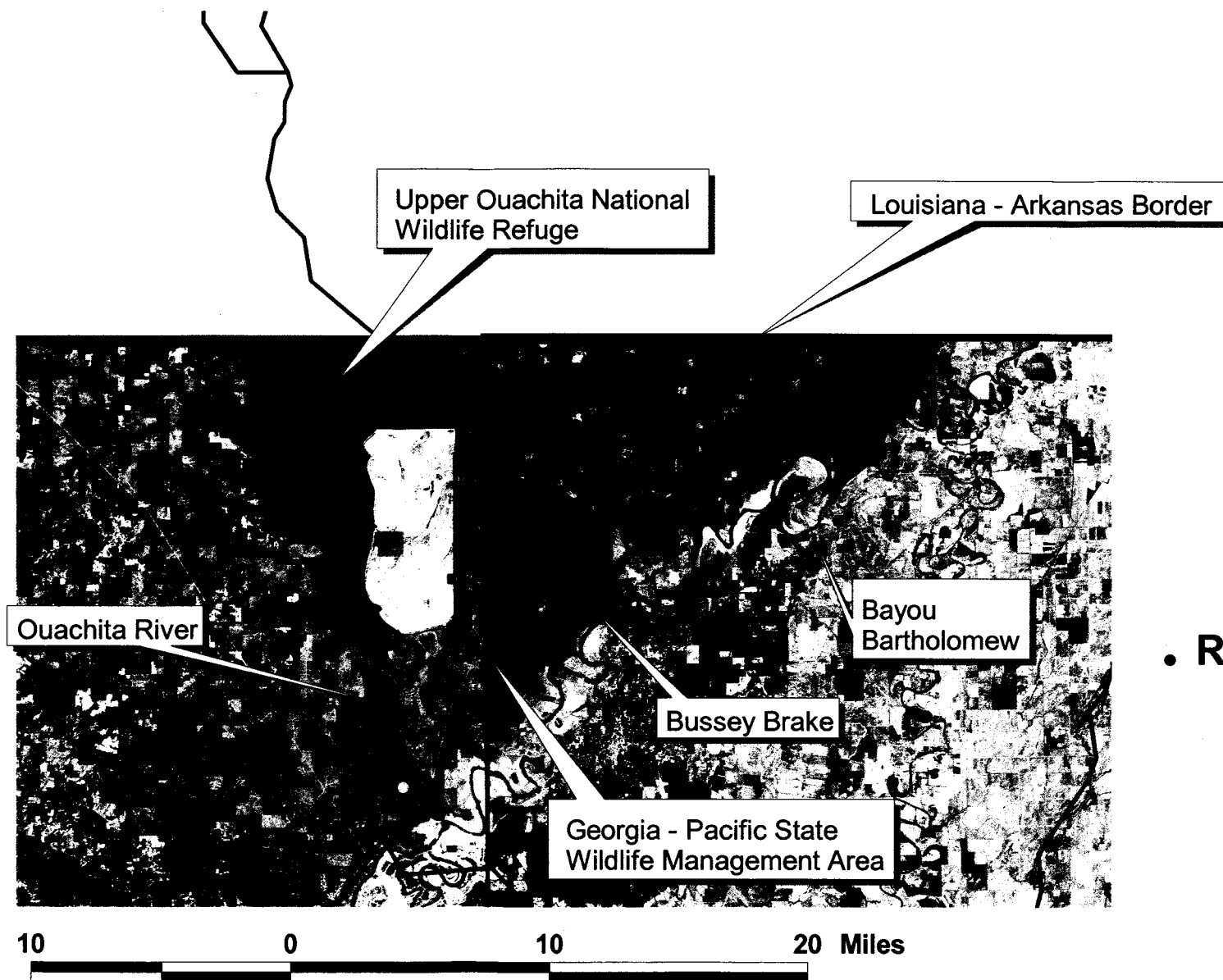
A handwritten signature in black ink, appearing to read "Russell C. Watson" with a stylized flourish at the end.

Russell C. Watson
Acting Supervisor
Louisiana Field Office

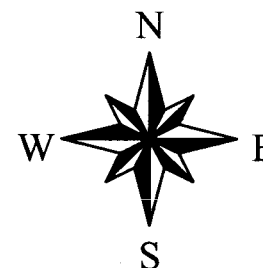
enclosures

cc: LDWF, Natural Heritage Program, Baton Rouge, LA

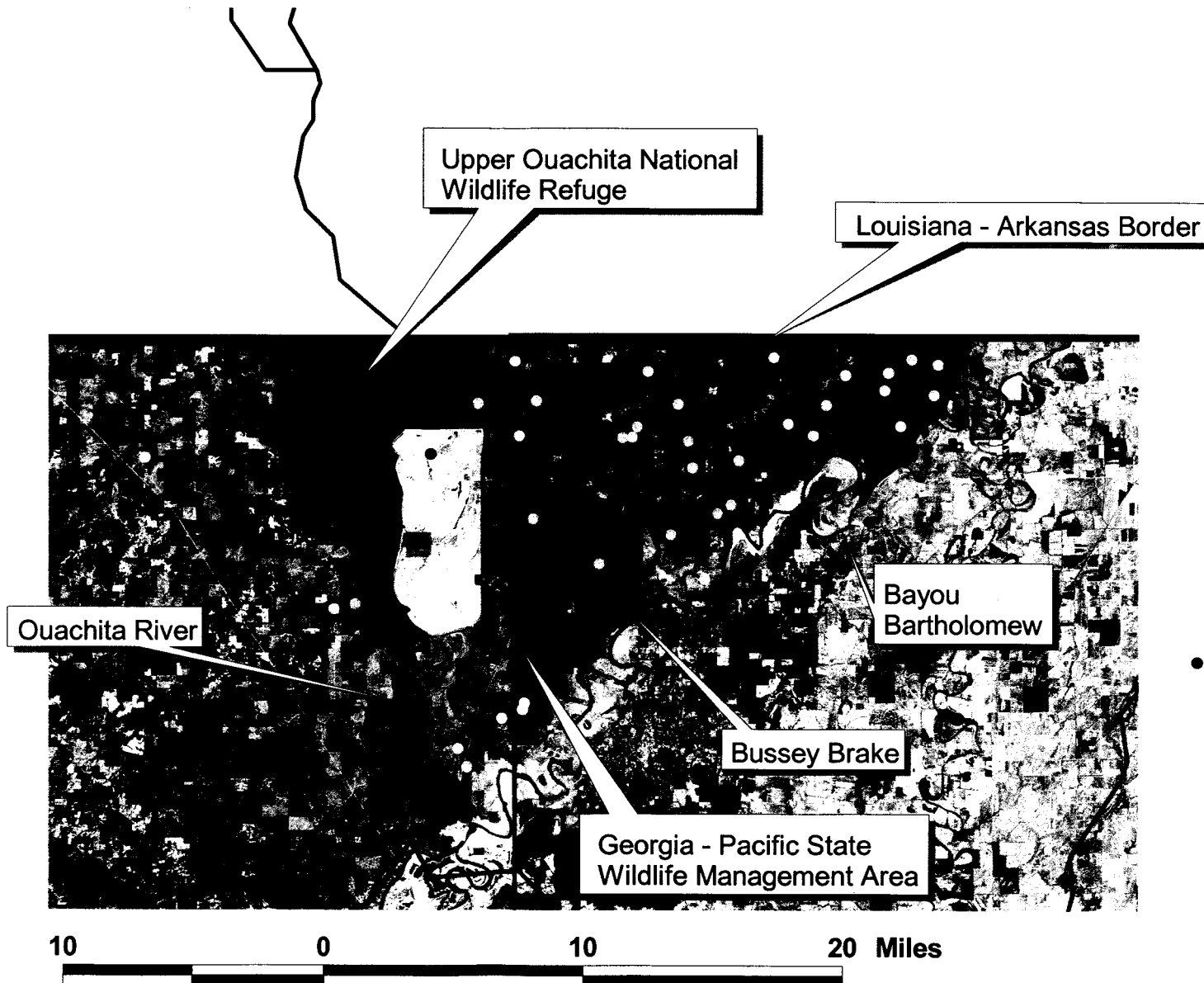
RCW Clusters in the Vicinity of MTR IR-070



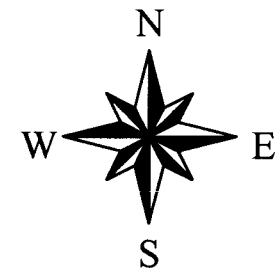
• RCW Clusters



Bald Eagle Nests in the Vicinity of MTR IR-070



• Bald Eagle Nests



STATE OF MISSISSIPPI

County of Lowndes

PERSONALLY CAME before
public in and for Lowndes County
Commercial Dispatch, a new
Columbus, who, being duly sworn,
COMMERCIAL DISPATCH
prescribed in Section 13-3-31 of the
amended effective July 1, 1997,
notice, of which the annexed is a

has been made in said paper
to-wit:

On the 15th day of March

On the _____ day of _____

On the _____ day of _____

On the _____ day of _____

On the _____ day of _____

On the _____ day of _____, 2004

SWORN TO and subscribed before me, this

15th day of March, 2004

Ten Cal
Notary Public

MY COMMISSION EXPIRES MAY 17, 2005

PUBLIC NOTICE

NOTICE OF AVAILABILITY
DRAFT ENVIRONMENTAL ASSESSMENT
AND DRAFT FINDING OF NO SIGNIFICANT IMPACT
T-6 AIRCRAFT BASING AND OPERATION
COLUMBUS AFB, MISSISSIPPI

An Environmental Assessment (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 and Council on Environmental Quality and Air Force regulations implementing NEPA to analyze the potential environmental consequences of basing and operating T-6 aircraft as a replacement for the T-37 at Columbus AFB, Mississippi.

The EA analyzes potential impacts from T-6 flying training operations at the base, the Shuqualak Auxiliary Airfield, Mississippi, the Golden Triangle Regional Airport at Columbus, Mississippi, and on military training routes located in Mississippi, Alabama, Tennessee, Arkansas, and Louisiana. The No Action Alternative also was analyzed in the EA. The Draft EA and Draft Finding of No Significant Impact, dated March 2004, are available for review at the following locations:

Columbus-Lowndes County Public Library
314 North 7th Street, Columbus, MS 39701

U.S. Air Force Base Library, 555 D Street, Columbus, AFB 39710

Privacy Advisory: Your comments on this Draft EA are requested. Letters or other written comments provided may be published in the Final EA. Comments will normally be addressed in the Final EA and made available to the public. Any personal information provided will be used only to identify your desire to make a statement during the public comment period or to fulfill requests for copies of the Final EA or associated documents. Private addresses will be compiled to develop a mailing list for those requesting copies of the Final EA. However, only the names of the individuals making comments and specific comments will be disclosed; personal home addresses and phone numbers will not be published in the Final EA.

Public comments on the EA will be accepted through April 14, 2004. Written comments and inquiries on the EA should be directed to 14th Flying Training Wing, Public Affairs Office, 555 Seventh Street, Suite 203, Columbus AFB, Mississippi 39710, Phone 662-434-7067.



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

16 Mar 04

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

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Ms. Lunceford,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

The Air Force is requesting input from federal, state, and local agencies on the Draft EA and the 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.

Your assistance in providing this information by 14 Apr 04 is greatly appreciated. Responses should be sent directly to Mr. Frank Lockhart at the address listed above. Mr. Lockhart can be reached at (662) 434-3130.

Sincerely,

A handwritten signature in black ink, reading "Michael F. Smith", is positioned above the typed name.

MICHAEL F. SMITH, REM
Chief, Environmental Flight

2. Attachments:
1. Draft Environmental Assessment
 2. Draft Finding of No Significant Impact



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

16 Mar 04

Ms. Mildred Tharpe
State Clearinghouse for Federal Programs
1301 Woolfolk Bldg Suite E
501 North West Street
Jackson MS 39213

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Ms. Tharpe,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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MICHAEL F. SMITH, REM
Chief, Environmental Flight

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

16 Mar 04

Mr. Herbert Harper
Director Tennessee Historical Commission
Clover Bottom Mansion
2941 Lebanon Road
Nashville TN 37243

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Mr. Harper,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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Chief, Environmental Flight

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

16 Mar 04

Tennessee Wildlife Resources Agency
Post Office Box 40747
Nashville TN 37204

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

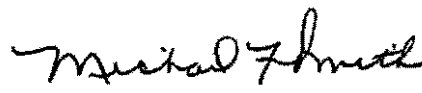
Dear Tennessee Wildlife Resources Agency,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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Chief, Environmental Flight

2. Attachments:
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 2. Draft Finding of No Significant Impact



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

16 Mar 04

Alabama Historical Commission
468 South Perry Street
Montgomery AL 36130

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Alabama Historical Commission,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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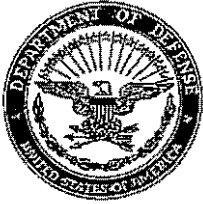
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Sincerely,

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MICHAEL F. SMITH, REM
Chief, Environmental Flight

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1. Draft Environmental Assessment
 2. Draft Finding of No Significant Impact



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

16 Mar 04

Alabama Department of Conservation & Natural Resources
64 North Union Street
Montgomery AL 36130

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Alabama Department of Conservation & Natural Resources,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

The Air Force is requesting input from federal, state, and local agencies on the Draft EA and the 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.

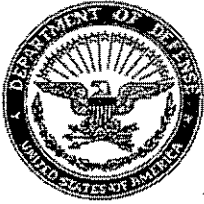
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Sincerely,

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MICHAEL F. SMITH, REM
Chief, Environmental Flight

2. Attachments:
1. Draft Environmental Assessment
 2. Draft Finding of No Significant Impact



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

16 Mar 04

Arkansas Game & Fish Commission
2 Natural Resources Drive
Little Rock AR 72205

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Arkansas Game & Fish Commission,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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Sincerely,

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MICHAEL F. SMITH, REM
Chief, Environmental Flight

2. Attachments:
1. Draft Environmental Assessment
 2. Draft Finding of No Significant Impact



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

16 Mar 04

Arkansas Natural Heritage Commission
1500 Tower Buidling
323 Center Street
Little Rock AR 72201

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Arkansas Natural Heritage Commission,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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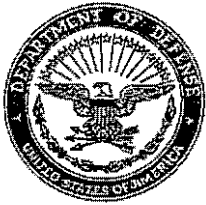
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MICHAEL F. SMITH, REM
Chief, Environmental Flight

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1. Draft Environmental Assessment
 2. Draft Finding of No Significant Impact



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

16 Mar 04

Ms. Tracy Copeland
Manager State Clearinghouse Office of Intergovernmental Services
Department of Finance and Administration
1515 West 7th Street Room 412
Little Rock AR 72203

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Ms. Copeland,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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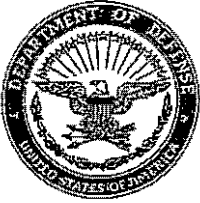
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Chief, Environmental Flight

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

16 Mar 04

United States Fish and Wildlife Service
Cookeville Ecological Field Services Office
446 Neal Street
Cookeville TN 38501

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear United States Fish and Wildlife Service,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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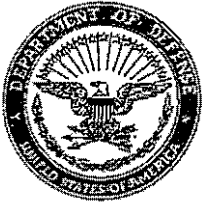
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Chief, Environmental Flight

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

16 Mar 04

United States Fish and Wildlife Service
LaFayette Ecological Field Services Office
646 Cajundome Blvd Suite 400
LaFayette LA 70506

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear United States Fish and Wildlife Service,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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Chief, Environmental Flight

2. Attachments:
1. Draft Environmental Assessment
 2. Draft Finding of No Significant Impact



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

16 Mar 04

United States Fish and Wildlife Service
Conway Ecological Field Services Office
1500 Museum Road Suite 105
Conway AR 72032

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear United States Fish and Wildlife Service,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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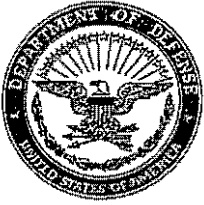
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Chief, Environmental Flight

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

16 Mar 04

United States Fish and Wildlife Service
Daphne Ecological Field Services Office
Post Office Box 1190
Daphne AL 36526

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear United States Fish and Wildlife Service,

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Chief, Environmental Flight

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 2. Draft Finding of No Significant Impact



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

16 Mar 04

Louisiana Department of Cultural Development
Post Office Box 94361
Baton Rouge LA 70804

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Louisiana Department of Cultural Development,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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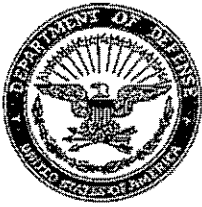
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MICHAEL F. SMITH, REM
Chief, Environmental Flight

2. Attachments:
1. Draft Environmental Assessment
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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 14TH FLYING TRAINING WING
COLUMBUS AIR FORCE BASE MISSISSIPPI

16 Mar 04

Louisiana Department of Wildlife and Fisheries
2000 Quail Drive
Baton Rouge LA 70808

Michael F. Smith
14 CES/CEV
555 Simler Boulevard Suite 108
Columbus AFB MS 39710-6010

Dear Louisiana Department of Wildlife and Fisheries ,

The U.S. Air Force prepared the attached Draft Environmental Assessment (EA) to assess any potential environmental impacts of the proposed replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base (AFB), Mississippi (MS). Training operations in the T-6 aircraft would occur at the base, the Shuqualak Auxiliary Airfield, MS, the Golden Triangle Regional Airport at Columbus, MS, and on military training routes located in Mississippi and Alabama.

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MICHAEL F. SMITH, REM
Chief, Environmental Flight

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1. Draft Environmental Assessment
 2. 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
March 19, 2004

Michael F. Smith
Chief, Environmental Flight
Department of the Air Force
Columbus Air Force Base
14 CES/CEV
555 Simler Boulevard
Columbus AFB, Mississippi 39710

Dear Mr. Smith:

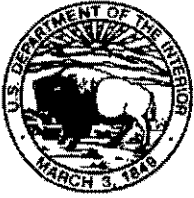
The U.S. Fish and Wildlife Service (Service) has reviewed the information in your draft biological assessment dated March 2004, for T-6 Aircraft Basing and Operation at Columbus Air Force Base, Lowndes County, Mississippi. Our comments are submitted in accordance with the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e), and the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.).

In a letter dated August 25, 2003, the Service provided your office with information regarding the potential presence of the federally listed threatened bald eagle (*Haliaeetus leucocephalus*) on or near the project location. You have surveyed these areas 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



United States Department of the Interior

FISH AND WILDLIFE SERVICE

646 Cajundome Blvd.
Suite 400
Lafayette, Louisiana 70506

March 25, 2004

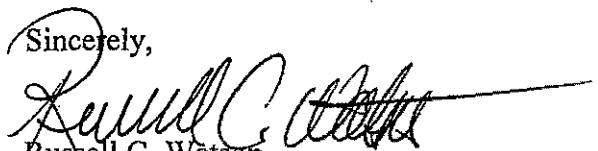
Mr. Frank Lockhart
14 CES/CEV
555 Simler Boulevard
Columbus AFB, Mississippi 39710-6010

Dear Mr. Lockhart:

In response to the Department of the Air Force's, March 16, 2004, request, personnel from the U.S. Fish and Wildlife Service's (Service) Louisiana Field Office have reviewed the draft Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the 14th Flying Training Wing, Columbus Air Force Base, Mississippi. Those documents were prepared under the authority of the National Environmental Policy Act of 1969 (83 Stat. 852, as amended; 42 U.S.C. 4321 et seq.), to assess the impacts of the proposed replacement of 96 T-37 training aircraft with up to 89 T-6 training aircraft, and a proposed facility construction project. We submit the following comments in accordance with the Endangered Species Act of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq.), and the National Environmental Policy Act. Please note, however, that our comments only pertain to Federal-trust resources within the State of Louisiana. The Department of the Air Force must coordinate with Service Field Offices in Mississippi, Alabama, Arkansas, and Tennessee as well.

The documents are well-organized and well-written. The Service concurs with your determination that the project is not likely to adversely affect Federally listed endangered or threatened species in Louisiana. Unless the scope and location of the proposed project changes, no further consultation shall be required with this office.

We appreciate the opportunity to comment on the draft EA and FONSI. If questions arise, please contact Bill Vermillion (337/291-3133) of this office.

Sincerely,

Russell C. Watson
Supervisor
Louisiana Field Office

cc: Upper Ouachita NWR, Farmerville, LA
LDWF, Natural Heritage Program, Baton Rouge, LA



STATE OF MISSISSIPPI
DEPARTMENT OF FINANCE AND ADMINISTRATION

MEMORANDUM

**TO: COLUMBUS AIR FORCE BASE
14TH FLYING TRAINING WING
555 SIMLER BLVD., SUITE 108
COLUMBUS MS 39710 6010**

DATE: APR 07 2004

FROM: STATE CLEARINGHOUSE FOR FEDERAL PROGRAMS

**SUBJECT: REVIEW COMMENTS - Activity:
DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED REPLACEMENT OF
T-37 AIRCRAFT WITH T-6 AIRCRAFT AT COLUMBUS AFB. TRAINING
OPERATIONS IN THE T-6 AIRCRAFT WOULD OCCUR AT THE BASE,
SHUQUALAK AUX. AIRFIELD, GOLDEN TRIANGLE REGIONAL AIRPORT,
AND ON MILITARY TRAINING ROUTES IN MISSISSIPPI & ALABAMA.
State Application Identifier Number MS040318-006**

Location: MULTI COUNTY

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)

EO 12372
WEEKLY LOG
PGM=N150

STATE OF MISSISSIPPI
STATE CLEARINGHOUSE FOR FEDERAL PROGRAMS

DATE 03/17/04
03/23/04

MS APPLICANT NO.: MS040318-006
IMPACT AREA(S): MULTI-COUNTY

APPLICANT:
COLUMBUS AIR FORCE BASE
14TH FLYING TRAINING WING
555 SIMLER BLVD., SUITE 108
COLUMBUS MS 39710-6010

CONTACT: FRANK LOCKHART
PHONE: (662) 434-3130

FEDERAL AGENCY: DEPARTMENT OF AIR FORCE

FUNDING: FEDERAL
LOCAL
TOTAL

APPLICANT
OTHER

STATE
PROGRAM

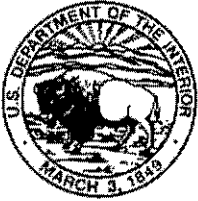
DESCRIPTION: DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED REPLACEMENT OF
T-37 AIRCRAFT WITH T-6 AIRCRAFT AT COLUMBUS AFB. TRAINING
OPERATIONS IN THE T-6 AIRCRAFT WOULD OCCUR AT THE BASE,
SHUQUALAK AUX. AIRFIELD, GOLDEN TRIANGLE REGIONAL AIRPORT,
AND ON MILITARY TRAINING ROUTES IN MISSISSIPPI & ALABAMA.
CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER

1301 WOOLFOLK BLDG., SUITE E - JACKSON, MS 39201 (601) 359-6762

- THIS IS AN ACKNOWLEDGEMENT ONLY -

STATE AGENCIES MUST REVIEW CERTAIN PROPOSALS PRIOR TO
RECEIVING MISSISSIPPI INTERGOVERNMENTAL REVIEW PROCESS CLEARANCE.
THE MISSISSIPPI DEPARTMENT OF ARCHIVES AND HISTORY REVIEWS ANY
PROPOSALS INVOLVING CONSTRUCTION, SUCH AS A HIGHWAY OR AN
APARTMENT COMPLEX FOR COMPLIANCE WITH CULTURAL RESOURCES AND
HISTORIC PRESERVATION. MISSISSIPPI DEPARTMENT OF ENVIRONMENTAL
QUALITY, OFFICE OF POLLUTION CONTROL, REVIEWS APPLICATIONS IN
ACCORDANCE WITH THE FEDERAL WATER POLLUTION CONTROL ACT. THE
MISSISSIPPI DEPARTMENT OF MARINE RESOURCES REVIEWS APPLICATIONS
FOR CONSISTENCY WITH THE COASTAL PROGRAM.

IF APPLICATIONS ARE FOR PROJECTS OF LOCAL IMPACT, THEY
SHOULD BE SENT TO THE APPROPRIATE PLANNING AND DEVELOPMENT
DISTRICT AT THE SAME TIME. PLEASE NOTE THAT ONE OF OUR
REQUIREMENTS IS THE USE OF STANDARD FORM 424. THE DEPARTMENT
OF FINANCE AND ADMINISTRATION PREPARES AND DISTRIBUTES A WEEKLY
LOG LISTING PERTINENT INFORMATION CONTAINED ON THIS FORM. OUR
ADDRESS IS 1301 WOOLFOLK BLDG., SUITE E - JACKSON, MS 39201 AND
OUR PHONE NUMBER IS (601)359-6762.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

446 Neal Street
Cookeville, TN 38501

April 8 2004

Mr. Frank Lockhart
Department of the Air Force
Headquarters 14th Flying Training Wing
14 CES/CEV
555 Simler Boulevard, Suite 108
Columbus AFB, Mississippi 39710-6010

Re: FWS #04-0947

Dear Mr. Lockhart:

Thank you for your letter and enclosure of March 16, 2004, transmitting a draft environmental assessment for the replacement of T-37 aircraft with T-6 aircraft at Columbus Air Force Base, Mississippi. Fish and Wildlife Service biologists have reviewed the document and we offer the following comments.

The draft environmental assessment adequately identifies resources in areas that will be affected by the proposed action. It also contains an adequate evaluation of the potential impacts to those resources.

We concur with your finding that the use of the new T-6 aircraft on the existing training routes is not likely to adversely affect the federally threatened bald eagle (*Haliaeetus leucocephalus*), provided that the aircraft distance buffers from known bald eagle nests – i.e., 500 feet vertically and 1,500 feet horizontally – are strictly adhered to during training flights.

The scale of the maps showing the flight training routes prevents us from determining if route VR-1051 passes over the Tennessee National Wildlife Refuge or the Cheatham Wildlife Management Area. We recommend that a more detailed map of training route VR-1051 be included in the final environmental assessment so we can verify whether or not adverse impacts to wildlife resources on the refuge or the management area might result from aircraft flying over at an altitude of 500 feet above ground level.

Thank you for the opportunity to comment on this draft environmental assessment. If you have any questions about our comments on the document, please contact Jim Widlak of my staff at 931/528-6481, ext. 202.

Sincerely,

A handwritten signature in black ink, appearing to read "Lee A. Barclay". The signature is fluid and cursive, with the first name "Lee" and last name "Barclay" clearly distinguishable.

Lee A. Barclay, Ph.D.
Field Supervisor



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

19 Apr 04

Mr. Lee A. Barclay, Ph.D.
Field Supervisor
United States Fish and Wildlife Service
446 Neal Street
Cookeville, Tennessee 38501

1Lt Gary J. Moore
14 CES/CEVA
555 Simler Blvd Suite 108
Columbus AFB MS 39710-6010

Dear Mr. Barclay,

Thank you for the 8 April 2004 letter in which you concurred with the finding in the *Draft Environmental Assessment T-6 Aircraft Basing and Operation, March 2004*. Aircraft operations on VR-1051 and IR-061 are "not likely to adversely affect the federally threatened bald eagle (*Haliaeetus leucocephalus*) provided that the aircraft distance buffers from known bald eagle nests (500 feet vertically and 1,500 feet horizontally) are strictly adhered to during training flights."

Your letter seems to indicate you anticipate review of a subsequent version of the environmental assessment (EA). The Air Force does not plan on distributing a final EA to agencies or the public for review.

The letter also indicates an interest in the relationship of military training routes (MTRs) VR-1051 and IR-061 and the Tennessee National Wildlife Refuge and the Cheatham Wildlife Management Area. The attached figure details the relationship of the two MTRs, the refuge and the management area. The figure indicates the MTR corridors overfly portions of the refuge and nearly all of the management area, aircraft altitude when over flying these areas is at a minimum of no lower than 500 feet above ground level, thereby complying with your altitude recommendation.

If you have any questions or require any additional information please contact Mr. Frank Lockhart at (662) 434-3130.

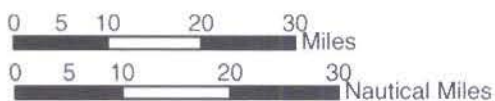
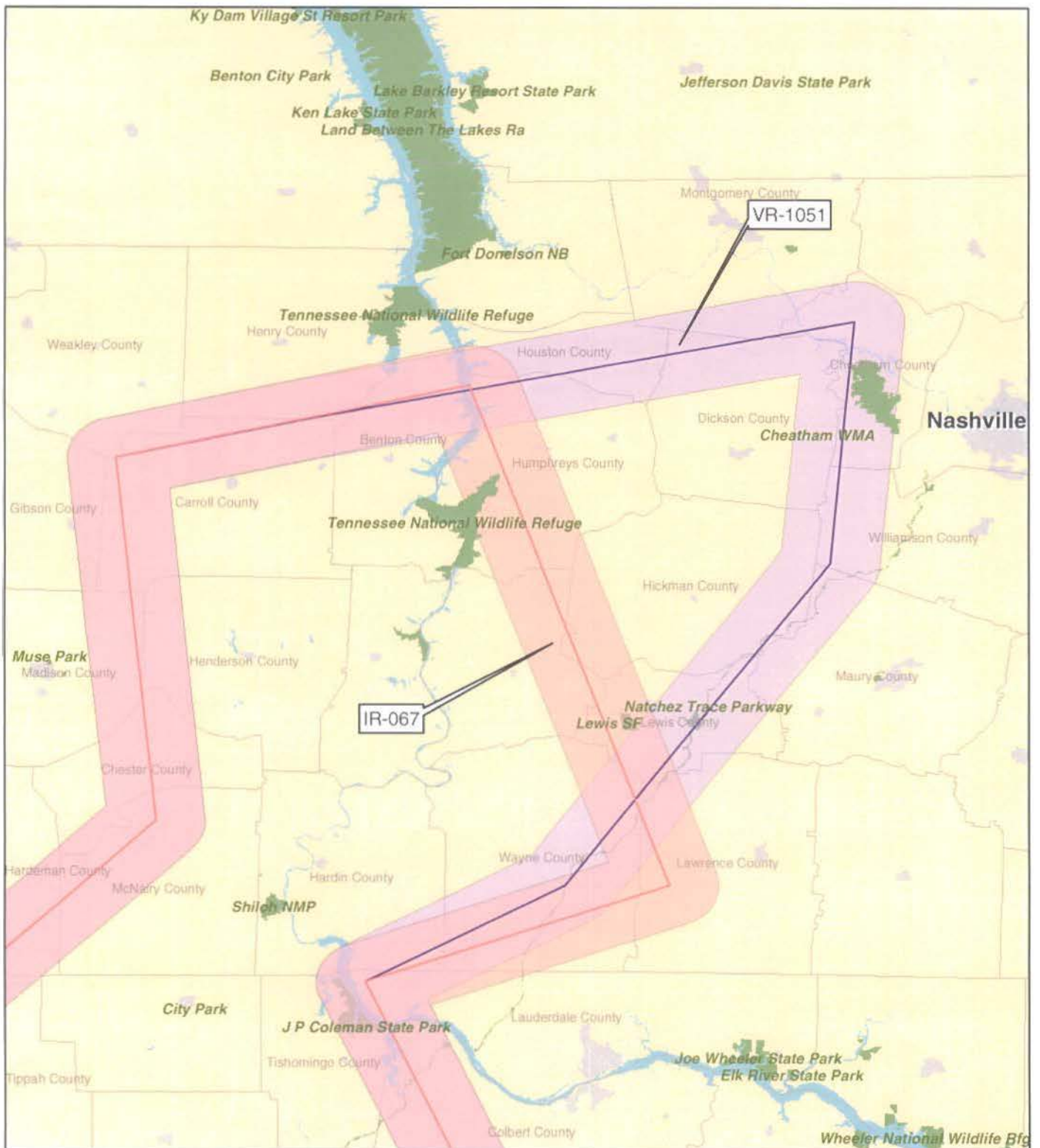
Sincerely,

A handwritten signature in cursive script that reads "Gary J. Moore".

GARY J. MOORE, 1LT, USAF
Deputy Commander, Environmental Flight

Attachment:

Figure Detailing VR-1051 and IR-061 and the Tennessee National Wildlife Refuge and the Cheatham Wildlife Management Area



- VR-1051 Corridor
- IR-067 Corridor
- Parks (Regional)

April 15, 2004

Michael F. Smith, REM
Chief, Environmental Flight
Headquarters 14th Flying Training Wing
14 CES/CEV
555 Simler Blvd., Suite 108
Columbus AFB MS 39710-6010

Re: AHC 2004-0662
Environmental Assessment (EA) for T-6 Aircraft Basing and
Operation
Jefferson County

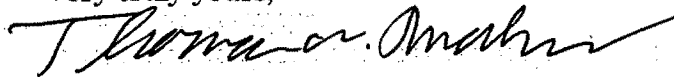
Dear Mr. Smith:

Upon review of the proposed project, the Alabama Historical Commission has determined that the project activities will have no effect on any known cultural resources listed on or eligible for the National Register of Historic Places. Therefore, our office can concur with the proposed activities.

However, should artifacts or archaeological features be encountered during project activities, work shall cease and our office shall be consulted immediately. Artifacts are objects made, used or modified by humans, they include but are not excluded to arrowheads, broken pieces of pottery or glass, stone implements, metal fasteners or tools, etc. Archaeological features are stains in the soil that indicated disturbance by human activity, some examples are post holes, building foundations, trash pits and even human burials. This stipulation shall be placed on the construction plans to insure contractors are aware of it.

We appreciate your efforts on this issue. If we may be of further service or if you have any questions or comments, please contact Stacye Hathorn of our office.

Very truly yours,



for: Elizabeth Ann Brown
Deputy State Historic Preservation Officer

EAB/LDB/sgb



LEE H. WARNER
Executive Director

468 South Perry Street
Montgomery, Alabama
36130-0900

tel 334 242•3184
fax 334 240•3477



STATE OF ARKANSAS
**Department of Finance
and Administration**

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

May 5, 2004

Mr. Frank Lockhart
Department of the Air Force
HeadQuarters 14th Flying Training WING
Columbus Air Force Base Mississippi 39710-6010

RE: Draft Finding of no Significant Impact Draft Environmental Assessment T-6 Aircraft Basing
and Operation

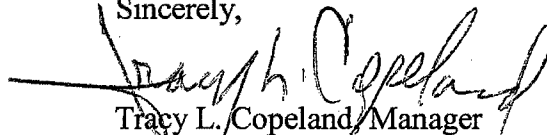
Dear Mr. Lockhart:

The State Clearinghouse has received the above document pursuant to the Arkansas
Project Notification and Review System.

To carry out the review and comment process, this document was forwarded to members
of the Arkansas Technical Review Committee. Resulting comments received from the Technical
Review Committee which represents the position of the State of Arkansas are attached.

The State Clearinghouse wishes to thank you for your cooperation with the Arkansas
Project Notification and Review System.

Sincerely,


Tracy L. Copeland/Manager
State Clearinghouse

TLC/lr
Enclosure
CC: Randy Young, AS&WCC



J. Randy Young, PE
Executive Director

Arkansas Soil & Water Conservation Commission

101 East Capitol, Suite 350
Little Rock, Arkansas 72201
www.accessarkansas.org/aswcc

Phone: (501) 682-1611
Fax: (501) 682-3991
E-mail: aswcc@mail.state.ar.us



Mike Huckabee
Governor

MEMORANDUM

TO: Mr. Tracy Copeland, Manager
State Clearinghouse

FROM: *JRY* Mr. J. Randy Young, P.E.
Executive Director

SUBJECT: Draft Finding of no Significant Impact
Draft Environmental Assessment
T-6 Aircraft Basing and Operation

RECEIVED

MAY 05 2004

INTERGOVERNMENTAL
SERVICES
STATE CLEARINGHOUSE

DATE: May 4, 2004

Members of the Technical Review Committee have reviewed the above referenced project: the T-37 aircraft currently is being used as the primary training aircraft in Specialized Undergraduate Pilot Training (SUPT). It has shortcomings in performance and design, training effectiveness, safety and supportability. Production of the aircraft began in 1952 and ended in 1968. As aircrafts are lost to attrition, they cannot be replaced. The proposed action converts Columbus AFB to the Joint Primary Aircraft Training System, which includes the higher performance and more modern T-6 aircraft and a ground-based training system consisting of aircraft simulators and academic courseware. A warehouse will be constructed. Columbus AFB T-6 aircrews will accomplish airfield operations at the base, the Shuqualak Auxiliary Airfield, and the Golden Triangle Regional Airport, as well as low-level navigation training on two military training routes (MTRs). The number of military, government civilian, and contractor personnel at the base, as well as the average daily student load will remain at approximately the current levels. The Air Force will continue to use the T-37 as the primary training aircraft in the SUPT program at Columbus AFB. The Committee supports this project. Comments are attached for your review.

The opportunity to comment is appreciated.

JRY/ddavis

An Equal Opportunity Employer



STATE OF ARKANSAS

OFFICE OF INTERGOVERNMENTAL SERVICES

Department of Finance and Administration

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
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Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

#1652

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland *TRC* Manager - State Clearinghouse

DATE: March 22, 2004

SUBJECT: Draft Finding of no Significant Impact/Draft Environmental Assessment - T-6 Aircraft Basing and Operation

RECEIVED
6/8/04 11:35
SOL. DIVISION UNIT

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

Your comments should be returned by April 12, 2004 to - Mr. Randy Young, Chairman, Technical Review Committee, 101 E. Capitol, Suite 350, Little Rock, AR 72203.

IF you have no reply within that time we will assume you have no comments and will proceed with the sign-off.

NOTE: It is imperative that your response be in to the ASWCC office by the date requested. Should your Agency anticipate having a response which will be delayed beyond the stated deadline for comments, please contact Ms. Debby Davis of the ASWCC at (501) 682-1611 or the State Clearinghouse Office.

☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to ADEQ Only)

Name(print) Kolbert Agency ASWCC Date 4-21-04

Telephone Number _____

STATE OF ARKANSAS

**Department of Finance
and Administration**

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/cfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland ~~TLC~~ Manager - State Clearinghouse

DATE: March 22, 2004

SUBJECT: Draft Finding of no Significant Impact/Draft Environmental Assessment - T-6 Aircraft Basing and Operation

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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☐ Support
 ☐ Do Not Support (Comments Attached)

☐ Comments Attached
 ☐ Support with Following Conditions

☒ No Comments
 ☐ Non-Degradation Certification Issues
(Applies to ADEQ Only)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

Name (print) Jerry O. Bredshaw Agency COSL Date 4/9/04
Telephone Number 623-3310



STATE OF ARKANSAS

OFFICE OF INTERGOVERNMENTAL SERVICES

Department of Finance
and Administration

1515 West Seventh Street, Suite 412
Post Office Box 8031
Little Rock, Arkansas 72203-8031
Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, Manager - State Clearinghouse

DATE: March 22, 2004

SUBJECT: Draft Finding of no Significant Impact/Draft Environmental Assessment - T-6 Aircraft Basing and Operation

RECEIVED
MAR-6 AM 9:36
SOIL & WATER CONM.

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to ADEQ Only)

Name(print) JAMES L. NORTON Agency Ark. F&A Date 2-29-04

Telephone Number 501-256-1161



STATE OF ARKANSAS

OFFICE OF INTERGOVERNMENTAL SERVICES

**Department of Finance
and Administration**

1515 West Seventh Street, Suite 412
Post Office Box 8031
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Phone: (501) 682-1074
Fax: (501) 682-5206
<http://www.state.ar.us/cfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland, ~~Manager~~ ^{TLC} - State Clearinghouse

DATE: March 22, 2004

SUBJECT: Draft Finding of no Significant Impact/Draft Environmental Assessment - T-6 Aircraft Basing and Operation

Please review the above stated document under provisions of Section 404 of the Clean Water Act, Section 102(2) of the National Environmental Policy Act of 1969 and the Arkansas Project Notification and Review System.

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☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to ADEQ Only)

Name(print) Mac Woodward Agency AGC Date 3-29-04

Telephone Number 683-0113



STATE OF ARKANSAS

Department of Finance
and Administration

OFFICE OF INTERGOVERNMENTAL SERVICES

1515 West Seventh Street, Suite 412
Post Office Box 8031
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Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland *TLC* Manager - State Clearinghouse

DATE: March 22, 2004

SUBJECT: Draft Finding of no Significant Impact/Draft Environmental Assessment - T-6 Aircraft Basing and Operation

RECEIVED
04 MAR 23 AM 9:35
SOIL & WATER CONSERVATION

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☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to ADEQ Only)

Name(print) Steve Jones Agency ADEQ Date 7-23-04

Telephone Number 501-682-7311



STATE OF ARKANSAS

OFFICE OF INTERGOVERNMENTAL SERVICES

Department of Finance
and Administration

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Fax: (501) 682-5206
<http://www.state.ar.us/dfa>

MEMORANDUM

TO: All Technical Review Committee Members

FROM: Tracy L. Copeland ~~Manager~~ - State Clearinghouse

DATE: March 22, 2004

SUBJECT: Draft Finding of no Significant Impact/Draft Environmental
Assessment - T-6 Aircraft Basing and Operation

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☐ Support ☐ Do Not Support (Comments Attached)

☐ Comments Attached ☐ Support with Following Conditions

☒ No Comments ☐ Non-Degradation Certification Issues
(Applies to ADEQ Only)

Name(print) Harold Seifert Agency Arkansas Department of Health Date 03-25-04

Telephone Number 501-661-2623

Division of Engineering
Arkansas Department of Health
4815 West Markham
Little Rock, AR 72205-3867

RECEIVED
04 MAR 24 PM 3:05
ARKANSAS DEPT. OF HEALTH
DIVISION OF ENGINEERING