Final

MODIFICATIONS TO GAMECOCK ALPHA MILITARY OPERATIONS AREA ENVIRONMENTAL ASSESSMENT

United States Air Force
Air Combat Command

Prepared for:
Pope Air Force Base
North Carolina

June 2006

ACRONYMS AND ABBREVIATIONS

A	Alpha
ACC	Air Combat Command
AEF	Air and Space Expeditionary Force
AFB	Air Force Base
AFI	Air Force Instruction
AGL	Above Ground Level
AFSC	Air Force Safety Center
Air Force	United States Air Force
AQCR	Air Quality Control Region
ARTCC	Air Route Traffic Control Center
ATCCA	Air Traffic Control Assigned Airspace
ATCT	Air Traffic Control Tower
AW	Airlift Wing
B	Bravo
BAM	Bird Avoidance Model
BASH	Bird/Wildlife Aircraft Strike Hazard
C	Charlie
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAS	Close Air Support
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
dB	Decibel
DB	Dive Bomb
DoD	Department of Defense
DNL	Day-Night Average Sound Level
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FG	Fighter Group
FONSI	Finding of No Significant Impact
HADB	High Altitude Dive Bomb
HAS	High Angle Strafe
H_2S	Hydrogen Sulfur
HQ	Headquarters
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
IFR	Instrument Flight Rules
IR	Instrument Route
LASTE	Low Altitude Safety and Targeting Enhancement System
L	Level
Ldnmr	Onset Rate-Adjusted Monthly Day-Night Average Sound Level
LOA	Letters of Agreement
MOA	Military Operations Area
MSL	Mean Sea Level
MTR	Military Training Route
NAAQS	National Ambient Air Quality Standards
NAS	National Airspace System
NCDAQ	North Carolina Division of Air Quality
NEPA	National Environmental Policy Act
NESHAPS	National Emissions Standards for Hazardous Air Pollutants
NM	Nautical Miles
NO_2	Nitrogen Dioxide
NO_x	Nitrogen Oxide
OSS	Operations Support Squadron
Pb	Lead
$PM_{2.5}$	Particulate Matter less than 2.5 Microns
PM_{10}	Particulate Matter less than 10 Microns
ppm	Parts Per Million
PSD	Prevention of Significant Deterioration
SEL	Sound Exposure Level
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SKE	Station Keeping Equipment
SO_2	Sulfur Dioxide
U.S.	United States
UND	University of North Dakota
USACE	United States Army Corps of Engineers
USC	United States Code
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
VFR	Visual Flight Rules
VR	Visual Route

FINAL
FINDING OF NO SIGNIFICANT IMPACT

1.0 NAME OF THE PROPOSED ACTION

Modifications to Gamecock Alpha (A) Military Operations Area (MOA).

2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

The United States Air Force (Air Force) in cooperation with the Federal Aviation Administration (FAA) proposes the modification of special use airspace currently designated the Gamecock Alpha (A) military operations area (MOA) in North Carolina. Implementation of the proposal, to lower the floor from 7,000 feet mean sea level (MSL) to 3,000 feet above ground level (AGL) thereby increasing the vertical extent of the special use military airspace by approximately 3,800 feet, would enhance the effectiveness of training for the 23d Fighter Group (23 FG) at Pope Air Force Base (AFB) by providing air-to-ground sortie-operations training in airspace managed and scheduled by Pope AFB. Lowering the floor of the Gamecock A MOA would increase the vertical extent of the airspace unit and permit A-10 pilots to practice simulated high altitude dive bomb (HADB), high angle strafe (HAS), and dive bomb (DB) maneuvers. In addition, the modification would involve renaming the MOA as the Warthog MOA and dividing it internally into three sub-areas. The proposed modifications to the Gamecock A MOA have been analyzed in the *Modifications to Gamecock Alpha Military Operations Area Environmental Assessment* prepared by the Air Force.

Under the proposed action, the Air Force would implement three modifications. First, the name of the MOA would be changed from Gamecock A MOA to Warthog A MOA. The MOA is managed by Pope Air Force Base (AFB) and is used primarily by A-10 aircrews from the 23 FG of Pope AFB. Next, the floor of the MOA would be lowered from 7,000 MSL to 3,000 feet AGL to accommodate for HADB, HAS, and DB maneuvers. Lastly, the new airspace (i.e., 6,999 feet MSL to 3,000 feet AGL) would be split into two separate, independently operated areas – Warthog Bravo (B) MOA and Warthog Charlie (C) MOA to permit the airspace to be deactivated, as needed, for safety purposes. Utilization of Warthog B and C MOAs would be 80 percent versus 20 percent, respectively.

The 23 Operations Support Squadron (OSS) would implement several management actions if the proposed action were implemented. First, 23 OSS would coordinate with other military scheduling authorities (e.g., Shaw AFB, Seymour-Johnson AFB) to ensure the lower portions of Warthog B and Warthog C MOAs would not be activated when the military training routes (MTR) underneath the MOA are in use since the ceilings of several MTRs (i.e., IR-35, IR-62, VR-83, and VR-87) extend above 4,000 feet MSL. Second, the 23 OSS would develop procedures to expeditiously return the airspace when heavy traffic volumes into Elizabethtown Airport require that Washington Air Route Traffic Control Center (ARTCC) recall the airspace of Warthog B below 4,100 feet MSL. Lastly, the 23 OSS would develop procedures to expeditiously return the airspace when Fayetteville Approach determines that

traffic along Federal Airway V-136 and into local airports (i.e., Fayetteville, Charlotte, Wilmington, Myrtle Beach and Lumberton airports) reach volumes that necessitate recalling the airspace. These management actions would be defined in letters of agreement (LOA) currently being developed between the Department of Defense and FAA in accordance with FAA 7400.2 (personal communication, Judd 2006). The documents recording the LOA must be signed by all of the appropriate parties and filed with the Headquarters Air Combat Command Environmental Planning Function before any portion of the proposed action may be implemented.

In addition, the Air Force analyzed the no-action alternative in which no modifications to Gamecock A MOA would be implemented.

The draft EA and FONSI were made available to the public during a 30-day public review period from January 27, 2006 to February 27, 2006. An advertisement notifying the public of the availability of the draft EA and FONSI at local public libraries and on the World Wide Web at http://www.a7zpintegratedplanning.org was advertised in three local newspapers (*Robesonian*, *Fayetteville Observer*, and *Bladen Journal*). Comments were received from a private citizen/pilot, the Elizabethtown Airport/Economic Development Commission, and the North Carolina State Clearinghouse.

3.0 SUMMARY OF ENVIRONMENTAL CONSEQUENCES

The Environmental Assessment (EA) provides an analysis of the potential environmental consequences resulting from implementation of the proposed action. Eight resource categories were thoroughly analyzed to identify potential impacts. According to the analysis in this EA, implementation of the proposed action would not result in significant impacts to any resource category. Implementing the alternatives under the proposed action would not significantly affect existing conditions underneath or adjacent to Gamecock A MOA. The following summarizes and highlights the results of the analysis by resource category.

Airspace Management and Use. Lowering the MOA floor could conflict with other military aircraft on underlying MTRs and civilian aircraft operating in the area. The 23 OSS would implement several management actions in cooperation with the FAA and nearby military units to reduce potential impacts of other users of the airspace. First, 23 OSS would coordinate with other military scheduling authorities (e.g., Shaw AFB, Seymour-Johnson AFB) to ensure the lower portions of Warthog B and Warthog C MOAs would not be activated when the military training routes (MTR) underneath the MOA are in use since the ceilings of several MTRs (i.e., IR-35, IR-62, VR-83, and VR-87) extend above 4,000 feet MSL. Second, the 23 OSS would develop procedures to expeditiously return the airspace when heavy traffic volumes into Elizabethtown Airport require that Washington Air Route Traffic Control Center (ARTCC) recall the airspace of Warthog B below 4,100 feet MSL. Lastly, the 23 OSS would develop procedures to expeditiously return the airspace when Fayetteville Approach determines that traffic along Federal Airway V-136 and into local airports (i.e., Fayetteville, Charlotte, Wilmington, Myrtle Beach and

Lumberton airports) reach volumes that necessitate recalling the airspace. Consequences to civilian or general aviation would be minimal with implementation of the above management actions and no significant impact to this resource is expected. Airspace management and use would remain unchanged from existing conditions under the no-action alternative.

Noise. Noise levels in areas beneath the proposed Warthog MOAs would increase; however the overall impact would not be significant. Average noise levels are expected to increase by 0.5 dB under Warthog C MOA and 3 dB under Warthog B MOA. The expected increase is greater under Warthog B than under Warthog C because Warthog B is expected to be used more frequently than Warthog C. Average noise levels due to MOA operations beneath Warthog B and C would be 41 and 38.5 dB DNL respectively. Noise from training aircraft in Warthog B MOA could annoy some persons; however, the average noise levels resulting from the proposed action would be well below the 65 dB DNL threshold for significant public reaction, as identified in by the EPA (EPA 1974). Noise levels along the MTRs in the MOA would continue to range from a low of 51 dBA DNL to a high of 62 dBA DNL. There would be no change to noise from MTR's. In summary, no significant adverse impacts to this resource would be expected with implementation of the proposed action.

Air Quality. Approximately 383 A-10 sorties would fly below 5,000 feet AGL for a combined annual total time of 192 hours. Emissions from A-10 aircraft flying below 5,000 feet AGL (mixing height) would contribute less than 1 percent to the three-county region for any of the criteria pollutants resulting in no significant adverse impacts to local air quality. The contribution would be well below the regional significance criteria and *de minimus* thresholds established by the federal and state general conformity rule (NC Administrative Code 2D-1600). Impacts to air quality would not be expected under the no-action alternative since baseline emissions would remain unchanged.

Biological Resources. Impacts to biological resources including threatened, endangered, or sensitive species from increased noise levels in the expanded airspace would be minimal with no significant impacts to these resources. Effects to animals from noise have indicated most effects are caused by "startle effect" from aircraft traversing low-level routes. Aircrews from 23 FG would spend approximately 3 percent of their training time between 3,000 feet AGL and 4,500 feet MSL, well above currently utilized low-level routes under the MOA. No impacts under the no-action alternative would be anticipated.

Safety. A-10s would conduct approximately 3 percent of all sortie-operations training in the 3,000 feet AGL to 4,500 feet MSL altitude range. Impacts to safety would be minimal. The 23 OSS proposed management plans in addition to continued communication between Pope AFB's 23 OSS and Fayetteville Air Traffic Control Tower (ATCT) and Washington ARTCC would result in few adverse, yet not significant impacts to safety resources. Under the no-action alternative, impacts to flight safety would not be anticipated since the floor of the MOA would not change.

Environmental Justice. Increased noise levels in the Warthog B MOA could annoy some persons; however, the overall noise levels due to MOA operations would remain relatively low; therefore, no significant adverse impacts to environmental justice would be expected. Implementing the proposed action would not disproportionately affect minority or low-income populations. In addition, there would be no increased risk to children or adults on the ground from airspace operations. No impacts would be anticipated through implementation of the no-action alternative.

Land Management and Use, Visual, and Recreational Resources. No significant impacts to land management and use would be expected as there would be no change to general land use patterns, land ownership, or management of lands or special use land areas under this airspace proposal. Persons outdoors or engaged in recreational activities under and adjacent to either Warthog B or Warthog C MOAs could experience increased sightings of A-10 aircraft or be annoyed by increased noise levels; however, the overall impact to visual and recreation resources would not be significant. Under the no-action alternative, no changes to Gamecock A MOA would occur; therefore, no significant impacts to land use and management, visual, or recreation resources would be anticipated.

Cultural and Traditional Resources. Numerous cultural resources exist under the MOA; however, no impacts to archeological, architectural, or traditional resources would be expected. No impacts would occur from sonic booms as supersonic flight is not permitted in the MOA. No ordnance or other materials would be discharged and no construction activity would occur. Noise levels in the proposed Warthog B and C MOAs would be 41 dB DNL and approximately 38.5 dB DNL, respectively; however, there would be no adverse impact to these resources from noise under this proposal. Overall, impacts to cultural resources under the proposed action and no-action alternatives would be insignificant.

4.0 FINDINGS

On the basis of the findings of the EA, conducted in accordance with the requirement of the National Environmental Policy Act, the Council on Environmental Quality regulations, and 32 Code of Federal Regulations Part 989, and after careful review of the potential impacts of the proposed action and no-action alternative, I find that there would be no significant impact on the quality of the human or natural environment from modification of the Gamecock A MOA through implementation of the proposed action or no-action alternative as described in the EA. Therefore, I find there is no requirement to develop an Environmental Impact Statement.

MaryAnn H. Chisholm — 19 Jun 06

MARYANN H. CHISHOLM
Colonel, USAF
Chief, Programs Division

Date

COVER SHEET
MODIFICATIONS TO GAMECOCK A MOA
ENVIRONMENTAL ASSESSMENT

Responsible Agency: United States Air Force, Air Combat Command

Cooperating Agency: Federal Aviation Administration

Proposed Action: Modifications to Gamecock Alpha (A) Military Operations Area (MOA) in North Carolina

Written comments and inquiries regarding this document should be directed to:

HQ ACC/A7ZP
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In addition, the document can be viewed on and downloaded from the World Wide Web at www.a7zpintegratedplanning.org.

Designation: Final Environmental Assessment

Abstract: The purpose of the proposed action is to lower the floor of Gamecock A MOA from 7,000 feet mean sea level (MSL) to 3,000 feet above ground level (AGL). Lowering the floor of Gamecock A MOA would increase the vertical extent of the airspace unit and provide the dimensions necessary for A-10 pilots from the 23d Fighter Group at Pope Air Force Base (AFB) to efficiently and realistically conduct air-to-ground training sortie-operations. Under the proposed action, A-10 pilots would be able to perform high altitude dive bomb maneuvers and be able to conduct more realistic and less constrained simulated high angle strafe, and dive bomb maneuvers in airspace managed and scheduled by Pope AFB.

Under the proposed action, the Air Force would implement three modifications. First, the MOA name would be changed from Gamecock A MOA to Warthog A MOA; second, the floor of the MOA would be lowered from 7,000 feet MSL to 3,000 feet AGL; and lastly, the new airspace from 6,999 feet MSL to 3,000 feet AGL would be split into two separate, independently operated areas – Warthog Bravo (B) MOA and Warthog Charlie (C) MOA. Utilization of Warthog B and C MOAs would be 80 percent versus 20 percent, respectively. In addition to the proposed action, the Air Force analyzed the no-action alternative. Under the no-action alternative, the Air Force would not request modification of the Gamecock A MOA at this time.

Final

MODIFICATIONS TO GAMECOCK ALPHA MILITARY OPERATIONS AREA ENVIRONMENTAL ASSESSMENT

United States Air Force
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June 2006

EXECUTIVE SUMMARY

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The United States Air Force (Air Force) in cooperation with the Federal Aviation Administration (FAA) prepared this environmental assessment (EA) for modification of special use airspace currently designated the Gamecock Alpha (A) military operations area (MOA) in North Carolina. This EA analyzes the potential environmental consequences resulting from the Air Force proposal to lower the floor of the MOA from 7,000 feet mean sea level (MSL) to 3,000 feet above ground level (AGL). The proposed lowering of the floor of Gamecock A MOA would increase the vertical extent of the special use military airspace by approximately 3,800 feet, providing the dimensions necessary for A-10 pilots from the 23d Fighter Group (23 FG) at Pope Air Force Base (AFB) to conduct realistic air-to-ground training. The proposal would allow A-10 pilots to perform simulated high altitude dive bomb (HADB), high angle strafe (HAS), and dive bomb (DB) maneuvers in airspace managed and scheduled by Pope AFB. In addition, the modification would involve renaming the MOA as the Warthog MOA and dividing it internally into three sub-areas.

This EA has been prepared by the Air Force, Headquarters Air Combat Command (HQ ACC), in accordance with the requirements of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 [Code of Federal Regulations] CFR 1500-1508), and 32 CFR Part 989.

PURPOSE AND NEED FOR MODIFICATION OF GAMECOCK A MOA

To be proficient in the combat theater, the 23 FG must train as they would fight. A-10 aircraft have proven to be essential for close air support of troops in Iraq and Afghanistan. These conflicts have revealed a need to employ HADB, HAS, and DB maneuvers to a greater extent. Gamecock A MOA is the single dedicated special use airspace scheduled by Pope AFB. The MOA is used extensively (88 percent) by the 23 FG. The lateral size of the MOA is adequate for the types of training that the 23 FG is required to accomplish, but the vertical floor of 7,000 feet MSL does not allow realistic training in all required maneuver types. For example, to realistically perform a HADB, an A-10 would climb to approximately 13,000 feet MSL, fly nearly horizontal to gain speed, and then dive at an angle between 45 and 60 degrees for approximately 8 seconds before pulling up between 4,500 and 5,000 feet MSL, the minimum recovery altitude for this type of maneuver.

Other ranges and training airspace in North Carolina (i.e., Fort Bragg Training Range, Seymour-Johnson Echo, and Gamecock India) provide opportunities for valuable training for the 23 FG; however, due to limitations (i.e., vertical dimensions) they lack the necessary requirements for realistic HADB, HAS, and DB sortie-operations training.

PROPOSED ACTION AND NO-ACTION ALTERNATIVE

Under the proposed action, the Air Force would implement three modifications. First, the name of the MOA would be changed from Gamecock A MOA to Warthog A MOA. The MOA is managed by Pope Air Force Base (AFB) and is used primarily by A-10 aircrews from the 23 FG of Pope AFB. Next, the floor of the MOA would be lowered from 7,000 MSL to 3,000 feet AGL to accommodate simulated HADB, HAS, and DB maneuvers. Lastly, the new airspace (i.e., 6,999 feet MSL to 3,000 feet AGL) would be split into two separate, independently operated areas – Warthog Bravo (B) MOA and Warthog Charlie (C) MOA to permit the airspace to be recalled, as needed, for safety purposes. The 23 Operations Support Squadron (OSS) would employ several management actions that would deactivate the lower MOAs should the proposed action be implemented. These management actions would be defined in letters of agreement currently being developed between the Department of Defense and FAA in accordance with FAA 7400.2 (personal communication, Judd 2006).

First, 23 OSS would coordinate with other military scheduling authorities (e.g., Shaw AFB, Seymour-Johnson AFB) to ensure the lower portions of Warthog B and Warthog C MOAs would not be activated when the military training routes (MTR) underneath the MOA are in use since the ceilings of several MTRs (i.e., IR-35, IR-62, VR-83, and VR-87) extend above 4,000 feet MSL. Second, the 23 OSS would develop procedures to expeditiously return the airspace when heavy traffic volumes into Elizabethtown Airport require that Washington Air Route Traffic Control Center (ARTCC) recall the airspace of Warthog B MOA below 4,100 feet MSL. Lastly, the 23 OSS would develop procedures to expeditiously return the airspace when Fayetteville Approach determines that traffic along Federal Airway V-136 and into local airports (i.e., Fayetteville, Charlotte, Wilmington, Myrtle Beach, and Lumberton airports) reach volumes that necessitate recalling the airspace.

In addition to the proposed action, the Air Force analyzed the no-action alternative. Under the no-action alternative, the Air Force would not request modification of the Gamecock A MOA at this time.

MITIGATION MEASURES

In accordance with 32 CFR Part 989.22, the Air Force must indicate if any mitigation measures would be needed to implement the proposed action. For purposes of this EA (to modify the Gamecock A MOA) no mitigation measures are proposed to arrive at a finding of no significant impact if the proposed action or no-action alternative were selected for implementation.

SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

According to the analysis in this EA, implementation of the proposed action would not result in significant impacts to any resource category. Implementing the proposed action would not significantly

affect existing conditions in the areas underneath or adjacent to the boundaries of Gamecock A MOA. Table ES-1 summarizes the potential impacts for the proposed action and the no-action alternative.

Table ES-1 Summary of Potential Environmental Impacts

Resource	*Modifications to Gamecock A MOA*	*No-Action Alternative*
Airspace Management and Use	Consequences to civilian or general aviation would be minimal. Pope AFB 23 OSS would implement management actions in cooperation with local and regional FAA air traffic centers to minimize any potential conflicts with underlying IR, VR, and SKE traffic.	Gamecock A MOA would not be modified. Airspace management and use would remain unchanged from existing conditions.
Noise	Average noise levels beneath Warthog B would increase by 3 dB while average noise levels beneath Warthog C would increase by 0.5 dB. Currently, the average noise level in both areas is 38 dB DNL. Noise levels along the MTRs in the MOA would continue to range from a low of 51 dBA DNL to a high of 62 dBA DNL. In summary, there would be no significant adverse impact to noise resources under the proposal.	Noise levels in the MOA airspace would remain unchanged from current conditions.
Air Quality	Emissions from the increased flights below 5,000 feet AGL (mixing height) would contribute less than 1 percent for any of the criteria pollutants. Insignificant impact to local air quality.	Conditions would remain unchanged. No impact would be expected.
Biological Resources	Vegetation, wildlife, or special-status species would not be significantly affected by implementation of the proposal to lower the floor of the Gamecock MOA. Aircraft operations would remain unchanged and no construction activities would occur. Average noise levels in Warthog B would remain relatively low; therefore, no significant impact to wildlife under the MOA would be expected.	Insignificant impact. Sortie-operations training in the MOA would remain at and above 7,000 feet MSL.
Safety	Communication between Pope AFB's 43 OSS and Fayetteville ATCT and Washington ARTCC would reduce potential civilian and military aircraft conflicts. A-10s would spend 97 percent of their time above 4,500 feet MSL – potential bird/wildlife aircraft strike hazard (BASH) impacts would be insignificant.	No impacts to flight safety would be anticipated under implementation of this alternative as training sortie-operations would remain unchanged in the MOA.
Environmental Justice	Low-income, minority populations, and children would not be disproportionately or significantly impacted from the projected 3 dB increase over baseline in the Warthog B MOA. There would be no increased risk to children or adults on the ground from airspace operations.	The floor of the Gamecock A MOA would not be lowered. No impacts would be anticipated.
Land Management and Use, Visual, and Recreational Resources	No change to existing land management because no land-disturbing actions are proposed. Visual and recreational resources would not be significantly impacted. In Warthog B MOA, average noise levels would be 3 dB greater than baseline while noise levels below Warthog C would be 0.5 dB greater than baseline. Overall, the impact to these resources would not be significant.	No change to aircraft operations in the MOA. No impact would be expected to these resources.
Cultural Resources	Overall impact would be negligible. No ordnance or other materials would be discharged and there would be no impacts to cultural resources from sonic booms as supersonic flight is not permitted in the MOA. Average noise levels in Warthog B would increase 3 dB over baseline but the impact would be insignificant compared to noise levels along the MTRs.	No impacts to cultural resources as a result of ongoing activities in the MOA would be expected.

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PURPOSE AND NEED FOR THE PROPOSED ACTION

CHAPTER 1
PURPOSE AND NEED FOR THE PROPOSED ACTION

1.1 INTRODUCTION

The United States Air Force (Air Force) in cooperation with the Federal Aviation Administration (FAA) prepared this environmental assessment (EA) for modification of special use airspace currently designated the Gamecock Alpha (A) military operations area (MOA) in North Carolina. The Air Force proposes to change the MOA name to Warthog A, lower the floor of the MOA from 7,000 feet mean sea level (MSL) to 3,000 feet above ground level (AGL) and split the new airspace into independently operated MOAs to be designated Warthog B and Warthog C. Within the aviation community there are two methods often used to describe altitudes, one is MSL; the MSL metric uses the average sea level as its starting point. The other is AGL which uses the altitude of the ground directly below as the starting point. Special use airspace often uses MSL to describe its ceiling and AGL to describe its floor. This enables training aircrews operating in the lower portions of the airspace to take full advantage of terrain features of the land below. In the case of the proposed MOA, the average ground elevation beneath is approximately 200 feet above MSL with its floor described as 3,000 feet AGL. This means that aircraft operating at the bottom of the MOA will be at approximately 3,200 feet MSL. While ground elevation varies under the MOA, the proposed increase in vertical extent of Gamecock MOA is *approximately* 3,800 feet. No changes to the underlying military training routes (MTRs) or the overlying air traffic control assigned airspace (ATCAA) would occur.

Under a memorandum of agreement with the FAA, the Air Force, as lead agency, has prepared this EA in accordance with the requirements of the National Environmental Policy Act (NEPA), Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations [CFR] Part 1500-1508), 32 CFR Part 989, and FAA Order 7400.2E, *Procedures for Handling Airspace Matters*.

1.2 BACKGROUND

Gamecock A MOA encompasses approximately 736 square miles and overlies portions of Bladen, Columbus, and Robeson counties in southeastern North Carolina (Figure 1-1). The MOA (managed by Pope Air Force Base [AFB] for scheduling purposes) is used primarily (88 percent of the time) by A-10 aircrews from the 23d Fighter Group (23 FG) at Pope AFB in North Carolina. Other aircraft (AV-8, F-15E, and F-16) from Pope AFB, the Navy, and other AFBs in the region also train within the MOA.

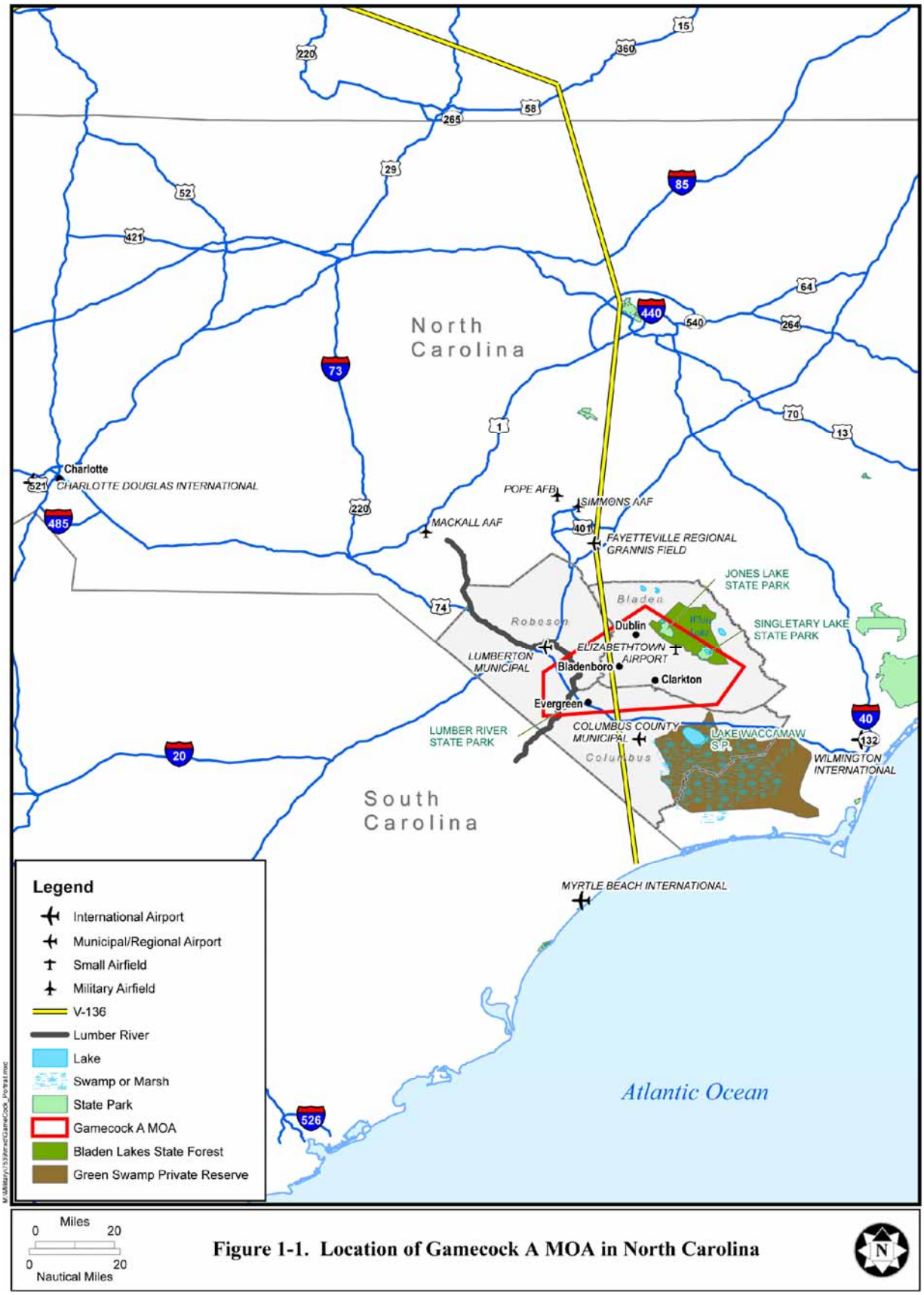

Figure 1-1. Location of Gamecock A MOA in North Carolina

The A-10 aircraft, also known as the Warthog, is a high-survivability and extremely versatile aircraft that was used extensively during Operation Desert Storm, in support of North Atlantic Treaty Organization operations in response to the Kosovo crisis, in Iraq for Operation Iraqi Freedom, and currently in Iraq for Operation Enduring Freedom. The A-10 has excellent maneuverability and attack capabilities that were proven during Operation Desert Storm when the aircraft was credited with destroying over 1,000 Iraqi tanks, 1,200 artillery pieces, and 2,000 other vehicles. Fitted with one GAU-8/A 30 millimeter Gatling gun and 16,000 pounds of mixed ordnance, the A-10 is a highly lethal weapon in the combat arena. Approximately 365 A-10s remain in active service for the Air Force and Air National Guard. Many are being upgraded with new software and cockpit displays so they can carry the latest generation of guided weapons. The Air Force estimates that the current inventory distributed among Air Combat Command (ACC), the Air Force Reserve, and the Air National Guard, will remain in service until at least 2028. Pope AFB has 36 primary A-10 aircraft and 7 backup aircraft in their inventory.

The primary mission of the 23 FG, as an important part of the Air and Space Expeditionary Force (AEF), is to provide day and night close air support (CAS) to ground forces and to serve as forward air control observers for sighting ground threats and directing air strikes against enemy targets. A-10 pilots train extensively in preparation for mission implementation. The type of air-to-ground training includes high altitude dive bomb (HADB), high angle strafe (HAS), and dive bomb (DB) maneuvers. The 23 FG currently trains in the Gamecock A MOA, Gamecock India MOA in South Carolina, and Fort Bragg Training Range in North Carolina. Although absent of surface ground targets, the 23 FG benefits from aerial maneuver "dry run" training.

1.3 PURPOSE AND NEED FOR MODIFICATION OF GAMECOCK A MOA

To be proficient in the combat theater, the 23 FG must train as they would fight. A-10 aircraft are essential for CAS of troops in Iraq and Afghanistan. These conflicts have revealed a need to employ HADB, HAS, and DB maneuvers to a greater extent. Gamecock A MOA is the single dedicated special use airspace scheduled by Pope AFB. The MOA is used extensively by the 23 FG for sortie-operations training. The lateral size of the MOA is adequate, but the vertical floor of 7,000 feet MSL does not allow aircrews to realistically train. For example, to realistically perform a HADB, an A-10 would climb to approximately 13,000 feet MSL, fly nearly horizontal to gain speed, and then dive at an angle between 45 and 60 degrees for approximately 8 seconds before pulling up between 4,500 and 5,000 feet MSL, the minimum recovery altitude for this type of maneuver (Edwards AFB 2004).

Other ranges and training airspace exist in the region; however, each of these locations has limitations that preclude their fulfilling the needed training for the 23 FG.

- Seymour-Johnson Echo MOA, located approximately 30 nautical miles (NM) northeast of Pope AFB, has the same floor as Gamecock A MOA (i.e., 7,000 feet MSL) which does not allow for realistic training of CAS maneuvers;
- Gamecock India MOA due west of Gamecock A MOA , is used only for low-altitude training, is located approximately 100 NM from Pope AFB, and has vertical dimensions of 100 feet AGL to 6,000 feet MSL making it unusable for HADB, HAS, and DB maneuvers;
- Fort Bragg Training Range, located approximately 15 NM from the base, offers limited training sources and is primarily scheduled and utilized by the Army; and
- Poinsett MOA, located in South Carolina, extends from 100 feet AGL to 2,500 feet MSL. As such, this MOA would not provide the necessary airspace to conduct HADB, HAS, and DB maneuvers required for A-10 sortie-operations training.

The Gamecock A MOA currently extends from 7,000 feet MSL to 17,999 feet MSL. Pope AFB has indicated that the lateral size (736 square miles) of Gamecock A MOA is sufficient to accommodate operational training requirements; however, the MOA lacks the lower vertical dimensions necessary for A-10 pilots to sufficiently conduct air-to-ground sortie-operations. As is, the airspace does not allow aircrews to practice CAS maneuvers (i.e., HADB, HAS, or DB) in realistic scenarios.

For ranges and airspace to be useful, they must be in proximity to the home bases of the aircraft that use them. Gamecock A MOA is located within 30 NM of the base. A 2001 RAND Report, *Relating Ranges and Airspace to ACC Missions and Training,* evaluated the adequacy of ACC ranges and airspace infrastructure (RAND 2001). A summary finding stated that A-10s aircrews at Pope AFB received less actual training time than their counterparts at other bases because of geographical separation from their training assets. Modification of the MOA would, in addition to recognized fuel cost savings, maximize training time that is otherwise lost when pilots are required to transit to remote training locations.

Lowering the floor of the MOA to 3,000 feet AGL would enhance the effectiveness of the 23 FG training by providing air-to-ground sortie-operations training (i.e., HADB, HAS, and DB) in airspace managed and scheduled by Pope AFB. Other locations exist for A-10 air-to-ground sortie-operations training; however, none possess the scheduling advantage (i.e., priority-scheduling) or proximity of location as that found in Gamecock A MOA.

CHAPTER 2

DESCRIPTION OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND NO-ACTION ALTERNATIVE

This chapter describes Pope AFB's proposal to rename and modify Gamecock A MOA in North Carolina. Implementation of the proposal, to lower the floor from 7,000 feet MSL to 3,000 feet AGL, would enhance the effectiveness of the 23 FG training by providing air-to-ground sortie-operations training (i.e., HADB, HAS, and DB) in airspace managed and scheduled by Pope AFB. Lowering the floor of the Gamecock A MOA would increase the vertical extent of the airspace unit and provide the dimensions necessary for A-10 pilots to sufficiently conduct air-to-ground training sortie-operations. As is, the airspace does not allow aircrews to practice HADB, HAS, or DB maneuvers in realistic scenarios. No changes to the underlying MTRs or the overlying ATCAA would occur under this proposal.

2.1 ALTERNATIVE IDENTIFICATION PROCESS

As described in section 1.3, A-10 pilots must train as they would fight in combat. ACC training requires A-10 pilots to become certified in HADB, HAS, and DB sortie-operations training. Identification of alternatives for modification of training airspace centered on the following factors:

- A-10 pilots must train as indicated in Air Force Instruction (AFI) 11-2A/OA-10, *A/OA-10 Aircrew Training Flying Operation.*
- Priority scheduling to ensure airspace is available to meet training requirements.
- MOA within 100 NM of Pope AFB to allow for maximum training time versus time lost in transiting to distant training airspace.
- MOA with the lateral and vertical dimensions to allow pilots performing HADB, HAS, and DB maneuvers to recover within the boundaries of the MOA.

The existing vertical dimensions of the Gamecock A MOA does not meet the needs of the 23 FG. A-10 pilots are unable to train to ACC A-10 pilot training requirements. Within 100 NM of Pope AFB, no other airspace units meet these operational requirements. Other ranges and training airspace in North Carolina (i.e., Fort Bragg Training Range and Seymour-Johnson Echo and Gamecock India MOAs) provide opportunities for valuable and extensive training for the 23 FG; however, due to limitations (i.e., scheduling priorities, vertical dimensions, and distance from Pope AFB) they lack the necessary requirements for realistic HADB, HAS, and DB sortie-operations training. A-10 aircraft weapons delivery systems include displays that indicate airspeed, altitude, and dive angle in front of the windscreen, and a low-altitude safety and targeting enhancement system (LASTE) which provides constantly computing impact point freefall ordnance delivery and greater bombing accuracy. Training in altitudes that exceed the accuracy of the LASTE does not provide the realistic training these pilots require.

2.1.1 Alternatives Considered but Eliminated From Further Analysis

The Air Force considered lowering the floor of Gamecock A MOA from 7,000 feet MSL to 4,100 feet AGL; however, this alternative was not considered viable because it would not allow for A-10 pilots to realistically and safely accomplish HADB training. As described in section 1.3, to realistically perform a HADB, an A-10 pilot must climb to 13,000 feet MSL, gain air speed, and then dive at an angle between 45 and 60 degrees accelerating rapidly during descent, and recover into climb configuration at between 4,500 AGL and 5,000 feet AGL. HADB maneuvers carried out in this manner count toward pilot rating as "combat-ready". If the floor of Gamecock A MOA were lowered to 4,100 feet AGL, the buffer airspace between this high-intensity maneuver and civilian airspace would be minimal, leaving a very narrow margin of error. The Air Force does not feel that implementing this alternative is viable because the safety-of-flight risk associated with accomplishing HADB in the more confined airspace is considered unacceptable given the existence of a much safer alternative. As a result, this alternative is not carried forward for detailed analysis.

2.2 PROPOSED ACTION AND NO-ACTION ALTERNATIVE

Pope AFB manages and schedules the Gamecock A MOA in North Carolina. As such, Pope AFB determined that modification to Gamecock A MOA would fulfill the purpose and need for the proposed action.

Based on the factors listed in section 2.1 and requirements of A-10 pilots to perform HADB, HAS, and DB, no other MOAs exist within 100 NM that would meet the purpose and need. In addition to their limitations, the other MOAs and training range are managed and scheduled by other services or units restricting use by Pope AFB; therefore, the Air Force is analyzing the proposed action and no-action alternative.

Proposed Action

Pope AFB's 23 Operations Support Squadron (OSS) manages and schedules the Gamecock A MOA which is used primarily by the 23 FG. Under the proposed action, the Air Force would implement three modifications:

- Change the name from Gamecock A MOA to Warthog A MOA,
- Lower the floor of the MOA from 7,000 feet MSL to 3,000 feet AGL; and
- Split the new airspace into two separate, independently operated areas – Warthog Bravo (B) MOA and Warthog Charlie (C) MOA (Figure 2-1).

Lowering the floor of the MOA from 7,000 feet MSL to 3,000 feet AGL would expand the airspace available for simulated HADB, HAS, and DB for A-10 sortie-operations training. The new airspace

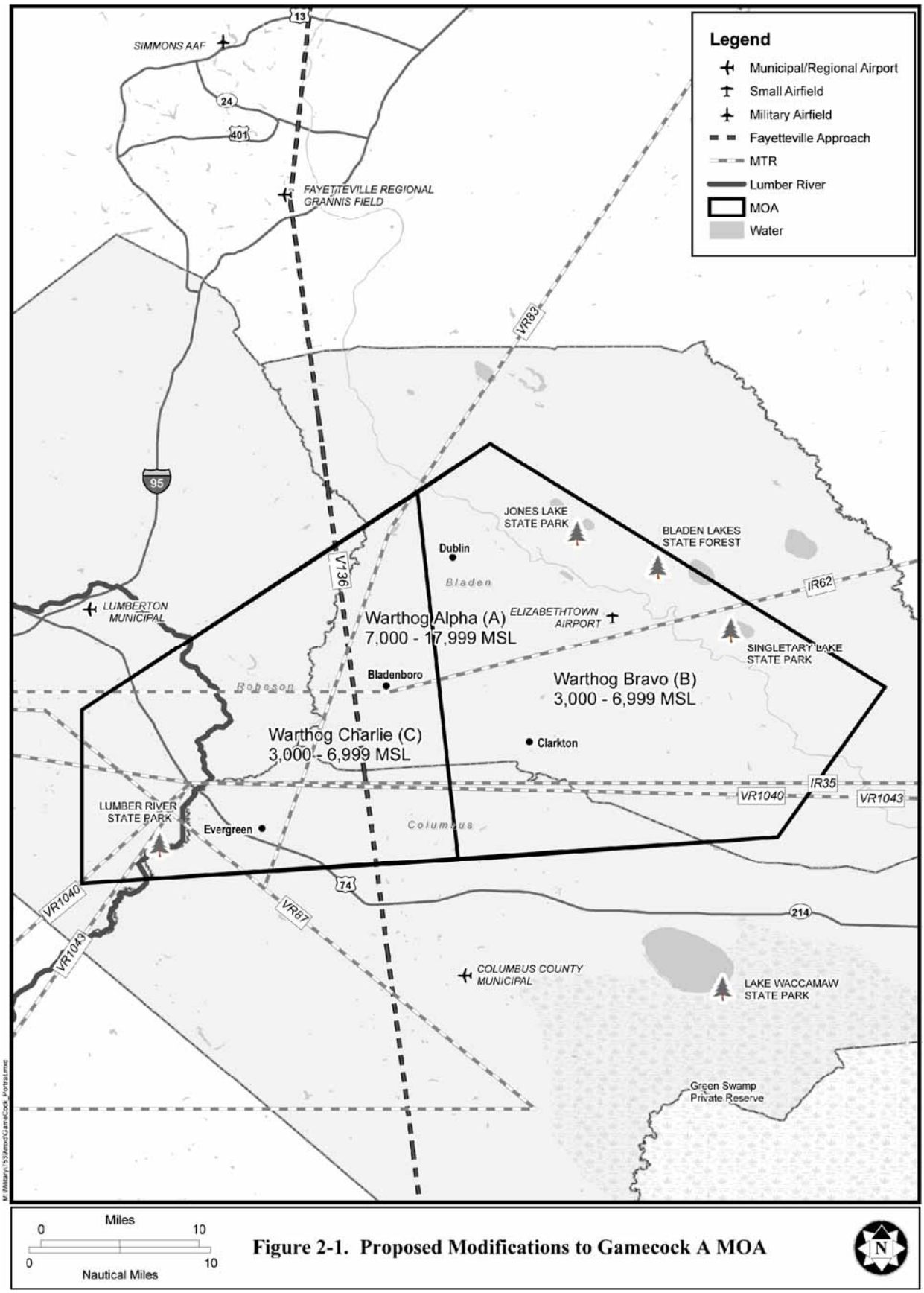

Figure 2-1. Proposed Modifications to Gamecock A MOA

would be separated into two functioning units: Warthog B MOA and Warthog C MOA. Warthog A MOA would overlie both Warthog B and Warthog C MOAs at a floor of 7,000 feet MSL and a ceiling of 17,999 feet MSL with Warthog B and C having floors of 3,000 feet AGL and ceilings of 6,999 feet MSL.

In general, dive bomb maneuver training requires a wide range of vertical airspace. Ideally, when performing maneuvers such as HADB, A-10 pilots pull up from the dive at approximately 4,500 feet MSL, but there may be occasions when these maneuvers would require pilots to fly between 4,500 feet MSL and 3,000 feet AGL. Approximately 3 percent of A-10 training would be spent at altitudes between 4,500 feet MSL and 3,000 feet AGL; 22 percent would be spent at altitudes between 4,500 feet MSL and 6,999 feet MSL. The remaining time (75 percent) would be spent above 7,000 feet MSL (Pope AFB 2005). A-10 aircrews would utilize Warthog B more often than Warthog C – roughly 80 percent in Warthog B versus 20 percent in Warthog C due to local air traffic (personal communication, Judd 2005).

Airspace Structure

MOAs are special use airspace designated by the FAA to identify areas where non-hazardous military operations (i.e., operations that do not include actual ordnance delivery training) are conducted and to separate these activities from nonparticipating civil and military instrument flight rules (IFR) traffic. MOAs provide lateral and vertical airspace which allow military aircraft to maneuver and train. These airspace units extend from various defined lower altitudes up to Class "A" airspace which is 18,000 feet MSL. An ATCAA, usually located over a MOA, provides additional maneuvering airspace for air combat training. The training airspace used by Pope AFB for A-10 aircraft consist of the Gamecock A MOA and its overlying ATCAA. Military Training Routes (MTRs) are essentially "aerial highways" that vary in length, width, and altitude; some MTRs are as low as 100 feet AGL while others extend to 16,000 feet MSL. There are two types of MTRs: Instrument Routes (IRs) and Visual Routes (VRs). As their designations suggest, IRs are designated to support military aircraft flying under instrument flight rules (IFR) and VRs are usable only under visual flight rules (VFR). Station Keeping Equipment (SKE) routes are special routes that utilize an aircraft's tactical air navigation system during inclement weather to safely guide C-130 aircraft to air drops during formation, and low-level approaches and landings.

Two terms are used to describe measurements of altitude: above ground level (AGL) and mean sea level (MSL). AGL defines how high an aircraft is relative to the ground directly below it; MSL is a barometrically derived figure used as the standard by air traffic control and defines the altitude above average sea level. Most aircraft depend on a pressure altimeter, an instrument that measures air pressure like a barometer, for their altitude readings. An altimeter calibrates altitude in 'feet MSL' and corrects the MSL reading for local atmospheric pressure. While flying over land, altitudes are referred to as both MSL and AGL; however, the two terms have different meanings and are not interchangeable.

Airspace Operations

Two terms are used to describe aircraft operations in this EA: sortie and sortie-operation. A *sortie* is the flight of a single aircraft from takeoff through landing. A *sortie-operation* is defined as the use of one airspace unit (e.g., a training route) by one aircraft. This EA will only refer to sortie-operations.

Several MTRs (i.e., IR-35, IR-62, VR-83, VR-87, VR-1040, and VR-1043) underlie Gamecock A MOA (refer to Figure 2-1). Table 2-1 provides annual MTR utilization by aircraft and the maximum floor to ceiling altitudes for use under Gamecock A MOA. Routes IR-35 and IR-62 extend from 100 feet AGL to 4,000 feet MSL; VR-83 extends from 200 feet AGL to 6,500 feet MSL; VR-87 extends from 300 feet AGL to 8,000 MSL; and routes VR-1040 and VR-1043 extend from 200 feet AGL to 1,500 feet AGL.

Table 2-1 Annual MTR Sortie-Operations by Aircraft under Gamecock A MOA

Route	***Maximum Feet***		***Aircraft***							
	Floor	*Ceiling*	***F-15***	***F-16***	***T-39***	***C-17***	***F-18 A/E***	***AV-8***	***V-22***	***Total***
IR-35	300 AGL	4,000 MSL				471			2	473
IR-62	300 AGL	4,000 MSL					5			5
VR-83	500 AGL	6,500 MSL	696							696
VR-87	100 AGL	8,000 MSL	237	84	17	2	4	8		352
VR-1040	200 AGL	1,500 MSL	115	41	8	1	2	4		171
VR-1043	200 AGL	1,500 MSL	192	68	14	2	3	6		285

Source: Pope Air Force Base 2005

Under the proposed action, the number of sortie-operations in the proposed Warthog MOAs would not vary from the total sortie operations in the existing Gamecock A MOA. Table 2-2 shows baseline sortie-operations by aircraft and altitude structure in the Gamecock A MOA. Table 2-3 shows projected sortie-operations by aircraft type and altitude in the Warthog MOAs. Comparison of baseline and projected sortie-operations indicate there would not be an increase in the number of sortie-operations or types of aircraft that use the MOA. The A-10s would continue to be the primary users of the MOA.

Table 2-2 Baseline Annual Sortie-Operations in Gamecock A MOA

Maximum Feet	***7,000 MSL to 15,000 MSL***	***15,000 MSL to 18,000 MSL***	***7,000 MSL to 18,000 MSL***	
Aircraft				
A-10	6,527	2,175		8,702
AV-8			211	211
F-15E			884	884
F-16			129	129
TOTAL	6,527	2,175	1,224	**9,926**

Table 2-3 Projected Annual Sortie Operations by Aircraft Type in Warthog MOAs					
Maximum Feet	3,000 AGL to 4,500 MSL	4,500 MSL to 7,000 MSL	5,000 MSL to 7,000 MSL	7,000 MSL to 18,000 MSL	**Total**
Warthog A MOA					
A-10	0	0	0	6527	6527
AV-8	0	0	0	179	179
F-15E	0	0	0	751	751
F-16	0	0	0	110	110
Warthog B MOA					
A-10	209	1531	0	0	1740
AV-8	0	0	26	0	26
F-15E	0	0	106	0	106
F-16	0	0	15	0	15
Warthog C MOA					
A-10	52	383	0	0	435
AV-8	0	0	6	0	6
F-15E	0	0	27	0	27
F-16	0	0	4	0	4
Total	261	1914	184	7567	**9926**

Under the proposed action, there would be no increase in the total number of sorties or the number or type of aircraft training in the MOA. A-10 aircraft would shift sortie-operations currently at 15,000 to 18,000 feet MSL and to the limits of the new airspace (3,000 feet AGL to 7,000 feet MSL). They would spend approximately 3 percent of their time training between 3,000 feet AGL and 4,500 feet MSL; about 22 percent of their time training in the 4,500 to 7,000 feet MSL range; and the remaining 75 percent would be spent above 7,000 feet MSL. The other aircraft conducting training in the MOA would increase the floor of their training airspace by approximately 2,000 feet, but they all would remain above 5,000 feet MSL under this proposal.

Airspace Management Actions

During the initial phases of this proposal, the Air Force consulted with Washington Air Route Traffic Control Center (ARTCC), Fayetteville Air Traffic Control Tower (ATCT), Wilmington ATCT, and Myrtle Beach ATCT since these control facilities would potentially be affected by the proposal to lower the floor of the Gamecock A MOA (Pope AFB 2005). Based on comments received from these facilities, the 23 OSS would activate several management actions if the proposed action were implemented.

First, 23 OSS would continue to coordinate with other military scheduling authorities to ensure the lower portions of Warthog B and Warthog C MOAs are not activated during periods of MTR, IR, and VR use. In addition, 23 OSS would coordinate with 43 OSS (the SKE scheduling authority at Pope AFB) to

ensure the lower portions of the MOA would not be scheduled when the SKE routes are activated during inclement weather.

Second, Warthog B MOA would be scheduled by 23 OSS but controlled by the FAA and Washington ARTCC. Approaches to Elizabethtown Airport, a small civilian airport, underlie the existing Gamecock A MOA and therefore would be found under Warthog B MOA as well. During periods of heavy traffic, Washington ARTCC would recall the airspace below 4,100 feet MSL. The floor would remain at 4,100 feet MSL until such time that Washington ARTCC authorized reactivation of the floor to 3,000 feet AGL.

Lastly, Warthog C MOA, also scheduled by 23 OSS, would continue to be controlled by the FAA and Fayetteville ATCT. Approaching air traffic from regional Charlotte, Wilmington, Myrtle Beach, and Lumberton airports into Fayetteville Regional Airport via V-136 (Fayetteville Approach) will likely reach volumes during the day that would necessitate the deactivation of Warthog C MOA for safety purposes. During these periods, Fayetteville ATCT would recall the airspace. The MOA would be reactivated, most likely during the evening hours, when the civilian and commercial traffic have slowed.

No-Action Alternative

Under the no-action alternative, modifications to Gamecock A MOA would not occur at this time. The floor of the Gamecock A MOA would remain at 7,000 feet MSL. The 23 FG would continue to use the MOA; however, A-10 pilots would be unable to accomplish ACC-required HADB training events without traveling to distant MOAs resulting in inefficient use of sortie-operations training time in additional to increased fuel costs. Constraints to HAS and DB training in the Gamecock A MOA would continue.

2.3 ENVIRONMENTAL IMPACT ANALYSIS PROCESS

This EA examines the affected environment underlying the Gamecock A MOA in North Carolina. It considers the potential effects of modifying the MOA under the proposed action and compares those to current conditions under the no-action alternative. The steps involved in the environmental impact analysis process (EIAP) used to prepare this EA are outlined below.

1. *Conduct Interagency and Intergovernmental Coordination for Environmental Planning (IICEP).* IICEP requires comments to be solicited from local governments as well as federal and state agencies to ensure their concerns and issues about the Gamecock A MOA modification proposal are included in the analysis. It also requires that the public in the region local to the proposed action be solicited for their comments as well. In November 2005, ACC sent IICEP letters to local counties and agencies, local and regional airports, and others that may have an expressed interest in the Air Force

proposal. Chapter 6 provides the list of people and agencies contacted and Appendix A provides copies of IICEP correspondence.

2. *Prepare a draft EA and Finding of No Significant Impact (FONSI).* The first comprehensive document for public and agency review is the draft EA and FONSI. This document examines the environmental impacts of the proposed action and no-action alternative. Given the factors for selection of alternatives to the proposed action, only the proposed action was determined to meet the purpose and need for the Air Force.

3. *Announce that the draft EA and FONSI have been prepared.* An advertisement was posted in three local newspapers (*Robesonian*, *Fayetteville Observer*, and *Bladen Journal*) notifying the public of the availability of the draft EA and FONSI for review in local libraries and on the World Wide Web at www.a7zpintegratedplanning.org/.

4. *Provide a public comment period.* The goal during this process is to solicit comments concerning the analysis presented in the draft EA and FONSI. The draft EA and FONSI were distributed for public review, the 30-day public comment period was Jan 27, 2006 through February 27, 2006.

5. Comments received from the public and agencies. Comments were received from a private citizen, the Elizabethtown Airport/Economic Development Commission, and the North Carolina State Clearinghouse. These comments are provided in Appendix D.

6. *Prepare a final EA.* Following the public comment period, a final EA is prepared. This document is a revision (if necessary) of the draft EA, includes consideration of public and agency comments, and provides the decisionmaker with a comprehensive review of the proposed action and the potential environmental impacts. This EA has been revised to reflect substantive comments received during the public comment period.

7. *Issue a Finding of No Significant Impact.* The final step in the process is either a signed FONSI, if the analysis supports this conclusion, or a determination that an environmental impact statement would be required for the proposal.

2.4 OTHER REGULATORY AND PERMIT REQUIREMENTS

This EA has been prepared in compliance with NEPA, other federal statutes, such as the Clean Air Act (CAA), the Clean Water Act (CWA), Endangered Species Act (ESA), the National Historic Preservation Act, Executive Orders (EO), and other applicable statutes and regulations. ACC (for Pope AFB) has initiated informal consultation with the U.S. Fish and Wildlife Service (USFWS) and the North Carolina State Historic Preservation Office (SHPO).

2.5 MITIGATION MEASURES

In accordance with 32 CFR Part 989.22, the Air Force must indicate if any mitigation measures would be needed to implement the proposed action identified in this EA. For purposes of this EA (to modify the Gamecock A MOA), no mitigation measures will be needed to arrive at a finding of no significant impact. However, the 23 OSS would activate several management actions, in accordance with standard scheduling practices presented in FAA 7400.2, if the proposed action were implemented.

- First, 23 OSS would continue to coordinate with other military scheduling authorities to ensure the lower portions of Warthog B and Warthog C MOAs are not activated during periods of MTR, IR, and VR use. In addition, 23 OSS would coordinate with 43 OSS to ensure the lower portions of the MOA would not be scheduled when the SKE routes are activated during inclement weather.
- Second, Warthog B MOA would be scheduled by 23 OSS but controlled by the FAA and Washington ARTCC. Approaches to Elizabethtown Airport, a small civilian airport, underlie the existing Gamecock A MOA and therefore would be found under Warthog B MOA as well. During periods of heavy traffic, Washington ARTCC would recall the airspace below 4,100 feet MSL. The floor would remain at 4,100 feet MSL until such time that Washington ARTCC authorized reactivation of the floor to 3,000 feet AGL.
- Lastly, Warthog C MOA, also scheduled by 23 OSS, would continue to be controlled by the FAA and Fayetteville ATCT. Approaching air traffic from Charlotte, Wilmington, Myrtle Beach, and Lumberton airports via V-136 (Fayetteville Approach) during the day will likely reach volumes that would necessitate the recall of Warthog C MOA for safety purposes. During these periods, Fayetteville ATCT would recall the Warthog C MOA. The MOA would be reactivated when the civilian and commercial traffic have decreased in number.

The above management actions would be defined in letters of agreement between the Department of Defense and FAA currently being developed in accordance with FAA 7400.2 (personal communication, Judd 2006).

2.6 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS

According to the analysis in this EA, implementation of the proposed action would not result in significant impacts to any resource category. Implementing the proposed action would not significantly affect existing conditions in the areas underlying the new Warthog B and C MOA airspace units. Table 2-4 summarizes the potential impacts for alternatives (i.e., proposed action and no-action). As this summary demonstrates, the alternatives would not result in any significant impacts.

Table 2-4 Summary of Potential Environmental Impacts		
Resource	***Modifications to Gamecock A MOA***	***No-Action Alternative***
Airspace Management and Use	Consequences to civilian or general aviation would be minimal. Pope AFB 23 OSS would implement management actions in cooperation with local and regional FAA air traffic centers to minimize any potential conflicts with underlying IR, VR, and SKE traffic.	Gamecock A MOA would not be modified. Airspace management and use would remain unchanged from existing conditions.
Noise	Average noise levels beneath Warthog B would increase by 3 dB while average noise levels beneath Warthog C would increase by 0.5 dB. Currently, the average noise level in both areas is 38 dB DNL. Noise levels along the MTRs in the MOA would continue to range from a low of 51 dBA DNL to a high of 62 dBA DNL. In summary, there would be no significant adverse impact to noise resources under the proposal.	Noise levels in the MOA airspace would remain unchanged from current conditions.
Air Quality	Emissions from the increased flights below 5,000 feet AGL (mixing height) would contribute less than 1 percent for any of the criteria pollutants. Insignificant impact to local air quality.	Conditions would remain unchanged. No impact would be expected.
Biological Resources	Vegetation, wildlife, or special-status species would not be significantly affected by implementation of the proposal to lower the floor of the Gamecock MOA. Aircraft operations would remain unchanged and no construction activities would occur. Average noise levels in Warthog B would remain relatively low; therefore, no significant impact to wildlife under the MOA would be expected.	Insignificant impact. Sortie-operations training in the MOA would remain at and above 7,000 feet MSL.
Safety	Communication between Pope AFB's 43 OSS and Fayetteville ATCC and Washington ARTCC would reduce potential civilian and military aircraft conflicts. A-10s would spend 97 percent of their time above 4,500 feet MSL – potential bird/wildlife aircraft strike hazard (BASH) impacts would be insignificant.	No impacts to flight safety would be anticipated under implementation of this alternative as training sortie-operations would remain unchanged in the MOA.
Environmental Justice	Low-income, minority populations, and children would not be disproportionately or significantly impacted from the projected 3 dB increase over baseline in the Warthog B MOA. There would be no increased risk to children or adults on the ground from airspace operations.	The floor of the Gamecock A MOA would not be lowered. No impacts would be anticipated.
Land Management and Use, Visual, and Recreational Resources	No change to existing land management because no land-disturbing actions are proposed. Visual and recreational resources would not be significantly impacted. In Warthog B MOA, average noise levels would be 3 dB greater than baseline while noise levels below Warthog C would be 0.5 dB greater than baseline. Overall, the impact to these resources would not be significant.	No change to aircraft operations in the MOA. No impact would be expected to these resources.
Cultural Resources	Overall impact would be negligible. No ordnance or other materials would be discharged and there would be no impacts to cultural resources from sonic booms as supersonic flight is not permitted in the MOA. Average noise levels in Warthog B would increase 3 dB over baseline but the impact would be insignificant compared to noise levels along the MTRs.	No impacts to cultural resources as a result of ongoing activities in the MOA would be expected.

CHAPTER 3

DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

CHAPTER 3
DESCRIPTION OF THE AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

3.1 ANALYSIS APPROACH

NEPA requires focused analysis of the areas and resources potentially affected by an action or alternative. It also provides that an EA should consider, but not analyze in detail, those areas or resources not potentially affected by the proposal. Therefore, an EA should not be encyclopedic; rather, it should be succinct. NEPA also requires a comparative analysis that allows decisionmakers and the public to differentiate among the alternatives. This EA therefore, focuses on those resources that would be affected by the Air Force proposal to lower the floor of the Gamecock A MOA in North Carolina from 7,000 feet MSL to 3,000 feet AGL.

CEQ regulations (40 CFR Parts 1500-1508) for NEPA also require an EA to discuss impacts in proportion to their significance and present only enough discussion of other than significant issues to show why more study is not warranted. The analysis in this EA considers the current conditions of the affected environment and compares those to conditions that might occur should either of the alternatives (i.e., proposed action and no-action) be implemented.

Affected Environment

Evaluation and analysis of the proposed action and no-action alternatives indicate that resources under and adjacent to the Gamecock A MOA may have the potential to be affected. This Air Force proposal does not include increased aircraft sortie-operations or use of training materials (i.e., chaff or flares) in the Gamecock A MOA.

Resources Analyzed

Table 3-1 presents the results of the process of identifying resources to be analyzed in this EA. The assessment evaluates airspace management and use; noise; air quality; biological resources; safety; environmental justice; land management and use, visual, and recreational resources; cultural and traditional resources; water resources, water quality, and soils; coastal zone, floodplains, and wetlands; hazardous materials and hazardous waste management; and socioeconomics. In addition, several resource categories presented in FAA Order 1050.1E, Appendix A were considered and included in Table 3-1. The listed resources were analyzed because they may be potentially affected by the proposal to modify the Gamecock A MOA.

Table 3-1 Air Force and FAA Resources Analyzed in the Environmental Impact Analysis Process			
Air Force		***FAA***	
Resource	*Carried Forward for Detailed Analysis*	*Resource*	*Carried Forward for Detailed Analysis*
Airspace Management and Use	Yes	Department of Transportation Act: Sec. 4(f); Construction Impacts; Secondary (Induced) Impacts	No
Noise	Yes	Noise and Compatible Land Use	Yes
Land Management and Use; Visual and Recreation Resources	Yes	Farmlands and Visual Impacts	Yes
Air Quality	Yes	Air Quality	Yes
Biological Resources	Yes	Fish, Wildlife, and Plants	Yes
Cultural Resources (includes historic and traditional)	Yes	Historical, Architectural, Archeological, and Cultural Resources	Yes
Environmental Justice	Yes	Environmental Justice, and Children's Environmental Health and Safety Risks	Yes
Safety	Yes	Light Emissions	No
Water Resources, Water Quality, and Soils	No	Water Quality; Natural Resources; Energy Supply; and Wild and Scenic Rivers	No
Coastal Zone, Floodplains, and Wetlands	No	Coastal Resources, Floodplains, and Wetlands	No
Hazardous Materials and Hazardous Waste Management	No	Hazardous Materials, Pollution Prevention, and Solid Waste	No
Socioeconomics	No	Socioeconomic Impacts	No

Resources Not Analyzed Further in this EA

The Air Force assessed numerous resources (refer to Table 3.1) that, in accordance with CEQ regulations, warrant no further examination in this EA. The following provides these resources and describes the rational for this approach. Where applicable, Air Force and FAA resources have been combined for simplification.

Department of Transportation, Construction, and Secondary Induced Impacts. Department of Transportation resources have not been considered further in this analysis. The proposal would not require the use or modification of any publicly owned land. In addition, designation of airspace for military flight operations is exempt from the Department of Transportation Act, Section 4(f). The proposal to lower the floor of the Gamecock A MOA would not involve any construction activities or affect land transportation resources. As such, this EA has not further analyzed construction impacts. No

known secondary induced impacts as described in FAA 1050.1E would be anticipated or expected from either the proposed action or no-action alternative.

Light Emissions. A-10's are the only aircraft that conduct night operations in the Gamecock A MOA. Approximately 6 percent of A-10 training operations occur in the evening hours; there would be no increase in sortie-operations in the MOA. Under the proposed action, A-10s would not conduct the sortie-operations below 3,000 feet AGL and most (75 percent) would remain above the existing floor of 7,000 feet MSL. Flares are not authorized in the MOA, so there would be no additional source of light emissions generated. No consequences through implementation of the proposed action or no-action alternative would be expected to this resource; therefore, no further analysis is warranted. MTR utilization under this proposal would not change.

Water Resources, Water Quality, Soils (i.e., Natural Resources), Energy Supply, and Wild and Scenic Rivers. The Gamecock A MOA overlies numerous streams and all or portions of Singletary Lake, Jones Lake, Salters Lake, and White Lake in addition to numerous Carolina Bays. Carolina Bays, often called pocosins or referred to as ponds, are isolated water bodies formed from natural, shallow depressions largely fed by rain and shallow groundwater. Lumber River, portions of which have been federally designated Wild and Scenic and state designated Natural and Scenic, flows underneath and adjacent to the western portion of Gamecock A MOA. Soils in the region range from a mix of mica-rich gray to black sandy clay and sand in well-drained areas to acidic in poorly-drained areas such as the Carolina Bays. No changes to existing sortie-operations would occur in the MOA that would affect water resources, water quality, or soils; sortie-operations training by the 23 FG would remain at historical, or baseline levels (see Table 2-2). The projected average noise level in Warthog C, under which portions of the Lumber River flows, would increase by 0.5 dB when compared to baseline noise levels. Aircrews are not authorized to dispense any materials from aircraft in the MOA, so impacts to these resources would not be affected under the proposed action and no-action alternatives. In summary, these resources would not be affected by implementation of the proposed action or no-action alternative and have not been further assessed in this EA.

Coastal Zone, Floodplains, and Wetlands. The coastal zone includes those lands governed by the North Carolina Division of Coastal Management pursuant to the Coastal Zone Management Act (CZMA) of 1972. Floodplains are protected by Executive Order 11988, *Floodplain Management*, which requires that each federal agency "…take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health, and welfare, and to restore and preserve the natural and beneficial values served by floodplains." Wetlands are considered special category sensitive habitats and are subject to regulatory authority under Section 404 of the Clean Water Act and Executive Order 11990 *Protection of Wetlands.* They include jurisdictional wetlands, as defined by the U.S. Army Corps of Engineers (USACE) and U.S. Environmental Protection Agency (USEPA) as those areas that meet all the criteria defined in the USACE's 1987 *Wetlands Delineation Manual* and under the jurisdiction of the USACE (USACE 1987)

and non-jurisdictional wetlands. The counties of Bladen, Columbus, and Robeson are distant from the coastal zone, and as such, they are not subject to the rules and policies of the Coastal Resources Commission, which administers the CZMA – a coastal zone consistency determination would not be required. The floodplain would not be impacted since there is no construction activities associated with this proposal. Training materials (i.e., chaff and flares) are not authorized in this airspace and are not part of this airspace proposal. In summary, these resources would not be affected by implementation of the proposed action or no-action alternative and have not been further assessed in this EA.

Hazardous Materials and Hazardous Waste Management, Pollution Prevention, and Solid Waste. Hazardous materials are identified and regulated under the Comprehensive Environmental Response, Compensation and Liability Act; the Occupational Safety and Health Act; and the Emergency Planning and Community Right-to-Know-Act. Resource Conservation and Recovery Act (RCRA) defines hazardous waste as any solid, liquid, contained gaseous or semisolid waste, or any combination of waste that could or do pose a substantial hazard to human health or the environment. Waste may be classified as hazardous because of its toxicity, reactivity, ignitability, or corrosiveness. The airspace proposal, to lower the floor of the Gamecock A MOA, does not involve construction activities or appreciably change how the airspace would be utilized. No impacts to hazardous materials, pollution prevention, or solid waste management would be expected from implementation of the proposed action or no-action alternatives. No new activities would be introduced that would warrant further assessment, and therefore, these resources have not been further assessed.

Socioeconomics. Socioeconomics is defined as the social and economic activities associated with the human environment, particularly population and economic activity. Economic activity typically includes employment, personal income, and industrial growth. No significant consequences would be expected from implementation of the proposed action as new or lost jobs, changes to personal income, or industrial growth would not occur. Lowering the floor of Gamecock A MOA could impact economic activity (i.e., fuel sales) of Elizabethtown Airport if approaching air traffic had to be rerouted to other airports during military training activities in the MOA. However, the Air Force, in cooperation with the FAA, would implement airspace management actions that would reduce the likelihood that civilian aircraft would have to be rerouted away from Elizabethtown Airport, thus reducing the opportunity for adverse economic impacts. These management actions would be defined in letters of agreement (LOA) currently being developed between the Department of Defense and FAA in accordance with FAA 7400.2. The management actions would specifically ensure continued access to Elizabethtown Airport. As such, the management actions would be expected to reduce the potential for economic impacts from implementation of the proposed action and because none would be expected under the no-action alternative, this resource has not been carried forward for further analysis.

3.2 AIRSPACE MANAGEMENT AND USE

The safe, orderly, and compatible use of the nation's airspace is made possible through a system of flight rules and regulations, airspace management actions, and air traffic control procedures just as use of the nation's highway system is governed by traffic laws and rules for operating vehicles. The national airspace system is designed and managed to protect aircraft operations around most airports and along air traffic routes connecting these airports, as well as within special areas where activities such as military flight training are conducted. The FAA has the overall responsibility for managing the airspace system and accomplishes this through close coordination with state aviation and airport planners, military airspace managers, and other entities.

3.2.1 Affected Environment

Gamecock A MOA is managed and scheduled by Pope AFB's 23 OSS. The proposed action would, in addition to lowering the floor of the MOA, split the new airspace into two separate, independently operated areas – Warthog Bravo (B) MOA and Warthog Charlie (C) MOA to extend the training boundaries for A-10 aircraft. Figure 2-1 presents the existing Gamecock A MOA and proposed airspace modifications.

Military Operations Areas

MOAs are special use airspace designated by the FAA to identify areas where non-hazardous military operations are conducted and to separate these activities from nonparticipating civil and military IFR traffic. MOAs provide lateral and vertical airspace which allow military aircraft to maneuver and train. These airspace units extend from various defined lower altitudes up to Class "A" airspace which begins at 18,000 feet MSL. An ATCAA, usually located over a MOA, provides additional maneuvering airspace for air combat training.

MOAs are considered "joint use" airspace. Non-participating aircraft operating under VFR are permitted to enter a MOA, even when the MOA is active for military use. Aircraft operating under IFR must remain clear of the MOA unless approved by the controlling agency. Flight by both participating and VFR non-participating aircraft is accomplished under the "see and avoid" concept, which stipulates that in visual meteorological conditions, pilots operating IFR and VFR are required to observe and maneuver to avoid other aircraft. The responsible ARTCC provides separation service for aircraft operating under IFR and MOA participants. Activation of the "joint use" airspace for this proposal would be controlled by Washington ARTCC. In addition, real time control of the airspace by Washington ARTCC would ensure civilian aviation access when the MOA is not being utilized for military training.

Military Training Routes

Military Training Routes (MTRs) are essentially three-dimensional "aerial highways" that vary in length, width, and altitude; some MTRs are as low as 100 feet AGL while others extend to 16,000 feet MSL. There are two types of MTRs: IRs and VRs. As their designations suggest, IRs are designated to support military aircraft flying under IFR and VRs are usable only under VFR. SKE routes are special routes that utilize an aircraft's tactical air navigation system during inclement weather to safely guide aircraft to air drops during formation and low-level flight. No changes to MTRs are involved with this airspace proposal. Several MTRs (i.e., IR-35, IR-62, VR-83, VR-1040, and VR-1043) underlie Gamecock A MOA and one (VR-87) passes through the MOA (refer to Figure 2-1). Table 3-2 provides descriptions of these six MTRs.

Table 3-2 Description of MTRs Beneath Gamecock A MOA

Route	***Segment***	***Altitudes***		***Route Width****	***Hours of Operation***	
		Floor	*Ceiling*		*From*	*To*
IR-35	C/D	300 AGL	4,000 MSL	5 NM	6:00 a.m.	6:00 p.m.
IR-62	I/J	300 AGL	4,000 MSL	4 NM	continuous	
VR-83	B/C	500 AGL	6,500 MSL	5 NM	continuous	
VR-87	D/E	100 AGL	8,000 MSL	10 NM	continuous	
VR-1040	C/D	200 AGL	1,500 MSL	2 NM	continuous	
VR-1043	F/G	200 AGL	1,500 MSL	2 NM	7:00 a.m.	11:00 p.m.

Source: DoD 2005

Federal Airways

Federal airways occur in Class E airspace areas and can extend from 1,200 feet MSL to 18,000 feet MSL. One Federal airway, V-136, provides nearly direct routing between key airports (Charlotte, Wilmington, Myrtle Beach, and Lumberton to Fayetteville Regional Airport. When air traffic control routes this traffic through Gamecock A MOA airspace, separation is provided from all military operations.

Airports

One private airport, Elizabethtown, is located in the northeast section of the MOA boundaries. Data indicate that the airport, on average, receives approximately 21 daily approaches (personal communication, Judd 2005).

3.2.2 Environmental Consequences

Proposed Action

Under the proposal to modify the MOA, the floor would be lowered from 7,000 feet MSL to 3,000 feet AGL. The new airspace (from 3,000 feet AGL to 6,999 feet MSL) would be divided into two separate MOAs (Warthog B and C). Lowering the floor of the MOA could conflict with MTR traffic; therefore, the Air Force has consulted with several FAA local and regional air traffic controllers (i.e., Washington

ARTCC, Fayetteville ATCT, Wilmington ATCT, and Myrtle Beach ATCT. Based on comments received from these facilities, the 23 OSS would activate several management actions if the proposed action were implemented.

First, 23 OSS would continue to coordinate with other military scheduling authorities to ensure the lower portions of Warthog B and Warthog C MOAs are not activated during periods of MTR, IR, and VR use. In addition, 23 OSS would coordinate with 43 OSS to ensure the lower portions of the MOA would not be scheduled when the SKE routes are activated during inclement weather.

Second, Warthog B MOA would be scheduled by 23 OSS but controlled by the FAA and Washington ARTCC. Approaches to Elizabethtown Airport, a small civilian airport, underlie the existing Gamecock A MOA and therefore would be found under Warthog B MOA as well. During periods of heavy traffic, Washington ARTCC would recall the airspace below 4,100 feet MSL. The floor would remain at 4,100 feet MSL until such time that Washington ARTCC authorized reactivation of the floor to 3,000 feet AGL. Lastly, Warthog C MOA, also scheduled by 23 OSS, would be controlled by the FAA at Fayetteville ATCT. Approaching air traffic from Charlotte, Wilmington, Myrtle Beach, and Lumberton airports via V-136 (Fayetteville Approach) during the day will likely reach volumes that would necessitate the recall of Warthog C MOA for safety purposes. During these periods, Fayetteville ATCT would recall the Warthog C MOA. The MOA would be reactivated when the civilian and commercial traffic have decreased in number. During periods when the MOA is active, civilian air traffic has the option of either traversing underneath or around the MOA.

Communication and coordination between the FAA and 23 OSS would reduce potential conflicts among users of the airspace. The 23 FG would continue to conduct training at historical levels; no increase is anticipated under this proposal. A-10 training time in the new lowered airspace would be approximately 30 percent with only 3 percent of the total time spent in the complex below 4,500 feet MSL. Consequences to civilian or general aviation would be minimal with implementation of 23 OSS management actions which would be defined in LOA currently being developed between the Department of Defense and FAA in accordance with FAA 7400.2 (personal communication, Judd 2006). In addition, implementation of the management actions would ensure that economic activity (i.e., fuel sales) at Elizabethtown Airport would not be adversely impacted.

No-Action Alternative

Under this alternative, the 23 FG would continue to train under current conditions. Gamecock A MOA would not be modified. Airspace management and use would remain unchanged from existing conditions.

3.3 NOISE

Concerns regarding aircraft noise relate to certain potential impacts such as hearing loss, non-auditory health effects, annoyance, speech and sleep interference, and effects on animals and wildlife, structures, terrain, and historical and archaeological sites.

Noise is often defined as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, diminishes the quality of the environment, or is otherwise annoying. Response to noise varies by the type and characteristics of the noise source, distance between source and receptor, receptor sensitivity, and time of day. Noise may be intermittent or continuous, steady or impulsive, and may be generated by stationary or mobile sources. Although aircraft are not the only source of noise in any area, they are readily identifiable to those affected by their noise emissions and are routinely singled out for special attention and criticism.

Noise represents the most identifiable concern associated with aircraft operations. Although communities and even isolated areas receive more consistent noise from other sources (e.g., cars, trains, construction equipment, stereos, wind), the noise generated by aircraft overflights often receives the greatest attention. General patterns concerning the perception and effect of aircraft noise have been identified, but attitudes of individual people toward noise are subjective and depend on their situation when exposed to noise. Annoyance is the primary consequence of aircraft noise. The subjective impression of noise and the disturbance of activities are believed to contribute significantly to the general annoyance response. A number of non-noise related factors have been identified that may influence the annoyance response of an individual. These factors include both physical and emotional variables.

Since supersonic activity does not and would not occur under the proposed action or no-action alternatives, only subsonic noise is discussed in this EA. Subsonic noise is generated by an aircraft's engines and airframe; this is the most familiar form of aircraft noise. Noise is represented by a variety of quantities, or "metrics." Each noise metric was developed to account for the type of noise and the nature of what (i.e., receptor) may be exposed to the noise. Human hearing is more sensitive to medium and high frequencies than to low and very high frequencies, so it is common to use "A-weighted" metrics, which account for this sensitivity.

Within this EA, noise is described by the Onset Rate-Adjusted Monthly Day-Night Average Sound Level (L_{dnmr}). L_{dnmr} is the measure used for subsonic aircraft noise in military airspace like that found on MTRs. These metric accounts for the fact that when military aircraft fly low and fast, the sound can rise from ambient to its maximum very quickly. Known as an onset-rate, this effect can make noise seem louder than its actual level. Penalties of up to 11 dB are added to L_{dnmr} values to account for this onset rate when estimating human annoyance (Plotkin *et al.* 1987; Stusnick *et al.* 1992; Stusnick *et al.* 1993).

Assessing Aircraft Noise Effects

Aircraft noise effects can be described according to two categories: annoyance and human health considerations. Annoyance, which is based on a perception, represents the primary effect associated with aircraft noise. Far less potential exists for effects on human health. Studies of community annoyance to numerous types of environmental noise show that DNL correlates well with effects. Schultz (1978) showed a consistent relationship between noise levels and annoyance. In 1991, a study reaffirmed this relationship (Fidell *et al.* 1991) and in 1994, Finegold updated the form of the curve fit and compared it with the original Schultz curve (Finegold *et al.* 1994). The inherent variability between individuals makes it impossible to predict accurately how any individual will react to a given noise event. Nevertheless, findings substantiate that community annoyance to aircraft noise is represented quite reliably using DNL.

3.3.1 Affected Environment

Several MTRs cross or merge with other MTRs or pass through the Gamecock A MOA (refer to Figure 2-1). These MTRs are currently used by various bases or services for conducting military flight training at airspeeds in excess of 288 miles per hour (i.e., 250 knots) between 100 feet AGL and 8,000 feet MSL depending upon the MTR. Although modifications to Gamecock A MOA do not involve changes in the use of MTRs, the aircraft using the MTRs are included in the evaluation of noise and cumulative effects in this EA.

Sound levels in the MOA and MTRs consider the aircraft speeds, altitudes, engine power settings, time spent in the MOA and MTR, and configuration of the airspace. Noise levels are calculated using the Air Force's MR_NMAP, an accurate and validated computer program developed to calculate noise levels resulting from aircraft operations. The metric used is L_{dnmr}. The program considers the unique aspects of flight within military training airspace. Table 3-3 presents the baseline distributed sound level in the Gamecock A MOA and the maximum noise levels along the center line of the MTRs for various aircraft. Table 3-4 presents projected distributed sound levels and the maximum noise levels along the center line of the MTRs for various aircraft in the proposed Warthog MOAs.

3.3.2 Environmental Consequences

Implementation of the proposed action would change the overall noise conditions in the MOA airspace, especially in Warthog B MOA; however the overall noise impact would not be significant. The type of aircraft and the number of sortie operations in the MOAs would not change under this proposal. Noise levels along the MTRs in the Warthog MOAs would continue to range from a low of 51 dBA DNL to a high of 62 dBA DNL. Appendix B presents MR_NMAP baseline and projected noise calculations.

Table 3-3 Calculated Noise Levels Beneath Gamecock A MOA and Collated MTR Segments under Existing Conditions	
MOA Airspace	***Sound Level (in*** L_{dnmr}***)***
Gamecock A MOA	38
IR-35	60
IR-62	51
VR-83	60
VR-87	59
VR-1040	62
VR-1043	62

Table 3-4 Calculated Noise Levels in the Warthog MOAs and Collated MTR Segments under Proposed Conditions	
MOA Airspace	***Sound Level (in*** L_{dnmr}***)***
Warthog B MOA	41
Warthog C MOA	38.5
IR-35	60
IR-62	51
VR-83	60
VR-87	59
VR-1040	62
VR-1043	62

Proposed Action

The approach used to calculate noise levels in the MOAs airspace considered the number of sortie operations, the types of aircraft, and maximum flight levels within the altitude block of each MOA (refer to Table 2-3). Under the proposed action, average noise levels are expected to increase by 0.5 dB under Warthog C MOA and 3 dB under Warthog B MOA. The expected increase is greater under Warthog B than under Warthog C because Warthog B is expected to be used more frequently than Warthog C. Average noise levels due to MOA operations beneath Warthog B and C would be 41 and 38.5 dB DNL respectively. . As stated previously, A-10 aircrews would utilize Warthog B MOA more often than Warthog C MOA – roughly 80 percent in Warthog B versus 20 percent in Warthog C. Noise from training aircraft in Warthog B MOA could annoy some persons; however, the average noise levels resulting from the proposed action would be well below the 65 dB DNL threshold for significant public reaction, as identified in by the EPA (EPA 1974). Noise levels along the MTRs in the MOA would continue to range from a low of 51 dBA DNL to a high of 62 dBA DNL. There would be no change to noise along the MTR's. In summary, no significant adverse impacts to this resource would be expected with implementation of the proposed action.

No-Action Alternative

Under the no-action alternative, modifications to Gamecock A MOA would not occur. Noise levels in the MOA airspace would remain unchanged from current conditions. The floor of the MOA would remain at 7,000 feet MSL.

3.4 AIR QUALITY

Understanding air quality for the affected area requires knowledge of: 1) applicable regulatory requirements; 2) types and sources of emissions (for stationary sources) and the horizontal and vertical extent of emissions from mobile sources such as aircraft; 3) location and context of the affected area associated with the proposed action; and 4) existing conditions (or affected environment).

Regulatory Requirements. Air quality in a given location is described by the concentration of various pollutants in the atmosphere. The significance of the pollutant concentration is determined by comparing it to the federal and state ambient air quality standards. The Clean Air Act (CAA) and its subsequent amendments (CAAA) established the National Ambient Air Quality Standards (NAAQS) for seven "criteria" pollutants: ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter less than 10 and 2.5 microns (PM_{10} and $PM_{2.5}$), and lead (Pb). These standards, presented in Table 3-5, represent the maximum allowable atmospheric concentrations that may occur while ensuring protection of public health and welfare, with a reasonable margin of safety. Primary standards set limits to protect public health, including the health of "sensitive" populations such as asthmatics, children, and the elderly. Secondary standards set limits to protect public welfare, including protection against decreased visibility, damage to animals, crops, vegetation, and buildings. Short-term standards (1-, 8-, and 24-hour periods) are established for pollutants contributing to acute health effects, while long-term standards (quarterly and annual averages) are established for pollutants contributing to chronic health effects.

Based on measured ambient criteria pollutant data, the USEPA designates all areas of the U.S. as having air quality better than (attainment) or worse than (nonattainment) the NAAQS. An area that is currently in attainment, but was formerly a nonattainment area is termed a maintenance area. An area is often designated as unclassified when there are insufficient ambient criteria pollutant data for the USEPA to form a basis for attainment status. Unclassified areas are typically rural or remote, with few sources of air pollution.

The CAA requires each state to develop a State Implementation Plan (SIP) which is its primary mechanism for ensuring that the NAAQS are achieved and/or maintained within that state. According to plans outlined in the SIP, designated state and local agencies implement regulations to control sources of criteria pollutants. The CAA provides that federal actions in nonattainment and maintenance areas do not hinder future attainment with the NAAQS and conform to the applicable SIP (i.e., North Carolina SIP).

Table 3-5 State and National Ambient Air Quality Standards					
POLLUTANT	*North Carolina Standards*			*National Standards*	
	AVERAGING TIME	PRIMARY	SECONDARY	PRIMARY	SECONDARY
Ozone (O_3)[A]	1 Hour[B]	235 µg/m^3 (0.12 ppm)	Same as Primary	235 µg/m^3 (0.12 ppm)	Same as Primary
	8 Hour	0.08 ppm	Same as Primary	0.08 ppm	Same as Primary
Carbon Monoxide (CO)	1 Hour	40 mg/m^3 (35 ppm)	--	40 mg/m^3 (35 ppm)	--
	8 Hour	10 mg/m^3 (9.0 ppm)	--	10 mg/m^3 (9.0 ppm)	--
Nitrogen Dioxide (NO_2)	Annual Average	100 µg/m^3 (0.053 ppm)	Same as Primary	100 µg/m^3 (0.053ppm)	Same as Primary
	24 Hour	--	--	--	--
Sulfur Dioxide (SO_2)	Annual Average	80 µg/m^3 (0.03 ppm)	--	80 µg/m^3 (0.03 ppm)	--
	24 Hour	365 µg/m^3 (0.14 ppm)	--	365 µg/m^3 (0.14 ppm)	--
	3 Hour	0.5 ppm	--	--	0.5 ppm
Particulate Matter PM_{10}	Annual Arithmetic Mean	50 µg/m^3	Same as Primary	50 µg/m^3	Same as Primary
	24 Hour	150 µg/m^3	Same as Primary	150 µg/m^3	Same as Primary
Particulate Matter $PM_{2.5}$	Annual Arithmetic Mean	15 µg/m^3	Same as Primary	15 µg/m^3	Same as Primary
	24 Hour	65 µg/m^3	Same as Primary	65 µg/m^3	Same as Primary
Lead (Pb)	Calendar Quarter	1.5 µg/m^3	Same as Primary	1.5 µg/m^3	Same as Primary
Total Suspended Particulates (TSP)	Annual Geometric Mean	75 µg/m^3	60 □g/m^3	--	--
	30 Day	--	--	--	--
	7 Day	--	--	--	--
	24 Hour	150 µg/m^3	--	--	--

[A] USEPA promulgated new federal 8-hour ozone standards on April 15, 2004.
[B] 1-hour standards have been revoked as of April 2005.

There are no specific requirements for federal actions in unclassified or attainment areas. However, all federal actions must comply with all state and local regulations.

The CAA also establishes a national goal of preventing degradation or impairment in any federally-designated Class I area. As part of the Prevention of Significant Deterioration (PSD) program, mandatory Class I status was assigned by Congress to all national parks, national wilderness areas, memorial parks greater than 5,000 acres and national parks greater than 6,000 acres. In Class I areas, visibility impairment is defined as a reduction in visual range and atmospheric discoloration. Stationary sources, such as industrial complexes, within 62 miles are typically an issue for visibility within a Class I PSD area. The closest Class I Area to the proposed action (Gamecock A MOA) is Swan Quarter National

Wilderness Area in northeastern North Carolina. However, this wilderness area is more than 155 miles from the MOA and would not be affected by the proposed action.

Types and Sources of Air Quality Pollutants. Pollutants considered in the analysis for this EA include the criteria pollutants measured by state and federal standards. These include volatile organic compounds (VOCs), which are precursors to (indicators of) O_3, nitrogen oxides (NO_x), which are also precursors to O_3 and include NO_2 and other compounds (CO and $PM_{10 \text{ and } 2.5}$). Airborne emissions of TSPs, lead (Pb), and hydrogen sulfide (H_2S) are not addressed because the affected areas contain no significant sources of these criteria pollutants nor are they associated with the proposed action and no-action alternative.

3.4.1 Affected Environment

The affected environment under the proposed action is the southeastern North Carolina counties of Bladen, Columbus, and Robeson, where A-10 aircraft would fly in the Warthog B and C MOAs at altitudes lower than the average mixing height for pollutants. Mixing height is the upper vertical limit of the volume of air in which emissions may affect air quality. Emissions released above the mixing height become so widely dispersed before reaching ground level that any potential ground-level effects would not be measurable. Pollutants released below the mixing height may affect ground-level concentrations. The portion of the atmosphere that is completely mixed begins at the earth's surface and may extend up to altitudes of a few thousand feet. Mixing height varies from region to region based on daily temperature changes, amount of sunlight, and other climatic factors. A conservative average mixing height of 5,000 feet AGL characterizes the conditions at Gamecock A MOA. Impacts of the proposed action can be evaluated in the context of the existing local air quality, the baseline emissions of the three counties underlying the MOA, and the relative contribution of the proposed action to regional emissions.

The North Carolina Division of Air Quality (NCDAQ) has primary jurisdiction over air quality and emissions within North Carolina. Emissions under baseline (and under no-action) include emissions generated from industrial, commercial, and residential uses; vehicles; and power plants. The 2003 three-county annual emissions are presented in Table 3-6. These are the most recent data available for criteria pollutant emissions in North Carolina (NCDAQ 2005). In terms of baseline aircraft emissions in the three-county region, currently, there are no A-10 aircraft contributing to regional air quality because existing training operations occur at 7,000 feet MSL within the Gamecock A MOA, well above the 5,000 feet AGL mixing height.

Table 3-6 Baseline Emissions for the Three-County NC Affected Environment

County Emissions	***Pollutants (Tons/Year)***					
	CO	*VOCs*	*NO_x*	*SO_2*	*PM_{10}*	*$PM_{2.5}$*
Bladen	110.5	308	501	1,377.2	71.6	33.8
Columbus	5,630.8	3,463.7	2,862.6	3,250.7	963.9	769
Robeson	211.6	256.1	3,341.8	7,845	287.9	118.7
TOTAL Baseline Emissions	5,952.9	4,027.8	6,705.4	12,472.9	1,323.4	921.5

Source: NCDAQ 2003 Point Source Emission Report (NCDAQ 2005)

Regional air quality in the three-county region is designated as in "attainment" or "unclassifiable/ attainment" with the NAAQS for all criteria pollutants (NC Administrative Code 2D-400-1, 40 CFR Part 81.334). In addition, there are no Class 1 PSD designated areas within 62 miles of the proposed action (NC Administrative Code S-6 Appendix 10).

3.4.2 Environmental Consequences

Proposed Action

The air quality analysis for the proposed action quantifies the emissions due to the increased A-10 training activities below mixing height (i.e., 5,000 feet AGL) within the proposed Warthog B and C MOAs. Emissions from the proposed action are either "presumed to conform" (based on emissions levels which are considered insignificant in the context of overall regional emissions) or must demonstrate conformity with approved SIP provisions since the CAA prohibits federal agencies from supporting activities that do not conform to a SIP that has been approved by the USEPA.

Emissions from the proposed action include the A-10 aircraft that would fly below 5,000 feet AGL in the Gamecock A MOA. For purposes of this analysis, 20 percent of the total number of projected sortie-operations to be conducted between 4,500 MSL and 7,000 feet MSL was used based on the type of missions flown by A-10s and the time spent in different altitude regimes. Approximately 383 A-10 sorties would fly below 5,000 feet AGL for a combined total time of 192 hours. Table 3-7, provides a comparison of baseline emissions, with those anticipated under the proposed action, and the percent contribution these emissions would make to the region. Appendix C provides the specific information for these calculations.

Table 3-7 Baseline and Projected Pollutant Emissions

	Pollutants (Tons/Year)				
	CO	***VOCs***	***NO_x***	***SO_2***	***PM[1]***
Baseline	5,952.9	4,027.8	6,705.4	12,472.9	2,244.9
Proposed Action	0.91	0.09	0.90	0.15	1.30
Percent Regional Contribution	**0.02**	**0.002**	**0.01**	**0.001**	**0.06**

[1]PM^{10} and $PM^{2.5}$ were combined in order to calculate engine emissions for the A-10.

Under the proposed action, emissions from the increased flights below 5,000 feet AGL would contribute less than 0.1 percent in the three-county region for any of the criteria pollutants. This percentage would be well below the regional significance criteria and *de minimus* thresholds of 100 tons per year for each of the criteria pollutants established by the federal and state general conformity rule (NC Administrative Code 2D-1600). In summary, there would be no significant adverse impacts to regional air quality with the establishment of a lower floor altitude in Gamecock A MOA.

No-Action Alternative

Under the no-action alternative, Pope AFB would not change the floor of Gamecock A MOA at this time. Impacts to this resource would not be expected since baseline emissions (as described under the affected environment) would remain unchanged.

3.5 BIOLOGICAL RESOURCES

Biological resources encompass plant and animal species and the habitats within which they occur. Plant species are often referred to as vegetation and animal species are referred to as wildlife. Habitat can be defined as the area or environment where the resources and conditions are present that cause or allow a plant or animal to live there (Hall *et al.* 1997). Biological resources for this EA include vegetation, wildlife, and special-status species found or known to occur in areas underlying and adjacent to Gamecock A MOA.

3.5.1 Affected Environment

The affected environment for the proposed action includes the lands beneath and adjacent to Gamecock A MOA in North Carolina. Biological resources could be affected from increased aircraft noise in the new, expanded airspace.

Vegetation includes all existing upland terrestrial plant communities and submerged aquatic vegetation with the exception of special-status species. Agriculture and forestry are the primary land uses under the Gamecock A MOA.

Wildlife includes all vertebrate animals with the exception of those identified as special-status species. Typical animal groups include terrestrial vertebrates such as fish, amphibians, reptiles, birds, and mammals. The attributes and quality of available habitats determine the composition, diversity, and abundance patterns of wildlife species and or communities. A review of noise effects literature indicate wildlife responses to noise vary greatly by species with each species having adapted, physically and behaviorally, to fill its ecological role in nature, and its hearing ability usually reflects that role. Animals rely on their hearing to avoid predators, obtain food, and communicate with and attract other members of their species. Aircraft noise may mask or interfere with these functions. Animals can exhibit effects to noise much like humans through stress, hypertension, and other nervous disorders. Other effects may include interference with mating and resultant population declines (Lamp 1989; Bowles 1995). Studies on the effects of noise on wildlife have been predominantly conducted on mammals and birds. Studies on subsonic aircraft disturbances of ungulates (e.g., pronghorn, bighorn sheep, elk, and mule deer), in both laboratory and field conditions, have shown that effects are transient and of short duration and suggest that the animals habituate to the sounds (Workman *et al*. 1992; Krausman *et al*. 1993, 1998; Weisenberger *et al*. 1996). Similarly, the impacts to raptors and other birds (e.g., waterfowl, grebes) from

aircraft low-level flights were found to be brief and insignificant and not detrimental to reproductive success (Smith *et al*. 1988; Lamp 1989; Ellis *et al*. 1991; Grubb and Bowerman 1997).

Special-Status Species are defined as those plant and animal species listed as threatened, endangered, or proposed as such by the USFWS. The federal Endangered Species Act (ESA) protects federally listed, threatened, and endangered plant and animal species. Species of concern are not protected by the ESA; however, these species could become listed and protected at any time. Table 3-8 presents those special-status species found or known to occur in the affected environment.

Table 3-8 Federally Listed, Proposed, and Candidate and Species of Concern in Bladen, Columbus, and Robeson Counties in North Carolina

Common Name	***Scientific Name***	***Status***
		Federal
Vertebrates		
American alligator	*Alligator mississippiensis*	T
Bachman's sparrow	*Aimophila aestivalis*	FSC
"Broadtail" madtom	*Noturus sp. 1*	FSC
Carolina gopher frog	*Rana capito capito*	FSC
Carolina pygmy sunfish	*Elassoma boehlkei*	FSC
Eastern Henslow's sparrow	*Ammodramus henslowii*	FSC
Mimic glass lizard	*Ophisaurus mimicus*	FSC
Pinewoods darter	*Etheostoma mariae*	FSC
Rafinesque's big-eared bat	*Corynorhinus (=Plecotus) rafinesquii*	FSC
Red-cockaded woodpecker	*Picoides borealis*	E
Shortnose sturgeon	*Acipenser brevirostrum*	E
Southern hognose snake	*Heterodon simus*	FSC
Waccamaw darter	*Etheostoma perlongum*	FSC
Waccamaw killifish	*Fundulus waccamensis*	FSC
Waccamaw silverside	*Menidia extensa*	T
Invertebrates		
Atlantic pigtoe	*Fusconaia masoni*	FSC
Belle's sand dragon (=variegated clubtail dragonfly)	*Progomphus bellei*	FSC
Cape Fear threetooth	*Triodopsis soelneri*	FSC
Pee Dee lotic crayfish	*Procambarus lepidodactylus*	FSC
Savannah lilliput	*Toxolasma pullus*	FSC
Venus flytrap cutworm moth	*Hemipachnobia subporphyrea subporphyrea*	FSC
Waccamaw fatmucket	*Lampsilis fullerkati*	FSC
"Waccamaw lance pearlymussel"	*Elliptio sp. 5*	FSC
Waccamaw spike	*Elliptio waccamawensis*	FSC
Yellow lampmussel	*Lampsilis cariosa*	FSC
Vascular Plants		
American chaffseed	*Schwalbea americana*	E
Awned meadowbeauty	*Rhexia aristosa*	FSC
Bog spicebush	*Lindera subcoriacea*	FSC
Boykin's lobelia	*Lobelia boykinii*	FSC

Vascular Plants (*continued*)		
Carolina asphodel	*Tofieldia glabra*	FSC*
Carolina bogmint	*Macbridea caroliniana*	FSC
Carolina grass-of-parnassus	*Parnassia caroliniana*	FSC
Carolina spleenwort	*Asplenium heteroresiliens*	FSC
Chapman's three-awn	*Aristida simpliciflora*	FSC
Chapman's sedge	*Carex chapmanii*	FSC
Cooley's meadowrue	*Thalictrum cooleyi*	E
Dwarf burhead	*Echinodorus parvulus*	FSC
Georgia indigo-bush	*Amorpha georgiana var. georgiana*	FSC*
Harper's fimbry	*Fimbristylis perpusilla*	FSC
Long beach seedbox	*Ludwigia brevipes*	FSC
Pineland plantain	*Plantago sparsiflora*	FSC
Pondspice	*Litsea aestivalis*	FSC
Raven's seedbox	*Ludwigia ravenii*	FSC
Rough-leaved loosestrife	*Lysimachia asperulaefolia*	E
Sandhills milkvetch	*Astragalus michauxii*	FSC
Savannah cowbane	*Oxypolis ternata*	FSC
Savanna indigo-bush (=Carolina lead-plant)	*Amorpha georgiana var. confusa*	FSC
Pondberry	*Lindera melissifolia*	E
Spiked medusa (=Eulophia)	*Pteroglossaspis ecristata*	FSC**
Spring-flowering goldenrod	*Solidago verna*	FSC
Swamp Forest beaksedge	*Rhynchospora decurrens*	FSC*
Venus flytrap	*Dionaea muscipula*	FSC
Wireleaf dropseed	*Sporobolus teretifolius sensu stricto*	FSC

E=endangered; FSC=federal species of concern; T= threatened
Source: USFWS 2003

3.5.2 Environmental Consequences

Determination of the significance of potential impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource: 2) the proportion of the resource that would be affected relative to its occurrence in the region; 3) the sensitivity of the resource to proposed activities; and 4) the duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of concern are adversely affected over relatively large areas or disturbances cause reductions in population size or distribution of a species of concern. Analysis of potential impacts focuses on whether and how changes in the noise environment may affect biological resources.

Proposed Action

Impacts to biological resources from increased noise levels in the expanded airspace (i.e., lowering the MOA floor from 7,000 feet MSL to 3,000 feet AGL) would be minimal. Average noise levels would increase from baseline noise levels by 3 dB beneath Warthog B MOA and 0.5 dB under Warthog C MOA. However, this change would not adversely impact wildlife or special-status species. Documented

effects to animals from noise have indicated most effects are caused by "startle effect" from aircraft traversing low-level routes. Vegetation would not be impacted by implementation of the proposed action because no ground-disturbing activities would occur.

No-Action Alternative

No significant effects to vegetation, wildlife, or special-status species are anticipated through implementation of the no-action alternative (as described under the affected environment). The 23 FG of Pope AFB would continue to utilize the MOA for sortie-operations training with the floor of the MOA remaining at 7,000 feet MSL.

3.6 SAFETY

Safety resources for this EA address 23 FG flight safety and consideration of aircraft flight risks. Flight safety concerns associated with lowering the floor of the MOA include reducing the distance between civilian and military training aircraft and include potential to increase the probability of collisions with birds in the low-level airspace.

3.6.1 Affected Environment

The affected environment includes Gamecock A MOA training airspace, lands and people underlying and immediately adjacent to the MOA, civilian pilots, and Pope AFB 23 FG personnel. In addition, the University of North Dakota (UND) operates a flight training center in Lumberton, approximately 20 miles south of Fayetteville. The primary concern is the potential for aircraft mishaps with lowering the floor of the MOA. Mishaps can occur as a result of pilot error, mid-air collisions, collisions with man-made structures or terrain, or bird/wildlife aircraft strikes. The Air Force has established five categories (Class A, B, C, D, and E) to define mishaps or events as they relate to safety issues:

- Class A mishaps, the most serious, 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 a total cost of $200,000 or more, but less than $1 million in property damage; a permanent partial disability; or inpatient hospitalization of three or more personnel.
- Class C mishaps result in total damage of $20,000 or more, but less than $200,000; and injury that results in 8 hours or more of lost work or occupational illness that causes loss of time from work at any time; or a mishap that does not meet the requirements for a Class A or Class B mishap, but does require reporting under the guidance in Air Force Instructions.
- Class D mishaps result in total damage of $2,000 or more, but less than $20,000; a loss of worker productivity of more than 1 hour, but less than 8 hours; a nonfatal injury that does not result in a loss of worker productivity; or a mishap that does not meet the criteria for a Class A, B, or C mishap, but does require reporting. Class D mishaps are not applicable to aircraft-related mishaps.

- Class E events do not meet the requirement for reportable mishaps but the data are used for the development and dissemination of mishap prevention information. They are categorized as follows:

  1. Hazardous Air Traffic Report events are hazardous air traffic or hazardous air movements that endanger the safety of an aircraft or unmanned aerial vehicle;
  2. High Accident Potential events represent incidents with high potential for becoming a mishap, but does not meet the criteria for Hazardous Air Traffic Report; and
  3. Bird/Wildlife Aircraft Strike Hazard (BASH) events involving aircraft or unmanned aerial vehicle not meeting a criteria for Class A, B, or C mishap.

Aircraft Mishaps

As present in Table 2-2, other military aircraft conduct sortie-operations training in the MOA, but only the A-10 utilizes the lower portions of the airspace. The Air Force uses historical data on mishaps at all installations and under all flight conditions to calculate Class A mishaps rates per 100,000 flying hours for each type of aircraft in the inventory, less combat losses due to enemy action. The mishap rate for A-10s per 100,000 flying hours during years 1993 to 2002 was 1.94 (AFSC 2003). Estimated average sortie duration can be used to estimate the annual flight hours in an airspace unit (i.e., MOA). Then the Class A mishap rate per 100,000 flying hours can be used to compute the approximate number of years between Class A mishaps. The 23 FG conducts approximately 8,702 sortie-operations (4,351 annual hours) each year. Based on the mishap rate and average hours A-10s have flown in the Gamecock A MOA, a projected mishap has the potential to occur on average one time in a 17.24-year period. No change would be expected under this proposal.

The only mishap recorded was in early 2005 when the base reported a lost A-10 canopy. The canopy was located and retrieved. There was no damage to persons or property on the ground (personal communication, Judd 2005).

BASH

Bird/wildlife aircraft strikes are of particular concern for aircraft flying at low altitudes. BASH incidents can result in damage to aircraft, injury to aircrews, and possibly persons underlying the airspace if an aircraft crashes. Aircrews could encounter birds at altitudes of 30,000 MSL or higher, but most bird populations fly close to the ground. Air Force Safety Center (AFSC 2006) BASH data indicate that greater than 97 percent of BASH incidents occur below 3,000 feet AGL; 2.3 percent occur between 3000 and 7000 feet AGL.

A 5-year record search for Pope AFB 23 FG indicates no BASH incidents in the Gamecock A MOA.

3.6.2 Environmental Consequences

Proposed Action

No significant loss to safety would be expected through the Air Force proposal to lower the floor of the Gamecock A MOA. Flight safety risks would remain low with statistical probability indicating a Class A mishap has the potential to occur once every 17.24 years. The 23 FG would continue to conduct sortie-operations at historical levels. Under the proposed action A-10s would conduct 261 sortie-operations totally approximately 131 hours in the 3,000 feet AGL to 4,500 feet MSL altitude range, an elevation at which BASH incidents would be more likely to occur; however, due to day/night and seasonal variations, no recorded incidents of BASH within the existing dimensions of the Gamecock A MOA, the very low percentage of BASH incidents recorded by the Air Force Safety Center (AFSC 2002), the probability of measurably increased BASH risks in the modified MOA would be extremely low. The Air Force has developed a bird-avoidance model (BAM) to predict the relative risk of wildlife strikes in specific geographic areas of the U.S. The BAM indicate BASH incidents in the existing Gamecock A MOA to have an overall moderate risk throughout the year during the day, with low risk occurring during evening hours (BAM 2005).

Elizabethtown Airport and the approach for Fayetteville/Grannis Airport are located under the existing MOA (see Figure 2-1). The FAA has expressed concern that lowering the floor of Gamecock A MOA could result in civilian aviation safety and potentially impact flight operations at the underlying airports. The Air Force proposal to split the new airspace into two separate operating airspace units (Warthog B and Warthog C MOAs) would permit either one or both MOAs to be deactivated during periods of increase civilian aircraft activity, reducing potential for impacts to safety or flight operations. In addition, during periods when the MOA is active, civilian air traffic has the option of either flying underneath or around the MOA; however, aircraft below 3,000 feet AGL have an increased potential for BASH. Communication between Pope AFB's 43 OSS and Fayetteville ATCT and Washington ARTCC would reduce potential civilian and military aircraft conflicts. In summary, no significant adverse impacts to safety would be anticipated through implementation of the proposed action.

No-Action Alternative

Under the no-action alternative, the floor of the Gamecock A MOA would not be lowered. The 23 FG would continue to train with the floor of the MOA remaining at 7,000 feet MSL. No change to existing BASH and mishap rates would be anticipated under implementation of this alternative as sortie-operations training would remain unchanged in the MOA; therefore, no adverse impacts would occur under the no-action alternative.

3.7 ENVIRONMENTAL JUSTICE

In 1994, Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, was issued to focus attention of federal agencies on human health and environmental conditions in minority and low-income communities and to ensure that disproportionately high and adverse human health or environmental effects on these communities are identified and addressed. In 1997, Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks (Protection of Children)*, was issued to direct federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

Environmental justice focuses on the distribution of race and poverty status in areas potentially affected by implementation of the proposed action. For this analysis, minority and low-income populations are defined as follows:

- ***Minority Populations*:** Persons of Hispanic origin of any race; African Americans; American Indians, Eskimos, and Aleuts; and Asians or Pacific Islanders.
- ***Low-Income Populations*:** Persons living below the poverty level, based on a total annual income of $17,029 for a family of four as reported in the *2000 Census of Population and Housing* (USCB 2000).

Data used for protection of children analysis were also collected from the *2000 Census of Population and Housing* (USCB 2000). The analysis for environmental justice includes land area underlying Gamecock A MOA in the counties of Bladen, Columbus, and Robeson.

3.7.1 Affected Environment

Population data provided in this section is for the portions of the counties of Bladen, Columbus, and Robeson that underlie Gamecock A MOA. The analysis focuses on the areas in which the proposed action would have the potential to impact. Under the Air Force proposal, no construction would occur; therefore, there would be no change in population from implementation of the proposed action.
The population of the State of North Carolina was 8,049,313 persons in 2000. By comparison, the population of the portions of counties under the Gamecock A MOA was 38,345 persons in 2000, which is less than 1 percent of the population of the state (USCB 2000). Minority populations in the counties underlying the MOA averaged 40.3 percent in 2000 having increased 3 percent since 1990. The population in the affected counties under the MOA increased 12.8 percent between 1990 and 2000 while the population of the state increased by 17.6 percent (USCB 2000). Nearly 21 percent of the state's population in 2000 comprised children age 14 years and younger compared to an average of 25 percent in the affected counties.

3.7.2 Environmental Consequences

Proposed Action

Environmental justice analysis focuses on the potentially affected populations underlying the proposed lower airspace (Warthog B and Warthog C MOAs). Compared to current noise levels in the Gamecock A MOA, the average noise levels in Warthog C MOA would increase decrease by approximately 0.5 dB DNL and increase by 3 dB under Warthog B MOA (refer to section 3.3, Noise). Noise from training aircraft in Warthog B MOA could annoy some persons; however, the average noise levels resulting from the proposed action would be well below the 65 dB DNL threshold for significant public reaction, as identified in by the EPA (EPA 1974). Noise levels along the MTRs in the MOA would continue to range from a low of 51 dBA DNL to a high of 62 dBA DNL. There would be no change to noise along the MTR's. No significant adverse impacts to environmental justice would be expected. Implementing the proposed action would not increase safety risks to children or adults on the ground. Noise impacts to populations under Warthog B and Warthog C MOAs would not be significant and implementing the proposed action would not disproportionately affect minority or low-income populations.

No-Action Alternative

Under the no-action alternative, the floor of the Gamecock A MOA would not be lowered. Impacts to environmental justice and children in the affected counties would remain unchanged through implementation of this alternative.

3.8 LAND MANAGEMENT AND USE, VISUAL, AND RECREATION RESOURCES

Land use generally refers to human modification of the land, often for residential or economic purposes. It also refers to use of land for preservation or protection of natural resources such as wildlife habitat, vegetation, or unique features. Human land uses include residential, commercial, industrial, agricultural, or recreational uses; natural features are protected under designations such as national parks, national forests, wilderness areas, or other designated areas. Attributes of land use include general land use and ownership, land management plans, and special use areas. Land ownership is a categorization of land according to the type of owner. Major land ownership categories include federal, state, American Indian, and private. Federal lands are further defined by the managing agency, which may include the USFWS, U.S. Forest Service, Bureau of Land Management, or the DoD. Land uses are frequently regulated by management plans, policies, ordinances, and regulations that determine the types of activities that are allowed or that protect specially designated or environmentally sensitive uses. Special Use Land Management Areas (e.g., wilderness areas) are identified by federal and state agencies as being worthy of more rigorous management.

Visual resources are defined as the natural and manufactured features that comprise the aesthetic qualities of an area. These features form the overall impression that an observer receives of an area or its landscape character. Landforms, water surfaces, vegetation, and manufactured features are considered

characteristics of any area if they are inherent to the structure and function of the landscape. The significance of a change in visual character is influenced by social considerations, including public value placed on the resource, public awareness of the area, and general community concern for visual resources in the area. Recreational resources include primarily outdoor recreational activities such as swimming, boating, hiking, and fishing and the lands that support these activities that occur away from a participant's residence. For this EA, the analysis examined the potential impacts to land use, visual, and recreational resources through visual observation of aircraft in the airspace and increased noise levels from aircraft flying in the lowered airspace.

3.8.1 Affected Environment

The affected environment for land use and management, visual, and recreational resources include those lands and recreational features in Bladen, Columbus, and Robeson counties located underneath and adjacent to the boundaries of the Gamecock A MOA. Figure 3-1 provides the land uses for these counties under the airspace. Primary land uses include cultivated fields, forested areas, and expanses of shrubland. Population in the portions of affected counties under the MOA increased 12.8 percent between 1990 and 2000 (USCB 2000) while the population of the state increased by 17.6 percent. Over time, the level of development in the affected area could be expected to increase with increasing population.

Special use areas identified underneath and adjacent to the Gamecock A MOA include three state parks (Jones Lake, Singletary Lake, and Lumber River) and portions of one state forest (Bladen Lakes). These special use areas found on the southeast and northwest edges of the MOA provide many outdoor recreation opportunities (trails and parks) and/or solitude (parks and forests), especially during the summer months for tourists and local residents. Numerous streams, rivers, and lakes are located within the areas under the MOA providing additional recreational opportunities with fishing being a very popular sport. Lumber River, portions of which have been federally designated Wild and Scenic and state designated Natural and Scenic, flows underneath and adjacent to the western portion of Gamecock A MOA. Recreational areas include large public land areas such as state parks and forests that may include individual campgrounds, trails, and visitor centers.

3.8.2 Environmental Consequences

Proposed Action

Land management and use would not be impacted thorough implementation of the proposed action. The Air Force proposal to lower the floor of the Gamecock A MOA would not change general land use patterns, land ownership, or affect management of lands or special use land areas under the MOA. Special use areas found under the proposed Warthog B and Warthog C MOAs would not be expected to experience significant adverse impacts. As stated previously, A-10 aircrews would utilize Warthog B MOA more often than Warthog C MOA – roughly 80 percent in Warthog B versus 20 percent in Warthog

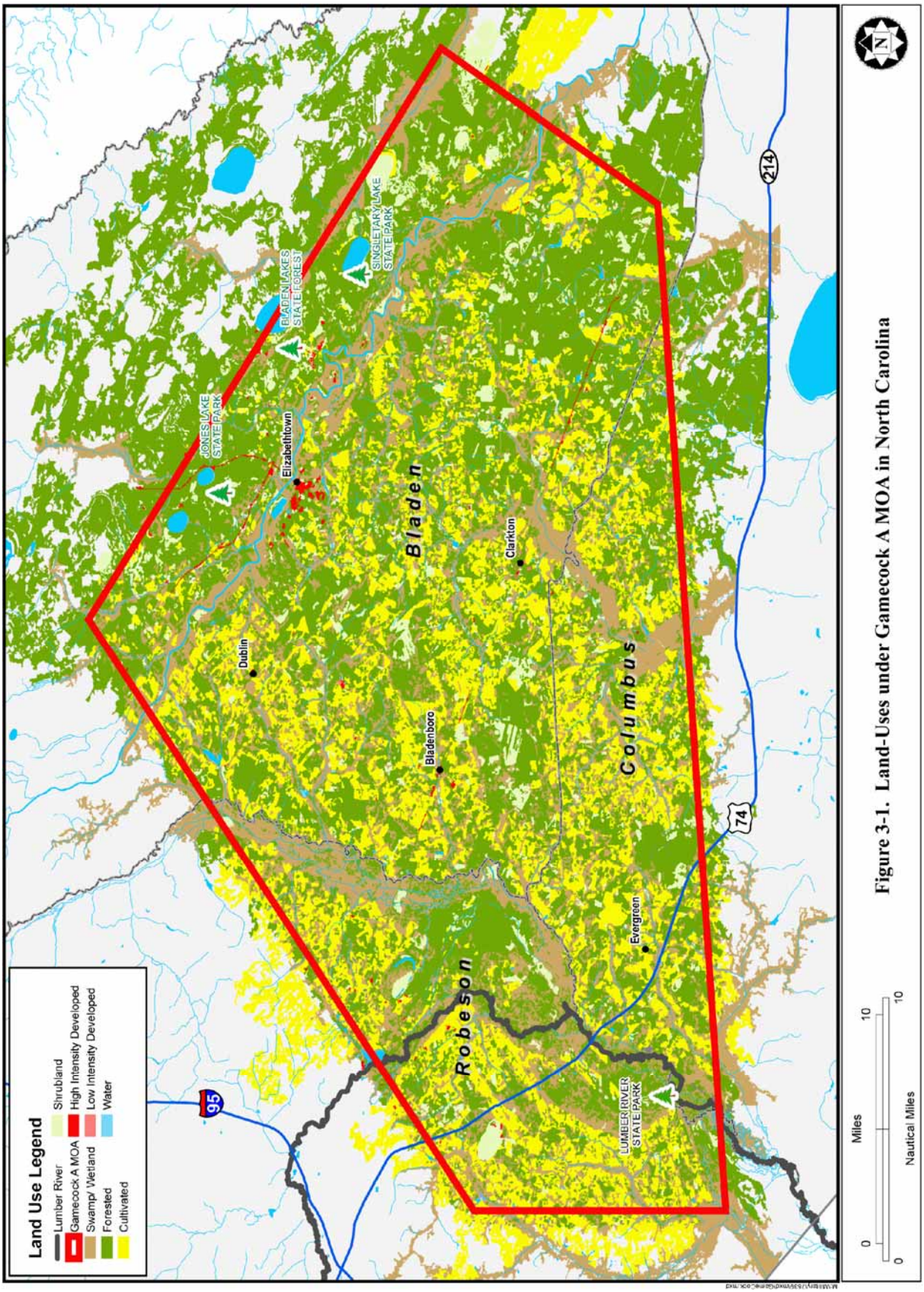

Figure 3-1. Land-Uses under Gamecock A MOA in North Carolina

C. As such, the noise levels in these lower MOAs would differ with the distributed average noise level in Warthog B approximately 2.5 dB greater than in Warthog C. Persons outdoors or engaged in recreational activities under and adjacent to either Warthog B or Warthog C MOAs could experience increased sightings of A-10 aircraft. The affect could be adverse, but not significant. A-10s in the Warthog B and Warthog C MOAs would spend approximately 3 percent of their training time in the lower portions of the MOA between 3,000 feet AGL and 4,500 feet MSL and approximately 22 percent of their training time between 4,500 and 7,000 feet MSL.

The potential adverse impact visual and recreational resources from either noise or visual sighting would be short-term in duration. The projected noise level in Warthog B, when compared to baseline average noise levels in the MOA, would result in an approximate 3 dB increase while the projected noise level in Warthog C when compared to baseline noise levels in the MOA would increase by approximately 0.5 dB. Persons in recreational areas could be annoyed; however, the overall impact to recreation resources would not be significant. In summary, no significant adverse impacts would be expected to land use and management or to visual and recreational resources from implementation of the proposed action.

No-Action Alternative

Under the no-action alternative, no changes to Gamecock A MOA would occur. The floor of the MOA would remain at 7,000 feet MSL. Noise levels and visual aircraft sightings along the MTRs would remain as under current conditions; therefore, no significant impacts to land use and management, visual, or recreation resources would be anticipated.

3.9 CULTURAL AND TRADITIONAL RESOURCES

Cultural resources are divided into three categories: archaeological resources, architectural resources, and traditional cultural resources or properties. Archaeological resources are places where people changed the ground surface or left artifacts or other physical remains (e.g., arrowheads or bottles). Archaeological resources can be classed as either sites or isolates and may be either prehistoric or historic in age. Isolates often contain only one or two artifacts, while sites are usually larger and contain more artifacts. Architectural resources are standing buildings, dams, canals, bridges, and other structures. Traditional cultural resources associated with the cultural practices and beliefs of a living community that link that community to its past and help maintain its cultural identity. Traditional cultural resources may include archaeological resources, locations of historic events, sacred areas, sources of raw materials for making tools, sacred objects, or traditional hunting and gathering areas.

3.9.1 Affected Environment

Gamecock A MOA overlies portion of Bladen, Columbus, and Robeson counties. Table 3-9 provides a list of culturally significant resources in these counties.

Table 3-9 National Registered Historic Properties in Bladen, Columbus, and Robeson Counties in North Carolina			
County	***Resource***	***County***	***Resource***
Bladen	Brown Marsh Presbyterian Church	Robeson	Baker Sanatorium
Bladen	Clark, John Hector, House	Robeson	Caldwell, Luther Henry, House
Bladen	Clarkton Depot	Robeson	Carolina Theatre
Bladen	Desserette	Robeson	Humphrey--Williams Plantation (Boundary Increase)
Bladen	Gilmore--Patterson Farm	Robeson	Humphrey-Williams House
Bladen	Harmony Hall	Robeson	Lumberton Commercial Historic District
Bladen	Mt. Horeb Presbyterian Church and Cemetery	Robeson	MacDonald, Flora, College
Bladen	Oakland Plantation	Robeson	Maxton Historic District
Bladen	Purdie House and Purdie Methodist Church	Robeson	Old Main, Pembroke State University
Bladen	South River Presbyterian Church	Robeson	Pembroke High School, Former
Bladen	Trinity Methodist Church	Robeson	Philadelphus Presbyterian Church
Bladen	Walnut Grove	Robeson	Planters Building
Columbus	Columbus County Courthouse	Robeson	Rowland Depot
Columbus	Lake Waccamaw Depot	Robeson	Rowland Main Street Historic District
Columbus	Powell House	Robeson	US Post Office--Lumberton
Robeson	Ashpole Presbyterian Church	Robeson	Williams-Powell House
Source: National Register Information System (NRIS) 2005.			

3.9.2 Environmental Consequences

Proposed Action

No impacts to archeological, architectural, or traditional resources would be expected. Lowering the floor of the Gamecock A MOA to 3,000 feet AGL would have no impact on the structural properties of those historic properties identified because no land-disturbing activities would occur. The projected sound level in Warthog B would be 41 dBA DNL. This noise level would still be much lower than noise levels along the MTRs in the MOA that would continue to range from a low of 51 dBA DNL to a high of 62 dBA DNL. No ordnance or other materials would be discharged during the sortie-operations training in the proposed Warthog MOAs. No impacts to cultural resources from sonic booms would occur as supersonic flight is not permitted in the MOA. Overall, impacts to cultural resources under the proposed action would be insignificant.

No-Action Alternative

Under the no-action alternative, the floor of Gamecock A MOA would not be lowered. No impacts to cultural resources as a result of ongoing activities in the MOA would occur.

CHAPTER 4

CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

CHAPTER 4
CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

4.1 CUMULATIVE EFFECTS

CEQ regulations stipulate that the cumulative effects analysis within an EA should consider the potential environmental impacts resulting from "the incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions" (40 CFR Part 1508.7). Assessing cumulative effects involves defining the scope of the other actions and their interrelationship with the proposed action and alternatives, if they overlap in space and time.

Cumulative effects are most likely to arise when a proposed action is related to other actions that occur in the same location or at a similar time. Actions geographically overlapping or close to the proposed action and alternatives would likely have more potential for a relationship than those farther away. Similarly, actions coinciding in time with the proposed action and alternatives would have a higher potential for cumulative effects.

To identify cumulative effects, three fundamental questions need to be addressed:

1. Does a relationship exist such that affected resource areas of the proposed action might interact with the affected resource areas of past, present, or reasonably foreseeable actions?
2. If one or more of the affected resource areas of the proposed action and another action could be expected to interact, would the proposed action affect or be affected by impacts of the other action?
3. If such a relationship exists, then does an assessment reveal any potentially significant impacts not identified when the proposed action is considered alone?

4.2 SCOPE OF CUMULATIVE EFFECTS ANALYSIS

The scope of the cumulative effects analysis involves both the geographic extent of the effects and the time in which the effects could occur. Since the potential impacts of the proposed action includes Bladen, Columbus, and Robeson counties in the State of North Carolina, the cumulative effects analysis includes only those actions occurring within this region of North Carolina. The time frame for cumulative effects would begin when Warthog B and Warthog C MOAs became activated, and sortie-operations below 7,000 feet MSL commenced. Public documents prepared by federal, state, and local government agencies were the primary sources of information for identifying reasonable foreseeable actions.

Past and Present Actions

In 1991, the Base Realignment and Closure (BRAC) commission recommended closure of Myrtle Beach AFB. The BRAC commission recommended 24 A/OA-10 aircraft be sent to Pope AFB. The Air Force completed an EA in 1992 (Air Force 1992) prior to the beddown which analyzed the impacts of the proposal to add the A-10s to Pope AFB's inventory of 46 C-130E aircraft. In 1993, an EIS was completed to determine the potential impact from the Air Force proposal to establish a composite wing at Pope AFB (Air Force 1993). A record of decision signed in 1993 established the composite wing composed of A/OA-10s, F-16 C/Ds, AC-130s, and a reduction of C-130s. Aircraft assigned to Pope AFB utilized the Farmville, Echo, Pickett, and Gamecock (A, C/D, and I) MOAs in addition to several restricted areas and associated ranges. In 1993, the average annual number of A-10 sortie-operations flown in the Gamecock A MOA was 1,137. No additional A-10 sortie-operations were proposed in the Gamecock A MOA under the composite wing beddown EIS.

Reduction initiatives across the Air Force resulted in a force structure change at Pope AFB. The base completed an EA in 1996 for the proposed force structure change which included the complete drawdown of F-16 aircraft and beddown of an additional 18 A-10 aircraft (Air Force 1996). The A-10 beddown proposal increased the number of sortie-operations in Gamecock Echo MOA. Approximately 10,920 A-10 sortie-operations were being conducted in Gamecock A MOA at the time of this 1996 Air Force proposal. Pope AFB A-10s currently conduct approximately 8,700 annual sortie-operations in the Gamecock A MOA (see Chapter 2).

The Air Force in cooperation with FAA is currently conducting environmental analysis for modification of training airspace over portions of South Carolina and Georgia. The proposed airspace modifications would create a new MOA/ ATCAA with a floor of 8,000 feet above mean sea level (MSL) and a ceiling of 22,000 feet MSL to join the western boundary of Gamecock D MOA with Restricted Area 6002 over the Poinsett Electronic Combat Range (ECR); expand Gamecock D to become Gamecock F with a floor of 5,000 feet MSL and a ceiling of 10,000 feet MSL in the area where Gamecock D does not overlay Gamecock C; combine and use Gamecock C and D concurrently and simultaneously; return Gamecock B to the National Airspace System (NAS); raise the ceiling of Poinsett to 5,000 feet MSL; expand Bulldog A to the east to underlie and match the boundaries of existing Bulldog B; develop electronic training transmitter sites; extend training chaff and flare use into new and existing airspace; and implement deconfliction methods (airspace scheduling and avoidance areas). A draft Environmental Impact Statement for the Shaw Airspace Training Initiative was released to the public in August 2005.

The Navy and Marines are currently conducting environmental analysis for an additional 900 square miles of additional training airspace over Eastern North Carolina. The new training airspace would expand on the existing military airspace in Eastern North Carolina that includes six blocs of military airspace, five restricted areas and 15 military training routes.

Reasonably Foreseeable Actions

The 2005 BRAC Commission recommendations, promulgated into law, directed the realignment of the 23 FG at Pope AFB. Under BRAC 2005, all A-10s currently assigned to Pope AFB will transfer to Moody AFB in Georgia; the first squadron would leave in 2008 with the second to follow in 2009. The A-10 is the primary user of the Gamecock A MOA; however, other aircraft (i.e., AV-8, F-15, and F-16) would continue to utilize the MOA when the A-10s depart. There is the potential that future generation aircraft (F-18, F-22A, or F-35) could utilize the Gamecock A MOA however, the small size of the MOA could preclude use by these aircraft. In addition, environmental analysis would be required prior to change in aircraft utilizing the MOA. In the future, should the Air Force determine that the modified airspace no longer meets mission requirements; the Air Force has procedures in place which returns the special use airspace units in a timely manner to the NAS.

Pope AFB will receive a total of 16 C-130H aircraft from drawdowns at Yeager Airport Air Guard Station in West Virginia and Pittsburgh International Airport Air Reserve Station in Pennsylvania. With these changes, the Air Force will establish an Air Support Operations Group to provide unity of command for units on Pope AFB, mission execution planning, and management of efficient loadout of Fort Bragg assets. Applicable NEPA documentation for the Pope AFB realignment under BRAC 2005 is anticipated to begin in 2006. Environmental impacts to resources associated with the beddown of additional C-130 aircraft under BRAC 2005 would be thoroughly analyzed.

4.3 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

NEPA requires that environmental analysis include identification of any irreversible and irretrievable commitment of resources which would be involved in the proposed action should it be implemented. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects this use could have on future generations. Irreversible effects primarily result from the use or destruction of a specific resource (e.g., energy and minerals) that cannot be replaced within a reasonable time frame. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored as a result of the action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural resource).

For the Gamecock A MOA modification proposal, most resource commitments are neither irreversible nor irretrievable. Most impacts, such as air emissions from mobile sources (i.e., aircraft) would be long lasting, but negligible. Training operations could affect environmental resources through the consumption of nonrenewable resources, such as jet fuel; however, no additional A-10 sortie-operations would occur under this proposal to increase use of this nonrenewable resource.

CHAPTER 5

REFERENCES CITED

CHAPTER 5
REFERENCES CITED

Air Force Safety Center (AFSC). 2006. USAF Wildlife Strikes by Altitude. http://afsafety.af.mil/SEF/Bash/web_alt_stat.html.

_____. 2003. Air Force Safety Analysis 1993-2002. http://afsafety.af.mil/AFSC/files/tome2.pdf

Bird Avoidance Model (BAM). 2005. United States Air Force Bird-Aircraft Strike Hazard (BASH) Team, United States Air Force Safety Center, Kirtland Air Force Base, NM. http://www.usahas.com/BAM

Bowles, A.E. 1995. Responses of Wildlife to Noise. Pages 109-156 in R.L. Knight and K.J. Gutzwiller, eds. Wildlife and Recreationalists: Coexistence through Management and Research. Island Press, Covelo, California.

Department of Defense (DoD). 2005. Flight Information Publication Area Planning Military Training Routes, AP/1B. July 5.

_____. 2003. Special Use Airspace, Order Number 7400.8L. October 7.

Edwards Air Force Base (Edwards AFB) 2004. Air Force Flight Test Center Instructions (AFFTCI 11-1). Chapter 12, Munitions Procedures. June 1.

Environmental Protection Agency (EPA). 1974. Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety," EPA/ONAC 550/9-74-004. March.

Ellis, D.H., C.H. Ellis, and D.P. Mindell. 1991. Raptor Responses to Low-Level Jet Aircraft and Sonic Booms. Environmental Pollution 74:53-83.

Grubb, T.G., and W.W. Bowerman. 1997. Variations in Breeding Bald Eagle Responses to Jets, Light Planes, and Helicopters. Journal of Raptor Research 31:213-222.

Hall, L.S., P.R. Krausman, and M.L. Morrison. 1997. The Habitat Concept and a Plea for Standard Terminology. Wildlife Society Bulletin. Volume 25, pages 173-182.

Krausman, P.R., M.C. Wallace, C.L. Hayes, and D.W. DeYoung. 1998. Effects of Jet Aircraft on Mountain Sheep. Journal of Wildlife Management 62:1246-1254.

Krausman, P.R., M.C. Wallace, D.W. DeYoung, M.E. Weisenberger, and C.L. Hayes. 1993. The Effects of Low-Altitude Jets Aircraft on Desert Ungulates. International Congress: Noise as a Public Health Problem 6(3):471-478.

Lamp, R.E. 1989. Monitoring the Effect of Military Air Operations at Naval Air Station Fallon on the Biota of Nevada. Nevada Department of Wildlife.

North Carolina Administrative Code 2D-400. Ambient Air Quality Standards.

North Carolina Administrative Code 2D-1600. General Conformity.

North Carolina Administrative Code S-6. Appendix 10 PSD and NSR. Overview of PSD Program.

North Carolina Division of Air Quality (NCDAQ). 2005. 2003 Criteria and Toxic Air Pollutant Point Source Emissions Report. Http://xapps.enr.state.nc.us/aq/.

Plotkin, K.J., L.C. Sutherland, and J.A. Molino. 1987. Environmental Noise Assessment for Military Aircraft Training Routes, Volume II: Recommended Noise Metric. Wyle Research Report WR 86-21. January.

Pope Air Force Base (Pope AFB). 2005. Pope Air Force Base Special Use Airspace. September 12 (amended).

RAND. 2001. Project AIR FORCE. Relating Ranges and Airspace to Air Combat Command Missions and Training. MR-1286-AF.

Smith, D.G., D.H. Ellis, and T.H. Johnson. 1988. Raptors and Aircraft. Pages 360-367 in R.L. Glinski, B.Giron-Pendleton, M.B. Moss, M.N. LeFranc, Jr., B.A. Millsap, and S.W. Hoffman, eds. Proceedings of the Southwest Raptor Management Symposium. National Wildlife Federation. Washington, DC.

Stusnick, E., K.A. Bradley, M.A. Bossi, and D.G. Rickert. 1993. The Effect of Onset Rate on Aircraft Noise Annoyance. Volume 3: Hybrid Own-Home Experiment. Wyle Laboratories Research Report WR 93-22. December.

Stusnick, E., K.A. Bradley, J.A. Molino, and G. DeMiranda. 1992. The Effect of Onset Rate on Aircraft Noise Annoyance. Volume 2: Rented Own-Home Experiment. Wyle Laboratories Research Report WR 92-3. March.

United States Air Force (Air Force). 1996. Environmental Assessment for Force Structure Change at Pope Air Force Base North Carolina. April.

_____. 1993. Environmental Impact Statement for Beddown of a Composite Wing at Pope Air Force Base North Carolina. Final. February.

_____. 1992. Environmental Assessment for the A/OA-10 Beddown at Pope Air Force Base North Carolina. February.

United States Census Bureau (USCB). 2000. General Profile of Demographic Characteristics.

United States Fish and Wildlife Service (USFWS). 2005. Threatened and Endangered Species in North Carolina. Updated February 3, 2003. http://nc-es.fws.gov/es/countyfr.html.

Weisenberger, M.E., P.R. Krausman, M.C. Wallace, D.W. DeYoung, and O.E. Maughan. 1996. Effects of Simulated Jet Aircraft Noise on Heart Rate and Behavior of Desert Ungulates. Journal of Wildlife Management. 60:52-61.

Workman, G.W., T.D. Bunch, J.W. Call, R.C. Evans, L.S. Neilson, and E.M. Rawlings. 1992. Sonic Boom/Animal Disturbance Studies on Pronghorn Antelope, Rocky Mountain Elk, and Bighorn Sheep. Utah State University Foundation, Logan. Prepared for USAF, Hill AFB.

CHAPTER 6

PERSONS AND AGENCIES CONTACTED

CHAPTER 6
PERSONS AND AGENCIES CONTACTED

Chrys Baggett. North Carolina State Clearinghouse. November 2005.

Mr. Gilbert Blue. Tribal Chief, Catawba Indian Tribe. November 2005.

Mr. David Bone. Elizabethtown Town Manager. November 2005.

Lt Col Kenneth Craib. 23 FG Safety Office. November 2005.

Dr. Jeffrey Crow. North Carolina State Historic Preservation Officer. November 2005.

Mr. Tom Denny. Air Traffic Control Tower. Charlotte North Carolina. November 2005.

Douglas International Airport. Aviation Director's Office. November 2005.

Mr. Phil Edwards. Columbus County Municipal Airport Manager. November 2005.

Mr. Lee Hester. Lumberton Airport Manager. November 2005.

The Honorable Dewey L. Hill. North Carolina House of Representatives. November 2005.

Mr. T. Wayne Horne. Lumberton City Manager. November 2005.

Mr. George G. Hughes. ATCT Fayetteville North Carolina. November 2005.

Craig Judd. Chief, Airspace Management. Pope Air Force Base. November 2005.

Mr. Robert Kemp. Myrtle Beach Director of Airports. November 2005.

The Honorable Kenneth R. Kornegay. Mayor of Elizabethtown. November 2005.

Mr. Gregory J. Martin. Bladen County Manager. November 2005.

The Honorable Ed Nye. North Carolina House of Representatives. November 2005.

Garland Pardue. USFWS. Southeast Region Ecological Field Office. November 2005.

The Honorable Raymond B. Pennington. Mayor of Lumberton. November 2005.

The Honorable Garland E. Pierce. North Carolina House of Representatives. November 2005.

The Honorable Tony Rand. North Carolina Senate. November 2005.

Ms. Elizabeth L. Ray. Air Traffic Manager. ARTCC Atlanta Georgia. November 2005.

Mr. Jon W. Rosborough. Wilmington Airport Director. November 2005.

The Honorable R. C. Soles, Jr. North Carolina Senate. November 2005.

The Honorable Ronnie Sutton. North Carolina House of Representatives. November 2005.

Mr. Oscar Taylor. Brown Airport Manager. November 2005.

The Honorable David F. Weinstein. North Carolina Senate. November 2005.

Mr. Bradley Whited. Managing Director of the Fayetteville Regional/Grannis Airport. November 2005.

Mr. William H. Williams. North Carolina DOT-Division of Aviation. November 2005.

The Honorable Douglas Y. Yongue. North Carolina House of Representatives. November 2005.

Mr. Anthony Zitney. ATCT Wilmington North Carolina. November 2005.

CHAPTER 7

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CHAPTER 7
LIST OF PREPARERS AND CONTRIBUTORS

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Years of Experience: 8

APPENDIX A

CORRESPONDENCE

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE VIRGINIA

MEMORANDUM FOR: Garland Pardue
U.S. Fish and Wildlife Service
Southeast Region Ecological Field Office
551-F Pylon Drive
Raleigh NC 27636

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

1. The U.S. Air Force is in the process of preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts resulting from expanding the vertical dimensions of an airspace unit known as Gamecock A Military Operations Area (MOA). Gamecock A MOA is located above Bladen, Robeson, and Columbus counties in North Carolina as depicted on the attached map. Under the proposed action, military airspace would be increased by lowering the "floor" of the MOA approximately 4,000 feet from 7,000 feet above mean sea level to 3,000 feet above ground level. Implementation of the proposed action would allow A-10 aircraft based at Pope AFB to efficiently and realistically train for their primary mission -- close air support of ground forces.

2. This EA will analyze the potential effects of this proposed action on environmental resources. Pursuant to the Endangered Species Act and the National Environmental Policy Act, we require information on federally listed or proposed species that may be present in the potentially affected area. Please review the list of species at attachment 2, as copied from the USFWS website, for accuracy. To ensure inclusion of accurate information in the EA, we request any comments or corrections to the list no later than 9 Dec 2005. We will contact you at a later date to determine the need for a Section 7 consultation.

3. We anticipate a draft EA will be made available for public and agency comment within the next three months. As part of the environmental analysis, the Air Force or its contractor, The Environmental Company, Inc., may contact you during data collection efforts. We thank you in advance for your assistance with this activity.

4. Please contact the EA Project Manager, Mr. John "Jay" Austin, at (757) 764-9197 with any questions or concerns you or your staff may have.

LARRY H. DRYDEN, P.E.
Chief, Planning Branch

2 Attachments
Map of Gamecock A MOA
List of Threatened and Endangered Species

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE VIRGINIA

MEMORANDUM FOR: Dr. Jeffrey Crow
North Carolina SHPO
4610 Mail Service Center
Raleigh NC 27699-4610

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

1. The U.S. Air Force is in the process of preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts resulting from expanding the vertical dimensions of an airspace unit known as Gamecock A Military Operations Area (MOA). Gamecock A MOA is located above Bladen, Robeson, and Columbus counties in North Carolina as depicted on the attached map. Under the proposed action, military airspace would be increased by lowering the "floor" of the MOA approximately 4,000 feet from 7,000 feet above mean sea level to 3,000 feet above ground level. Implementation of the proposed action would allow A-10 "Warthog" aircraft based at Pope AFB to efficiently and realistically train for their primary mission -- close air support of ground forces.

2. Geographic information system (GIS) data acquired from the North Carolina Department of Environment & Natural Resources indicates that several culturally significant sites are located beneath the affected airspace. We request that you review list at attachment 2 for accuracy and provide comments and/or any additional information that you feel may be relevant to considerations of impacts on historic properties. To ensure that your comments are incorporated into the EA, we request comments no later than 9 December 2005. All information collected during EA preparation will be coordinated with your office according to the steps outlined in 35 CFR 800.3 through 35 CFR 800.7. We anticipate a draft EA will be made available for public and agency comment within the next three months.

3. As part of the environmental analysis, the Air Force or its contractor, The Environmental Company, Inc., may contact you during data collection efforts. We thank you in advance for your assistance with this activity.

4. If you have any questions or comments regarding the proposed airspace action, including we would like to hear from you. Please feel free to contact the EA Project Manager, Mr. John "Jay" Austin, at (757) 764-9197 with any questions or concerns that you or your staff may have.

LARRY H. DRYDEN, P.E.
Chief, Planning Branch

2 Attachments
1. Map of Gamecock A MOA
2. List of Cultural Sites

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

MEMORANDUM FOR: Chrys Baggett
North Carolina State Clearinghouse
1301 Mail Service Center
Raleigh, N.C. 27699-1301

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

1. The U.S. Air Force is in the process of preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts resulting from expanding the vertical dimensions of Gamecock Alpha Military Operations Area (MOA). Implementation of the proposed action would allow A-10 aircraft based at Pope AFB to efficiently and realistically train for their primary mission -- close air support of ground forces. This letter is being sent in accordance with Air Force requirements for Interagency and Intergovernmental Coordination for Environmental Planning (IICEP).

2. We anticipate a draft EA will be made available for public and agency comment within the next three months. We will send 15 copies of the EA to your office for distribution to state agencies. The draft EA will be sent to the State Historic Preservation Office (SHPO) separately as we will include specific information for the SHPO in our EA transmittal letter. For your information, we have also sent a separate IICEP letter to the SHPO.

3. We request your assistance in identifying potential areas of environmental impact to be addressed in the EA. To ensure that new ideas are incorporated early in the environmental impact analysis process, we request your comments no later than 9 Dec 2005. If you have any questions or comments regarding the proposed airspace action, we would like to hear from you. Please feel free to contact the EA Project Manager, Mr. John "Jay" Austin, at (757) 764-9197 with any questions or concerns that you or your staff may have.

LARRY H. DRYDEN, P.E.
Chief, Planning Branch

1 Attachment
Map of Gamecock A MOA

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

MEMORANDUM FOR: Mr. Gilbert Blue, Tribal Chief
Catawba Indian Tribe
996 Avenue of the Nations
Rock Hill, S.C. 29730

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

1. The U.S. Air Force is in the process of preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts resulting from expanding the vertical dimensions of an airspace unit known as Gamecock A Military Operations Area (MOA). Gamecock A MOA is located above Bladen, Robeson, and Columbus counties in North Carolina as depicted on the attached map. Under the proposed action, military airspace would be increased by lowering the "floor" of the MOA approximately 4,000 feet from 7,000 feet above mean sea level to 3,000 feet above ground level. Implementation of the proposed action would allow A-10 aircraft based at Pope AFB to efficiently and realistically train for their primary mission -- close air support of ground forces.

2. We anticipate a draft EA will be made available for public and agency comment within the next 3 months. Copies of the draft EA will be sent to libraries in the affected areas. The draft EA will also be made available electronically on the World Wide Web at www.cevp.com.

3. If you have any specific information on areas of potential environmental impact which you feel should be analyzed in the EA, we would like to hear from you. In order to ensure that your feedback is included during preparation of the EA, your response is requested no later than 9 December 2005. If you have any questions about the proposal, feel free to call the EA Project Manager, Mr. John "Jay" Austin at (757) 764-9197.

LARRY H. DRYDEN, P.E.
Chief, Planning Branch

1 Attachment
Map of Gamecock A MOA

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE VIRGINIA

MEMORANDUM FOR: Phil Edwards
Manager, Columbus County Municipal Airport
111 Washington Street
Whiteville, N.C. 28472

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB VA 23665-2969

SUBJECT: Proposed Modifications to the Gamecock A Military Operations Area (MOA), North Carolina

1. The U.S. Air Force is in the process of preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts resulting from expanding the vertical dimensions of Gamecock Alpha Military Operations Area (MOA). Implementation of the proposed action would allow A-10 aircraft based at Pope AFB to efficiently and realistically train for their primary mission -- close air support of ground forces.

2. The proposed action lowers Special Use Airspace (SUA) extent at Gamecock A MOA from 7,000 MSL to 3,000 AGL. The new SUA (below 7,000 MSL) would be split into two parts with the eastern half being designated Warthog B and the western half being designated Warthog C. The two halves would allow for independent scheduling to avoid conflicts with Fayetteville airport operations. The airspace unit currently designated as Gamecock A would be re-designated as Warthog A. Additional details of the proposed airspace modification can be found in the attached Pope AFB Special Use Airspace Proposal, which has been submitted to the FAA for processing.

3. We anticipate a draft EA will be made available for public and agency comment within the next three months. Copies of the draft EA will be sent to libraries in the affected areas. The draft EA will also be made available electronically on the World Wide Web at www.cevp.com.

4. We request your assistance in identifying potential areas of environmental impact to be addressed in the EA. To ensure that new ideas are incorporated early in the environmental impact analysis process, we request your comments no later than 9 Dec 2005. If you have any questions or comments regarding the proposed airspace action, including we would like to hear from you. Please feel free to contact either the Pope AFB Airspace Manager, Mr. Craig Judd at

(910) 394-7650 or the EA Project Manager, Mr. John "Jay" Austin, at (757) 764-9197 with any questions or concerns that you or your staff may have.

LARRY H. DRYDEN, P.E.
Chief, Planning Branch

1 Attachment
Special Use Airspace Proposal

Modifications to Gamecock A Military Operations Area (MOA)
IICEP Distribution List

The preceding letter was also sent to the following agencies and individuals:

Mr. Tom Denny
ATCT AT CLT
Charlotte, NC

Mr. Phil Edwards
Columbus County Municipal Airport
Manager
Whiteville NC

Mr. Lee Hester
Lumberton Airport Manager
Lumberton NC

Mr. George G. Hughes
ATCT AT FAY
Fayetteville, NC

Mr. Robert Kemp
Myrtle Beach Director of Airports
Myrtle Beach SC

Ms. Elizabeth L. Ray
AT Manager, ARTCC AT ZTL
Atlanta, GA

Mr. Jon W. Rosborough
Wilmington Airport Director
Wilmington NC

Mr. Oscar Taylor
Brown Airport Manager
Elizabethtown NC

Mr. Bradley Whited
Managing Director of the Fayetteville
Regional/Grannis Airport
Fayetteville NC

Mr. William H. Williams
NC DOT-Division of Aviation
Raleigh, NC

Mr. Anthony Zitney
ATCT AT ILM
Wilmington, NC

Aviation Director's Office
Charlotte Douglas International Airport
Charlotte NC

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

MEMORANDUM FOR: The Honorable Tony Rand
North Carolina Senate
300-C Legislative Office Building
Raleigh, NC 27603-5925

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB VA 23665

SUBJECT: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

1. The U.S. Air Force is in the process of preparing an Environmental Assessment (EA) to evaluate the potential environmental impacts resulting from expanding the vertical dimensions of an airspace unit known as Gamecock A Military Operations Area (MOA). Gamecock A MOA is located above Bladen, Robeson, and Columbus counties in North Carolina as depicted on the attached map. Under the proposed action, military airspace would be increased by lowering the "floor" of the MOA approximately 4,000 feet from 7,000 feet above mean sea level to 3,000 feet above ground level. Implementation of the proposed action would allow A-10 aircraft based at Pope AFB to efficiently and realistically train for their primary mission -- close air support of ground forces.

2. We anticipate a draft EA will be made available for public and agency comment within the next three months. Copies of the draft EA will be sent to libraries in the affected areas. The draft EA will also be made available electronically on the World Wide Web at www.cevp.com.

3. We request your assistance in identifying potential areas of concern to be addressed in the EA. To ensure that your comments are incorporated early in the environmental impact analysis process, we request your comments no later than 9 Dec 2005. If you have any questions or comments regarding the proposed airspace action, we would like to hear from you. Please feel free to contact the EA Project Manager, Mr. John "Jay" Austin, at (757) 764-9197 with any questions or concerns that you or your staff may have.

LARRY H. DRYDEN, P.E.
Chief, Planning Branch

1 Attachment
Map of Gamecock A MOA

Global Power For America

Modifications to Gamecock A Military Operations Area (MOA)
IICEP Distribution List

The preceding letter was also sent to the following Congressionals:

The Honorable Dewey L. Hill
North Carolina House of Representatives
Raleigh, NC

The Honorable Ed Nye
North Carolina House of Representatives
Raleigh, NC

The Honorable Garland E. Pierce
North Carolina House of Representatives
Raleigh, NC

The Honorable Tony Rand
North Carolina Senate
Raleigh, NC

The Honorable R. C. Soles, Jr.
North Carolina Senate
Raleigh, NC

The Honorable Ronnie Sutton
North Carolina House of Representatives
Raleigh, NC

The Honorable David F. Weinstein
North Carolina Senate
Raleigh, NC

The Honorable Douglas Y. Yongue
North Carolina House of Representatives
Raleigh, NC

NORTH CAROLINA GENERAL ASSEMBLY
Senator Anthony E. Rand, 19th District

Legislative Office Building
300 N. Salisbury Street, 300-C
Raleigh, NC 27603-5925
(919) 733-9892
(919) 715-8346 Fax
tonyr@ncleg.net

Majority Leader
Chairman, Rules and Operations of the Senate
Chairman, Employee and Hospital Medical Benefits
Vice Chairman, Commerce

November 18, 2005

Larry H. Dryden, P.E.
Chief, Planning Branch
HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB, VA 23665

Re: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

Dear Mr. Dryden:

I fully support the proposed modifications to the Gamecock A Military Operations Area. I am very supportive of our military forces stationed in North Carolina and I recognize that they must train realistically to prepare for combat operations around the world.

Because of this need and the minimal impact on the environment of the proposed modification, I would appreciate your consideration of this request.

Very truly yours,

Anthony E. Rand

AER:jt

2014 Litho Place, Fayetteville, NC 28304
(910) 222-8096 Business–(910) 864-0550 Home

TOWN OF ELIZABETHTOWN

AIRPORT/ECONOMIC DEVELOPMENT COMMISSION

CURTIS L. BROWN, JR. FIELD

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FREDERICK M. TATE, Chairman

John "Jay" Austin
EA Project Manager
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129 Andrews Street, Suite 102
Langley AFB, VA 23665

Re: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

Dear Mr. Austin:

This letter is in response to the notification of proposed modifications to the Gamecock A Military Operations Area (MOA). The Elizabethtown Airport Economic Development Commission strongly objects to any changes in the airspace around Curtis L. Brown, Jr. Field (EYF).

As a General Aviation (GA) airport, Curtis L. Brown, Jr. Field relies heavily on air traffic to support airport operations. Reducing the airspace around EYF would have an adverse economic impact on the airport. Additionally, we feel that the proposed changes would be a hazard for pilots unfamiliar with EYF and the surrounding area.

We ask that the military space of Gamecock A MOA be left unchanged and kept at the current 7,000 feet above mean sea level. We appreciate your office's consideration in this matter. If there are any questions, please do not hesitate to contact myself or Elizabethtown Planning Director Mary Jo Gollnitz at (910) 862-6385.

Sincerely,

Fredrick M. Tate
Chairman

CC: William H. Williams, Jr., NCDOT Division of Aviation Director
Craig Judd, Airspace Coordinator
Rick W. Barkes, NCDOT Aviation System Development Manager
Town Council
David Bone, Town Manager
Elizabethtown Airport Economic Development Commission
Oscar Taylor, EYF FBO Operator

North Carolina
Department of Administration

Michael F. Easley, Governor

Gwynn T. Swinson, Secretary

January 6, 2006

Mr. John Austin
Department of the Air Force
Headquarters Air Combat Command
129 Andrews Street, Suite 102
Langley AFB, VA 23665

Dear Mr. Austin:

Re: SCH File # 06-E-0000-0156; Scoping; Proposal to expand the vertical dimensions of Gamecock Alpha Military Operations Area (MOA) that will allow A-10 aircraft bases at Pope AFB to efficiently & realistically train for their primary mission -- close air support of ground forces.

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

Chrys Baggett 1576

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region N
Region O

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier #51-01-00
e-mail Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina

NCDENR
North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

TO: Chrys Baggett

FROM: Bill Flournoy

SUBJECT: Scoping for Proposed Modifications to the Gamecock A MOA (SCH #06-0156)

DATE: December 12, 2005

The NC Department of Environment and Natural Resources has received the US Air Force notice for scoping of the proposed modification of the Gamecock A MOA. These and the following comments from agencies of the department constitute our official response under the National Environmental Policy Act.

In its scoping notice the US Air Force described its proposed modifications as: "expanding the vertical dimensions of Gamecock Alpha Military Operations Area (MOA)", as well as "Implementation of the proposed actions would allow A-10 aircraft based at Pope AFB to efficiently and realistically train for their primary mission–close air support of ground forces". Given this general description of the proposed action, these comments are equally general in character.

(1) This department uses aircraft for transit, management, enforcement, emergency response, and other mission related activities. Aircraft, offer the only way to effectively and efficiently conduct the required activities over such large areas. Therefore, expanded Special Use Airspace (SUA) designation and/or increased air traffic congestion is of concern, especially considering the extent and density of existing SUA throughout eastern North Carolina. The potential for and consequences of conflict with State aircraft use should be fully explored in the proposed EA.

(2) No specific floor was proposed for the modified MOA in the US Air Force scoping notice. Once a determination is made about the floor proposal it must be explained and justified from the perspective and needs of all existing and potential airspace users.

(3) The Gamecock A MOA overlays an area of southeastern North Carolina where the US Air Force neither owns nor controls any of the surface landscape. Thus, it is not immediately obvious how the proposed action will accommodate training for close air support of ground forces. How such training will be accomplished in the absence of ground manover areas, established targets, or points of attack should be fully discussed in the EA.

(4) The Gamecock A MOA overlays a predominantly rural part of southeastern North Carolina that includes several municipalities and unincorporated places. All population concentrations impacted by the proposed action should be identified in the EA.

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Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: www.enr.state.nc.us/ENR/

(5) Environmentally sensitive areas should be identified in the EA, and their significance and susceptibility to impact should be fully explained. If any such area owned/managed by the State or a local government is to be treated differently in analysis and decision making, than Federally owned/managed areas, then this difference must be explained and justified.

(6) Aircraft noise effects on humans, communities, and sensitive areas can be a significant impact beneath SUA. Since lowering the floor of training activity can increase single event and average noise levels these should be projected and discussed in the EA.

(7) Even though the proposed action may be justifiable as a stand-alone modification, it still exists within a larger and diverse geographic area. How it relates and is integrated into this region, and its role in the cumulative effects of NC's eastern SUA complex should be documented. Further, how the SUA will be adjusted as population increases and land use changes beneath the MOA must be addressed.

(8) The 2005 BRAC Commission recommendation are now law. The near term and long term ramifications of its realignment and closure requirements on the purpose and need for the proposed action should be reviewed in the EA.

(9) The proposed SUA action is being pursued under authority and regulations administered by the FAA. The breadth and intricacies of this designation process should be summarized in the EA, as well as establishing whether the FAA is a cooperating agency.

(10) In further discussion of #9 above, the sensitivity of the FAA's SUA program should be explored to increase understanding of the consequences of the proposed action. (a) Compare the nationwide number of SUA applications for designation and applications for decommissioning that have been submitted to the FAA over the past two decades that have been approved and disapproved. (b) Compare the nationwide number of SUA applications for designation of new airspaces, reduced airspace, and eliminated airspaces that have been submitted to the FAA over the past two decades that have been approved and disapproved. (c) Identify the threshold at which a SUA modification must be sought as a result of an increase or decrease in use, a change in the characteristics of the participating aircraft, or an increase in the environmental impacts of use; and the nationwide number of SUA modification applications resulting from each of these changes over the past two decades. (d) Describe the program and site specific monitoring and reporting that is routinely required by the FAA on an ongoing basis to determine when adjustments to SUA designations may be appropriate; and the nationwide number of times such monitoring has led to SUA modification over the past two decades.

The NC Department of Environment and Natural Resources appreciates the opportunity to review and comment on the US Air Force scoping notice. Following are the comments of agencies of this department that reflect their specific mission perspective. Any questions or further inquiries may be directed to me at 919/715-4191.

BF:rak

attachment

NCDENR
North Carolina Department of Environment and Natural Resources
Division of Coastal Management
Michael F. Easley, Governor | **Charles S. Jones, Director** | William G. Ross Jr., Secretary

December 8, 2005

Melba McGee
Environmental Coordinator
Office of Legislative & Intergovernmental Affairs
Department of Environment and Natural Resources
1601 Mail Service Center
Raleigh, NC 27699-0001

SUBJECT: Scoping Comments for Proposed Environmental Assessment to Evaluate Proposed Modifications to the Gamecock Alpha Military Operations Area, Bladen County, North Carolina (SCH#06-0156, DCM#20050111)

Dear Ms. McGee:

Thank you for the opportunity to review and provide comments on the "*scoping*" request on the proposed environmental assessment to evaluate the proposed modifications to the Gamecock Alpha Military Operations Area (MOU). The proposed project, as described in the review request, is an expansion of the vertical dimensions of the MOU to allow A-10 aircraft based at Pope AFB to train for close air support of ground forces. The majority of this MOU appears to be in Bladen County, NC. According to the request for review, the environmental assessment is in the "*scoping*" phase. The purpose of the "*scoping*" phase is to solicit comments regarding the environmental and regulatory issues raised by the proposed project.

Bladen County is not a coastal county within the meaning of the Federal Coastal Zone Management Act. Consequently, the project may not require consistency review by the Division of Coastal Management (DCM) under the Federal Coastal Zone Management Act. The proposed project, however, may require consistency review if there are any effects to any coastal use or coastal resource from the proposed action[1]. Air space management is a coastal resource and is regulated, in part, through in 15A NCAC 07M .0900 of Chapter 7 of Title 15A of North Carolina's Administrative Code, which requires that aviation-related activities and associated airspace management practices will, to the maximum extent practical, facilitate the use of aircraft by local, state, and federal government agencies for a variety of activities such as resource management, law enforcement, public health, public safety, public welfare, and that access through restricted areas be provided. The submission of a consistency determination may be triggered should the proposed project affect the airspace over a coastal county, such as Brunswick

[1] See 15 CFR 930.11

County and/or New Hanover County. Consequently, DCM recommends that the proposed environmental assessment address the issue of whether the proposed project would have a coastal effect thereby triggering the necessity of the Air Force to submit a consistency determination. Even if the proposed project does not trigger consistency review, DCM recommends that this be stated in the environmental assessment to document that this issue was reviewed.

Should a consistency submission by the Air Force be triggered, the Air Force will be required to evaluate conformance of the proposed project with the relevant enforceable policies of the State's coastal program. North Carolina's coastal zone management program consists of, but is not limited to, the Coastal Area Management Act, the State's Dredge and Fill Law, Chapter 7 of Title 15A of North Carolina's Administrative Code, and the land use plan of the County and/or local municipality in which the proposed project is located. It is the objective of the Division of Coastal Management (DCM) to manage the State's coastal resources to ensure that proposed Federal activities would be compatible with safeguarding and perpetuating the biological, social, economic, and aesthetic values of the State's coastal waters. Thank you for your consideration of the North Carolina Coastal Management Program.

Sincerely,

Stephen Rynas, AICP
Federal Consistency Coordinator

cc: Charles S. Jones, Division of Coastal Management
Doug Huggett, Division of Coastal Management

NCDENR

North Carolina Department of Environment and Natural Resources

Division of Marine Fisheries

Michael F. Easley, Governor
William G. Ross Jr., Secretary

Preston P. Pate Jr., Director

MEMORANDUM

TO: Melba McGee
Office of Legislative and Intergovernmental Affairs

FROM: Mike Street

DATE: December 16, 2005

SUBJECT: Gamecock Alpha MOA

Attached is the Divisions' reply for the above referenced project. If you have any questions, please do not hesitate to contact me.

MS/sw

3441 Arendell Street P.O. Box 769 Morehead City, North Carolina 28557 One

North Carolina Wildlife Resources Commission

Richard B. Hamilton, Executive Director

MEMORANDUM

TO: Melba McGee
Office of Legislative & Intergovernmental Affairs

FROM: Steven H. Everhart, PhD
Southeastern Permit Coordinator

DATE: December 6, 2005

SUBJECT: Scoping Comments for Environmental Assessment (EA), Gamecock Alpha Military Operations Area, Bladen/Columbus/Robeson Counties. Project No. 06-0156.

This memorandum responds to a request from the US Air Force for our concerns regarding impacts on fish and wildlife resources resulting from the subject project. Biologists with the N. C. Wildlife Resources Commission (NCWRC) have reviewed the proposed project. Our comments are provided in accordance with certain provisions of the North Carolina Environmental Policy Act (G.S. 113A-1 through 113A-10; 1 NCAC 25) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661et seq.).

The USAF proposes to expand the vertical dimensions of Gamecock Alpha Military Operations Area (MOA) to allow A-10 aircraft based at Pope AFB to efficiently and realistically train for their primary mission – close air support of ground forces. MOA Gamecock Alpha is located over Bladen, Columbus, and Robeson counties.

We have the following concerns/recommendations regarding the preparation of the Environmental Assessment (EA):

1. Address any changes in impacts due to bird strike that may result from the project.

2. Address any changes in impacts due to noise disturbance to fish and wildlife, particularly to the red-cockaded woodpecker (*Picoides borealis*) (federal-endangered, state-endangered) which inhabits the area.

We appreciate the opportunity to be involved in the EA process early-on. Thank you for allowing us to comment. If you have any questions, please call me at (910) 796-7436.

Mailing Address: Division of Inland Fisheries • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 06-E-0000-0156 F03
DATE RECEIVED: 11/14/2005
AGENCY RESPONSE: 12/09/2005
REVIEW CLOSED: 12/14/2005

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DEPT OF TRANSPORTATION
LUMBER RIVER COG

PROJECT INFORMATION
APPLICANT: Department of the Air Force
TYPE: National Environmental Policy Act
ERD: Scoping
DESC: Proposing to expand the vertical dimensions of Gamecock Alpha Military Operations Area (MOA) that will allow A-10 aircraft bases at Pope AFB to efficiently & realistically train for their primary mission -- close air support of ground forces.

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above deadline. If additional review time is needed, please contact Renee Gledhill-Earley at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☒ NO COMMENT

☐ COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley

DATE: 11.30.05

RECEIVED
NOV 28 2005

NOV 16 2005

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JAN 25 2006

MEMORANDUM FOR: Ms. Chrys Baggett, Environmental Policy Act Coordinator
North Carolina State Clearinghouse
1301 Mail Service Center
Raleigh, N.C. 27699-1301

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB 23665-2769

SUBJECT: Draft Modifications to Gamecock Alpha Military Operations Area Environmental Assessment (EA)

1. We are pleased to provide you the Draft EA for Modifications to Gamecock Alpha Military Operations Area. This document is provided in accordance with the National Environmental Policy Act of 1969 (NEPA) (Public Law 91-190, 42 United States Code Sections 4321-4347), and its implementing regulations (40 Code of Federal Regulations Parts 1500 – 1508). The document is also available on the world wide web at www.cevp.com.

2. Comments may be submitted in writing to the address below. Written comments will be accepted through February 27, 2006.

Mr. John "Jay" Austin, EA Project Manager
HQ ACC/A7ZP, 129 Andrews St, Ste 239
Langley AFB, VA 23665

3. Written comments from your office regarding the scoping letter for this action have been included in the draft EA. However, because the comments were received after the December 9, 2005 deadline, their content is not reflected in the analysis at this time. We appreciate your office taking the time to make these written comments and will be sure to address those comments in future versions of the EA.

4. For additional information, please contact Lt Natasha Waggoner, HQ ACC/PA, at (757) 764-5994.

LARRY H. DRYDEN, P.E.
Chief, Community Planning Branch

Attachment: Draft EA

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JAN 25 2006

MEMORANDUM FOR: Mr. Gilbert Blue, Tribal Chief, Catawba Indian Tribe
996 Avenue of the Nations
Rock Hill, SC 29730

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB 23665-2769

SUBJECT: Draft Modifications to Gamecock Alpha Military Operations Area Environmental Assessment (EA)

1. We are pleased to provide you the Draft EA for Modifications to Gamecock Alpha Military Operations Area. This document is provided in accordance with the National Environmental Policy Act of 1969 (NEPA) (Public Law 91-190, 42 United States Code Sections 4321-4347), and its implementing regulations (40 Code of Federal Regulations Parts 1500 – 1508). The document is also available on the world wide web at www.cevp.com.

2. Comments may be submitted in writing to the address below. Written comments will be accepted through February 27, 2006.

Mr. John "Jay" Austin, EA Project Manager
HQ ACC/A7ZP, 129 Andrews St, Ste 239
Langley AFB, VA 23665

3. For additional information, please contact Lt Natasha Waggoner, HQ ACC/PA, at (757) 764-5994.

LARRY H. DRYDEN, P.E.
Chief, Community Planning Branch

Attachment: Draft EA

Global Power For America

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS AIR COMBAT COMMAND
LANGLEY AIR FORCE BASE, VIRGINIA

JAN 25 2006

MEMORANDUM FOR: ALL INTERESTED GOVERNMENT AGENCIES, INDIVIDUALS, ORGANIZATIONS AND PUBLIC AND ACADEMIC REFERENCE LIBRARIES

FROM: HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB 23665-2769

SUBJECT: Draft Modifications to Gamecock Alpha Military Operations Area Environmental Assessment (EA)

1. We are pleased to provide you the Draft EA for Modifications to Gamecock Alpha Military Operations Area. This document is provided in accordance with the National Environmental Policy Act of 1969 (NEPA) (Public Law 91-190, 42 United States Code Sections 4321-4347), and its implementing regulations (40 Code of Federal Regulations Parts 1500 – 1508). Libraries are requested to file this document for public access and reference. The document is also available on the world wide web at www.cevp.com.

2. Comments may be submitted in writing to the address below. Written comments will be accepted through February 27, 2006.

Mr. John "Jay" Austin, EA Project Manager
HQ ACC/A7ZP, 129 Andrews St, Ste 239
Langley AFB, VA 23665

3. For additional information, please contact Lt Natasha Waggoner, HQ ACC/PA, at (757) 764-5994.

LARRY H. DRYDEN, P.E.
Chief, Community Planning Branch

Attachment: Draft EA

Global Power For America

North Carolina
Department of Administration

Michael F. Easley, Governor

Britt Cobb, Secretary

March 10, 2006

Mr. John Austin
Department of the Air Force
Headquarters Air Combat Command
129 Andrews Street, Suite 102
Langley AFB, VA 23665

Dear Mr. Austin:

Re: SCH File # 06-E-0000-0232; EA; Proposal to expand the vertical dimensions of Gamecock Alpha Military Operations Area (MOA) to allow A-10 aircraft bases at Pope AFB to efficiently train for their primary mission -- close air support of ground forces.

The above referenced environmental impact information has been submitted to the State Clearinghouse under the provisions of the National Environmental Policy Act. According to G.S. 113A-10, when a state agency is required to prepare an environmental document under the provisions of federal law, the environmental document meets the provisions of the State Environmental Policy Act. Attached to this letter for your consideration are the comments made by agencies in the course of this review.

If any further environmental review documents are prepared for this project, they should be forwarded to this office for intergovernmental review.

Should you have any questions, please do not hesitate to call.

Sincerely,

Chrys Baggett

Ms. Chrys Baggett
Environmental Policy Act Coordinator

Attachments

cc: Region N
Region O

Mailing Address:
1301 Mail Service Center
Raleigh, NC 27699-1301

Telephone: (919)807-2425
Fax (919)733-9571
State Courier # 51-01-00
e-mail Chrys.Baggett@ncmail.net

Location Address:
116 West Jones Street
Raleigh, North Carolina

North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

MEMORANDUM

TO: Chrys Baggett
State Clearinghouse

FROM: Melba McGee
Environmental Review Coordinator

RE: 06-0232 EA Gamecock Alpha Military Operation Area, Bladen/Columbus/Robeson Counties

DATE: March 1, 2006

The Department of Environment and Natural Resources has reviewed the Environmental Assessment for the proposed project. The Division of Parks and Recreation has identified several properties within the military operations area that they manage. This raises issue with the division's primary mission of protecting these areas in reference to wildlife, recreational and visitor activities.

The department feels additional efforts are needed in addressing the attached comments and feels it would be beneficial to notify Mr. John Taggart with the Division of Parks and Recreation. This approach would assure this agency that possible impacts have been minimized. This would also avoid any future delays.

Thank you for the opportunity to respond. Final project approval depends on our agency comments being addressed.

Attachments

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Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: www.enr.state.nc.us/ENR/

NCDENR

North Carolina Department of Environment and Natural Resources
Division of Parks and Recreation

Michael F. Easley, Governor | William G. Ross Jr., Secretary | Lewis R. Ledford, Director

February 21, 2006

TO: Melba McGee, Environmental Coordinator
Office of Legislative and Intergovernmental Affairs

FROM: John Taggart, Natural Resources Specialist

SUBJECT: Comments on Draft Environmental Assessment (EA), Gamecock Alpha Military Operations Area, Bladen/Columbus/Robeson Counties. Project No. 06-0232.

These comments by the Division of Parks and Recreation are in response to the proposed expansion of vertical dimensions within Gamecock Alpha Military Operations Area (MOA) to allow for training needs of A-10 aircraft stationed at Pope Air Force Base. Several properties managed by the division are located within the MOA depicted in Figure 1-1 of the EA: Jones Lake State Park, Singletary Lake State Park, Salters Lake, White Lake, Bay Tree Lake (Bladen County) and Lumber River State Park (Robeson County). Also, Bushy Lake State Natural Area (Cumberland County) and Lake Waccamaw State Park (Columbus County) are located approximately 10-15 miles north and south, respectively, of the MOA.

All of these sites protect considerable wildlife, particularly populations of numerous resident and migratory bird species plus the aforementioned state parks serve as popular recreation areas for thousands of visitors each year. A primary mission of the state parks system, according to the State Parks Act (G.S. 113-44.8), is to preserve and manage archaeological, geologic, biological, scenic and recreational resources. As such, the division has concerns with the proposed lowering of the operational airspace from 7,000 to 3,000 feet because of increased subsonic noise impacts on nesting, foraging or roosting birds and visitor activities.

Table 2-4 on page 2-10 of the draft EA states: "There will be no perceptible change in noise levels at any given location." This conclusion was reach only through use of a computer program (MR_NMAP), but no field testing was performed for verification. According to information on page 3-16, A-10 aircrews would spend less than 3 percent of their training time between 4,500 and 3,000 feet during projected annual sorties. However, Table 2-3 indicates that an additional 1,914 sorties (19% of annual flights) will occur between 4,500 and 7,000 feet plus other aircraft (i.e., AV-8, F-15E and F-16) would have the potential to lower their flight levels to 5,000 feet during another 1,224 flights. Hence, over one-third of projected annual flights could occur below the current operational ceiling. Given these facts plus the uncertainty of effects on

1615 Mail Service Center, Raleigh, North Carolina 27699-1615
Phone: 919-733-4181 • FAX: 919-715-3085 • Internet: www.ncsparks.net

wildlife and visitors, the Division of Parks and Recreation objects to the proposed action pending more thorough analysis. Also, flights could be routed away from these properties which are located along the northeast and southwest boundaries of the MOA.

Thank you for the opportunity to comment on this document. Please contact me if there are any questions or further information is needed.

cc: Brian Strong

NCDENR
North Carolina Department of Environment and Natural Resources

Michael F. Easley, Governor

William G. Ross Jr., Secretary

TO: Chrys Baggett
FROM: Bill Flournoy BF.
SUBJECT: Draft EA, Gamecock Alpha MOA (SCH#06-0232)
DATE: February 27, 2006

The NC Department of Environment and Natural Resources has reviewed the draft Environmental Assessment (EA) for modification of the Gamecock Alpha Military Operations Area (MOA). The following comments and the comments attached from divisions of the department represent the agency's official response.

The department takes note of the cover letter on it's draft EA, announcing that it's scoping comments were not reflected in the analysis at this time. Given the seven week turn around time between the close of scoping comments and release of the draft EA, including two national holidays, this department suspects that the document was in-the-box prior to the close of the scoping process. The time required to conduct an extensive document amendment coordination and consensus process among involved agencies, and print the results, as well as the time required to announce official release of the draft EA almost assures that a previously prepared document was released with little or no change. Since the draft EA is not the most current, complete, or relevant information on the proposal, all reviewers have been deprived of the opportunity to make the most meaningful comments. The department expects the Air Force to take special care in fulfilling its promise to "address those [scoping] comments in future versions of the EA".

All of the department's scoping comments should be addressed. The comments that follow in this response expand upon earlier comments and add new topics/issues for consideration. If the effect of all comments on the draft EA require a substantial modification of the proposal assumptions underlying assessment, discussions of its impacts, mitigation recommendations, or conclusions then the Air Force should issue a Supplemental EA.

It appears that the proposed action is based upon a wrong assumption, given recent BRAC process decisions. The MOA modification was intended to serve the needs of A-10 pilot training, and those aircraft are now scheduled for realignment to another base. Unless the proposal can be justified for the long-term by the use of other aircraft in the vicinity or the next Pope user, then the proposal should be withdrawn. If the modification can only be justified for a short period of time, then the Air Force should consider requesting a Temporary MOA designation.

In the discussion of Airspace Management and Use there was no discussion of access agreements. The FAA's regulations provide for Special Use Airspace (SUA) managers to enter agreements with agencies for controlled access to SUA. This department has

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Phone: 919-733-4984 \ FAX: 919-715-3060 \ Internet: www.enr.state.nc.us/ENR/

proposed a universal/uniform access agreement among all military airspace managers and five State agencies that use aircraft for emergency and enforcement purposes. Such agreements have been signed with Cherry Point MCAS and Camp LeJune MCB, but was not mentioned in the draft EA as a management and air safety topic.

In the discussion of Noise there was no analysis to support cumulative impact assessment. More specifically, there was no data provided or projected for next generation aircraft that can reasonably be expected to use the MOA proposed for modification or Military Training Routes (MTR) in the area.

Further, the noise text focused on community noise, which is an inappropriate generalization per "Federal Agency Review of selected Airport Noise Analysis Issues" and "Guidelines For Preparing Environmental Impact Statements On Noise". Annoyance is specific to activity/use [residence, school, hospital, etc.] as well as to individual expectation/perception [active recreation, passive recreation, etc.]. The unaddressed question is not whether the average noise level over the entire MOA footprint will increase, but whether is it already too high over specific noise sensitive areas. The EA must address noise issues more specifically.

For the purpose of noise assessment, it appears that the Affected Environment is considered to be a single uniform character. The draft EA identifies the presence of Jones Lake State Park, Singletary Lake State Park, and Bladen Lakes State Forest, but their public uses and noise sensitivity are not addressed. The proposal's proximity to Lumber River State Park, Federally designated Wild & Scenic River, and State designated Natural & Scenic River were not acknowledged in the draft EA. Likewise, other noise sensitive land uses were not identified or mapped. To suggest that there is no impact to be assessed on these public lands/users because the proposed modification will not increase noise levels ignores the reality of current noise levels, their impacts, and consequences.

The draft EA text on cumulative effects includes an explanation of the purpose of Irreversible and Irretrievable Commitment of Resources review. This department's scoping comments requested review of FAA monitoring and management processes for designated SUA as a way to assesses their sensitivity for capturing potential impact changes. The response to that request will inform understanding about the level of irreversibility and commitment of resources involved in SUA designation. Such management processes and their results are a valid cumulative effects issue.

The department of Environment and Natural Resources appreciates the opportunity to review the draft EA. The following comments from divisions of this department respond from the perspective of their mission. Questions about these comments can be directed to me at 919/715-4191.

Attachments

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

Ted Alman

STATE NUMBER: 06-E-0000-0232 F03
DATE RECEIVED: 01/27/2006
AGENCY RESPONSE: 02/22/2006
REVIEW CLOSED: 02/27/2006

Virginia

MS CARRIE ATKINSON
CLEARINGHOUSE COORD
DEPT OF TRANSPORTATION
STATEWIDE PLANNING - MSC #1554
RALEIGH NC

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LUMBER RIVER COG

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N.C. Dept. of Transportation
Division of Aviation

PROJECT INFORMATION
APPLICANT: Department of the Air Force
TYPE: National Environmental Policy Act
FRD: Environmental Assessment
DESC: Proposal to expand the vertical dimensions of Gamecock Alpha Military Operations Area (MOA) to allow A-10 aircraft bases at Pope AFB to efficiently train for their primary mission -- close air support of ground forces.
CROSS-REFERENCE NUMBER: 06-E-0000-0156

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.
If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☐ NO COMMENT
☒ COMMENTS ATTACHED

SIGNED BY: _____

DATE: 03-10-06

FEB 2006 RECEIVED

Comments on the Draft Environmental Assesment

Gamecock MOA A redesigned and renamed Warthog MOA

NCDOT – Division of Aviation

1. There is no longer a need for the airspace revision. Under BRAC, which was approved by the President, the A-10 units would be relocated to Moody AFB where nearby airspace would have to be utilized for the A-10 training scenarios. The C-130 aircraft being shifted to Pope would have no current need for the airspace. To continue along this path, this additional airspace, would be created and used for other training purposes that were not identified in the original, stated rationale.

2. The cumulative impacts of the proposed airspace, plus the MTR's, SKE routes, along with compression of civilian aircraft underneath the 3000' floor did not receive appropriate consideration.

3. There was no consideration of other military units that may schedule time in the MOA with the floor at 3000'. Some years ago, the 4th Tactical Fighter Group at Seymour Johnson AFB had a proposal to lowering the floor of the Echo MOA, which was withdrawn prior to completing the approval process. However, it is our belief the low level training requirement of the F-15 still exists and use in this MOA is under estimated

4. The C-130 aircraft operate in the area under SKE routes, which allow drops into the restricted areas west of Fayetteville. The proposed MOA would create additional training alternatives from the MOA to the drop areas, and those potential operations increase should be considered.

5. Current and future instrument approaches at the business class public airports would require extensive coordination. New GPS approaches with vertical and azimuth guidance is available now to be developed, published, and utilized at the public airports in the area. Current engineering, development, and funding is ongoing to establish "precision" GPS procedures within the next 18 months at all the qualifying publicly owned GA airports in the region. . This low minima, all weather capability would increase instrument operations to these facilities, thereby creating IFR issues when the MOA is scheduled and activated.

6. The safety of civilian aircraft operating at or below 3000' would expose those operations to increased collisions with other aircraft, bird strikes, and towers in the area. The FAA estimates over 90% of all bird strikes occur below 3000'. To circumnavigate the MOA would place additional, time and distance on the civilian business community.

7. Civilian flight training at the Lumberton airport was not noted. A major university flight school (University of North Dakota) has established a satellite campus in the area. Student training is increasing and current practice areas

would have to be established in areas away from the MOA and at considerable time and expense to those pursuing an aviation education.

8. In each step of this process, we look at four conditions. First, is this consistent with an evaluation of the overall airspace available versus the specific needs. Is there a valid plan, or is this another effort to piece meal the additional airspace needs. Secondly, the cumulative impacts must be faithfully addressed during the entire process. Thirdly, RADAR is a requirement for all future airspace requested, such that communication and control can operate at the highest levels of effectiveness and efficiency. Finally, real time use must be a condition to be incorporated in the final approval such that all users (civilian and military) have maximum safety and access.

NORTH CAROLINA STATE CLEARINGHOUSE
DEPARTMENT OF ADMINISTRATION
INTERGOVERNMENTAL REVIEW

STATE NUMBER: 06-E-0000-0232 F03
DATE RECEIVED: 01/27/2006
AGENCY RESPONSE: 02/22/2006
REVIEW CLOSED: 02/27/2006

MS RENEE GLEDHILL-EARLEY
CLEARINGHOUSE COORD
DEPT OF CUL RESOURCES
ARCHIVES-HISTORY BLDG - MSC 4617
RALEIGH NC

REVIEW DISTRIBUTION
CAPE FEAR COG
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DEHNR - COASTAL MGT
DENR LEGISLATIVE AFFAIRS
DEPT OF AGRICULTURE
DEPT OF CUL RESOURCES
DEPT OF TRANSPORTATION
LUMBER RIVER COG

pref.

Cumberland Co.

PROJECT INFORMATION
APPLICANT: Department of the Air Force
TYPE: National Environmental Policy Act
ERD: Environmental Assessment

CH CS-2487
A/C 2 IN 66
S NC 24/26/66 2/15/06

DESC: Proposal to expand the vertical dimensions of Gamecock Alpha Military Operations Area (MOA) to allow A-10 aircraft bases at Pope AFB to efficiently train for their primary mission -- close air support of ground forces.

CROSS-REFERENCE NUMBER: 06-E-0000-0156

The attached project has been submitted to the N. C. State Clearinghouse for intergovernmental review. Please review and submit your response by the above indicated date to 1301 Mail Service Center, Raleigh NC 27699-1301.
If additional review time is needed, please contact this office at (919)807-2425.

AS A RESULT OF THIS REVIEW THE FOLLOWING IS SUBMITTED:

☒ NO COMMENT

☐ COMMENTS ATTACHED

SIGNED BY: Renee Gledhill-Earley

RECEIVED DATE: 2-21-06
FEB 17 2006

FEB 01 2006

State of North Carolina
NCDENR Department of Environment and Natural Resources

Reviewing Office: Fayetteville RO

Project Number: 06-0232 Due Date: 02/22/06

INTERGOVERNMENTAL REVIEW - PROJECT COMMENTS

After review of this project it has been determined that the DENR permit(s) and/or approvals indicated may need to be obtained in order for this project to comply with North Carolina Law. Questions regarding these permits should be addressed to the Regional Office indicated on the reverse of this form. All applications, information and guidelines relative to these plans and permits are available from the same Regional Office.

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)
☐	Permit to construct & operate wastewater treatment facilities, sewer system extensions & sewer systems not discharging into state surface waters.	Application 90 days before begin construction or award of construction contracts. On-site inspection. Post-application technical conference usual.	30 days (90 days)
☐	NPDES-permit to discharge into surface water and/or permit to operate and construct wastewater facilities discharging into state surface waters.	Application 180 days before begin activity. On-site inspection preapplication conference usual. Additionally, obtain permit to construct wastewater treatment facility-granted after NPDES. Reply time, 30 days after receipt of plans or issue of NPDES permit-whichever is later.	90 - 120 days (N/A)
☐	Water Use Permit	Preapplication technical conference usually necessary	30 days (N/A)
☐	Well Construction Permit	Complete application must be received and permit issued prior to the installation of a well.	7 days (15 days)
☐	Dredge and Fill Permit	Application copy must be served on each adjacent riparian property owner. On-site inspection. Preapplication conference usual. Filling may require Easement to Fill from N.C. Department of Administration and Federal Dredge and Fill Permit.	55 days (90 days)
☐	Permit to construct & operate Air Pollution Abatement facilities and/or Emission Sources as per 15 A NCAC (2Q.0100, 2Q.0300, 2H.0600)	N/A	60 days
☑	Any open burning associated with subject proposal must be in compliance with 15 A NCAC 2D.1900	N/A	60 days (90 days)
☑	Demolition or renovations of structures containing asbestos material must be in compliance with 15 A NCAC 2D.1110 (a) (1) which requires notification and removal prior to demolition. Contact Asbestos Control Group 919-733-0820.		
☐	Complex Source Permit required under 15 A NCAC 2D.0800		
☐	The Sedimentation Pollution Control Act of 1973 must be properly addressed for any land disturbing activity. An erosion & sedimentation control plan will be required if one or more acres to be disturbed. Plan filed with proper Regional Office (Land Quality Section) at least 30 days before beginning activity. A fee of $50 for the first acre or any part of an acre.		20 days (30 days)
☐	The Sedimentation Pollution Control Act of 1973 must be addressed with respect to the referenced Local Ordinance.		30 days
☐	Sedimentation and erosion control must be addressed in accordance with NCDOT's approved program. Particular attention should be given to design and installation of appropriate perimeter sediment trapping devices as well as stable stormwater conveyances and outlets.		
☐	Mining Permit	On-site inspection usual. Surety bond filed with DENR. Bond amount varies with type mine and number of acres of affected land. Any are mined greater than one acre must be permitted. The appropriate bond must be received before the permit can be issued.	30 days (60 days)
☐	North Carolina Burning permit	On-site inspection by N.C. Division of Forest Resources if permit exceeds 4 days	1 day (N/A)
☐	Special Ground Clearance Burning Permit-22 counties in coastal N.C. with organic soils.	On-site inspection by N.C. Division of Forest Resources required "if more than five acres of ground clearing activities are involved. Inspections should be requested at least ten days before actual burn is planned."	1 day (N/A)
☐	Oil Refining Facilities	N/A	90 - 120 days (N/A)

	PERMITS	SPECIAL APPLICATION PROCEDURES or REQUIREMENTS	Normal Process Time (Statutory Time Limit)
☐	Dam Safety Permit	If permit required, application 60 days before begin construction. Applicant must hire N.C. qualified engineer to: prepare plans, inspect construction, certify construction is according to DENR approved plans. May also require permit under mosquito control program, and a 404 permit from Corps of Engineers. An inspection of site is necessary to verify Hazard Classification. A minimum fee of $200.00 must accompany the application. An additional processing fee based on a percentage or the total project cost will be required upon completion.	30 days (60 days)
☐	Permit to drill exploratory oil or gas well	File surety bond of $5,000 with DENR running to State of N.C. conditional that any well opened by drill operator shall, upon abandonment, be plugged according to DENR rules and regulations.	10 days (N/A)
☐	Geophysical Exploration Permit	Application filed with DENR at least 10 days prior to issue of permit. Application by letter. No standard application form.	10 days (N/A)
☐	State Lakes Construction Permit	Application fees based on structure size is charged. Must include descriptions & drawings of structure & proof of ownership of riparian property.	15 - 20 days (N/A)
☐	401 Water Quality Certification	N/A	55 days (130 days)
☐	CAMA Permit for MAJOR development	$250.00 fee must accompany application	60 days (130 days)
☐	CAMA Permit for MINOR development	$50.00 fee must accompany application	22 days (25 days)
☐	Several geodetic monuments are located in or near the project area. If any monument needs to be moved or destroyed, please notify: N.C. Geodetic Survey, Box 27687 Raleigh, N.C. 27611		
☐	Abandonment of any wells, if required must be in accordance with Title 15A, Subchapter 2C.0100.		
☐	Notification of the proper regional office is requested if "orphan" underground storage tanks (USTS) are discovered during any excavation operation.		
☐	Compliance with 15A NCAC 2H 1000 (Coastal Stormwater Rules) is required.		45 days (N/A)
*	Other comments (attach additional pages as necessary, being certain to cite comment authority)		

REGIONAL OFFICES

Questions regarding these permits should be addressed to the Regional Office marked below.

☐ **Asheville Regional Office**
59 Woodfin Place
Asheville, N.C. 28801
(828) 251-6208

☐ **Mooresville Regional Office**
919 North Main Street
Mooresville, N.C. 28115
(704) 663-1699

☐ **Wilmington Regional Office**
127 Cardinal Drive Extension
Wilmington, N.C. 28405
(910) 395-3900

☐ **Fayetteville Regional Office**
225 Green Street, Suite 714
Fayetteville, N.C. 28301
(910) 486-1541

☐ **Raleigh Regional Office**
3800 Barrett Drive, P.O. Box 27687
Raleigh, N.C. 27611
(919) 571-4700

☐ **Winston-Salem Regional Office**
585 Waughtown Street
Winston-Salem, N.C. 27107
(336) 771-4600

☐ **Washington Regional Office**
943 Washington Square Mall
Washington, N.C. 27889
(252) 946-6481

TOWN OF ELIZABETHTOWN

AIRPORT/ECONOMIC DEVELOPMENT COMMISSION

CURTIS L. BROWN, JR. FIELD

P.O. BOX 1716 • ELIZABETHTOWN, NORTH CAROLINA 28337
TELEPHONE 910/862-4522 (Terminal Bldg.) • FAX 910/862-3299
www.elizabethtownnc.org

FREDERICK M. TATE, Chairman

Email: etairport@intrstar.net

February 21, 2006

John "Jay" Austin
EA Project Manager
HQ ACC/A7ZP
129 Andrews Street, Suite 102
Langley AFB, VA 23665

Re: Proposed Modifications to the Gamecock A Military Operations Area (MOA)

Dear Mr. Austin:

This letter is in response to the public notification of proposed modifications to the Gamecock Alpha Military Operations Area (MOA). You will recall that the Elizabethtown Airport Economic Development Commission sent a letter to your office in November 2005 objecting to any changes in airspace around Curtis L. Brown, Jr. Field (EYF). Since that time our position on this matter has not changed and again we strongly object to lowering the floor for Gamecock A MOA, especially around EYF airspace.

As a General Aviation Airport (GAA), Curtis L. Brown, Jr. Field relies heavily on air traffic to support airport operations. Reducing the airspace around EYF would have an adverse economic impact on the airport. Additionally, we feel that the proposed changes would be a hazard for pilots unfamiliar with EYF and the surrounding area.

We ask that the military space of Gamecock A MOA be left unchanged and kept at the current 7,000 feet above mean sea level. We appreciate your office's consideration in this matter. If there are any questions, please do not hesitate to contact myself or Elizabethtown Planning Director Mary Jo Gollnitz at (910) 862-6385.

Sincerely,

Fredrick M. Tate

Fredrick M. Tate
Chairman

CC: Congressman Mike McIntyre
Senator Anthony Rand
Representative Edd Nye
William H. Williams, Jr., NCDOT Division of Aviation Director
Craig Judd, Airspace Coordinator
Rick W. Barkes, NCDOT Aviation System Development Manager
Town Council
David Bone, Town Manager
Elizabethtown Airport Economic Development Commission
Oscar Taylor, EYF FBO Operator

AIRCRAFT OWNERS AND PILOTS ASSOCIATION
421 Aviation Way • Frederick, MD 21701-4798
Telephone (301) 695-2000 • Fax (301) 695-2375
www.aopa.org

March 15, 2006

Mr. John Austin
HQ ACC/A7ZP
129 Andrews St., Ste. 102
Langley AFB, VA 23665-2769

Re: Draft Environmental Assessment Gamecock Alpha Military Operations Area

Dear Mr. Austin,

The Aircraft Owners and Pilots Association (AOPA), on behalf of more than 406,000 members nationwide, submits the following comments regarding the draft environmental assessment (EA) for the proposed modifications to the Gamecock Alpha Military Operations Area (MOA), located in southeast North Carolina. AOPA is opposed to the vertical expansion of the Gamecock Alpha MOA due to its irrelevant status resulting from the base realignment and closure (BRAC) law, and its negative impacts on general aviation operations on Victor Airway 136 and all flights between Myrtle Beach, South Carolina and points northwest.

Lack of justification and BRAC

AOPA contends there is insufficient justification for the Air Force's request for vertical expansion of Gamecock Alpha airspace based on the BRAC outcome of 2005, and its impact on the 23rd fighter group. The BRAC commission's recommendations called for the A-10s based at Pope Air Force Base to be relocated to other Department of Defense (DOD) assets. The draft EA indicates that certain training maneuvers involving only A-10s from Pope are the purpose for seeking additional special-use airspace. Based on the final BRAC report, and codification of that report into law, it appears Pope's A-10 assets will be redirected to other DOD facilities and there is no reason to continue moving forward with the proposed airspace expansion.

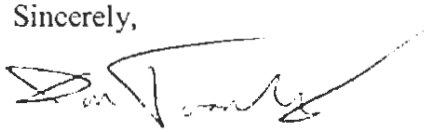
Furthermore, priority scheduling should not be a justification when attempting to establish additional special-use airspace. This becomes even more significant when taken into conjunction with the fact that the additional 4,000 ft. of Gamecock Alpha would only be used 25 percent of the total training time. With so many areas of special-use airspace in the vicinity of Pope Air Force Base, it seems likely the Air Force could coordinate training resources at current areas of special-use airspace.

The impact on general aviation operations

Gamecock Alpha's current floor of 7,000 ft. allows for instrument flight rules (IFR) and visual flight rules (VFR) transitions along Victor Airway V136 to and from the popular vacation destination of Myrtle Beach, South Carolina and all points northwest. However, lowering the floor of the MOA to 3,000 ft., as proposed in the draft EA, would render the airway inaccessible to IFR traffic. While the draft EA addresses mitigation actions that include releasing the airspace to air traffic control (ATC), this does not take into account the vast number of general aviation pilots that completely avoid MOAs regardless of status. According to an AOPA member survey conducted in 2005, 67 percent of all general aviation pilots avoid MOAs completely, whether the airspace is active or not. Simply stating the expanded airspace will have a "minimal impact" on general aviation operations does not account for the increased operational expenses pilots will incur by having to divert around the MOA. Lowering the floor of Gamecock Alpha will also have a crippling effect on Curtis L. Brown Jr. Field (EYF) in Elizabethtown. The airport serves a vital role in the national transportation infrastructure, as is evidenced by its inclusion in the National Plan of Integrated Airport System (NPIAS). The multiple instrument approaches that serve EYF would not be available while the MOA is in use, and pilots will be forced to avoid EYF in favor of other area airports. Potential agreements the Air Force is pursuing with ATC in order to mitigate the impact to EYF do not guarantee the continued vitality of the airport, and therefore are not acceptable as the only mitigation measure.

Based on the facts that the proposed airspace is no longer justified as a result of the 2005 BRAC report and the draft EA fails to fully address the impacts on general aviation operations, AOPA opposes the proposed expansion of the Gamecock Alpha MOA and strongly suggests the Air Force rescind the draft EA.

Sincerely,



Ian Twombly
Air Traffic Services

David R. Smith
1013 Mt Vernon Dr.
North Myrtle Beach, SC 29582
February 24, 2006

Mr. John Austin
129 Andrews St. Suite 102
Langley, VA 23665-2769

Dear Mr. Austin:

I recently became aware of the proposal to expand Gamecock A MOA. I strongly oppose this plan. I am a pilot and aircraft owner who would be adversely affected by this plan. I am based at Grand Strand (CRE) in North Myrtle Beach, I frequently fly to Fayetteville, Smithfield and Maryland. All of my flying is VFR. I always make use of flight following, I have experienced no difficulty , nor have I been aware of any problems as I transverse V136. I often fly along Victor airways. My point is, if it's not broke, why fix it? I usually fly at an altitude of 5500 ft or higher because of MOA restrictions in VA.
I also feel safer flying higher than 3000 ft when going to Johnston County Airport(JNX).
I feel that this proposal does not grant any provision for the pilots who would be greatly affected by this plan, therefore, I am strongly opposed to this proposal.

Respectfully,

David R. Smith,
Private Pilot

APPENDIX B

AIRCRAFT NOISE ANALYSIS

***** MOA RANGE NOISEMAP *****
Version 2.2
Release Date 15 August 1999

Baseline / Existing Noise Levels

SETUP PARAMETERS

Number of MOAs and Ranges = 1 Number of tracks = 6
Lower Left Corner of Grid (Lat/Long) = 34 00 00 N 080 00 00 W
Upper Right Corner of Grid (Lat/Long) = 35 00 00 N 078 00 00 W
Grid spacing = 1000. feet Number of events above an SEL of 45 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name GAMECOCK A

Latitude	Longitude
34 45 40 N	078 41 27 W
34 32 17 N	078 19 44 W
34 24 01 N	078 25 39 W
34 21 25 N	079 04 00 W
34 31 01 N	079 03 57 W
34 45 40 N	078 41 27 W

Floor = 7000 feet AGL Ceiling = 18000 feet AGL

TRACK SPECIFICATIONS

Track name IR-0035

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)
LW	33 55 01 N	078 17 58 W	30380.	30380.	300	
LW	34 27 02 N	078 14 57 W	30380.	30380.	300	
LW	34 27 01 N	078 57 57 W	30380.	30380.	300	
LW	33 57 00 N	079 19 00 W	30380.	30380.	300	
LW	33 58 01 N	080 03 00 W	30380.	18228.	300	
LW	33 36 00 N	080 33 00 W	30380.	30380.	300	
LW	33 35 60 N	081 04 00 W	30380.	30380.	300	

Track name IR-0062

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)
LW	35 24 02 N	076 32 57 W	24304.	24304.	4000	
LW	36 13 02 N	077 06 59 W	24304.	24304.	3000	
LW	36 29 01 N	077 40 00 W	18228.	24304.	3000	
LW	36 38 02 N	078 31 59 W	18228.	24304.	3000	
LW	36 24 01 N	079 20 00 W	24304.	24304.	3000	
LW	35 44 03 N	079 38 59 W	24304.	24304.	3000	
LW	34 53 00 N	079 42 00 W	24304.	24304.	3000	
LW	34 32 01 N	079 18 00 W	24304.	24304.	3000	
LW	34 32 01 N	078 46 58 W	24304.	24304.	3000	
LW	34 44 02 N	077 58 58 W	24304.	24304.	3000	
LW	35 20 03 N	077 27 57 W	24304.	24304.	3000	
LW	35 32 01 N	077 02 59 W	24304.	24304.	3000	
LW	35 53 02 N	076 32 59 W	24304.	24304.	3000	

Track name VR-0087

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)
LW	34 46 60 N	080 16 01 W	60760.	60760.	300	
LW	34 31 60 N	079 50 00 W	60760.	60760.	300	
LW	34 30 60 N	079 06 00 W	60760.	60760.	100	
LW	34 08 59 N	078 38 58 W	60760.	60760.	100	
LW	34 09 00 N	079 27 00 W	48608.	48608.	100	
LW	33 54 00 N	080 00 00 W	48608.	48608.	100	

LW	33 43 18 N	080 21 00 W	48608.	48608.	100

Track name VR-1040

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)
LW	33 54 00 N	078 21 57 W	12152.	12152.	500	
LW	34 26 06 N	078 15 57 W	12152.	12152.	200	
LW	34 27 01 N	078 57 57 W	12152.	12152.	200	
LW	33 45 00 N	079 44 00 W	18228.	6076.	200	
LW	33 31 01 N	079 48 59 W	18228.	18228.	200	
LW	33 19 59 N	079 56 59 W	18228.	18228.	500	
LW	33 09 01 N	080 22 01 W	18228.	18228.	500	
LW	32 19 60 N	080 28 01 W	24304.	6076.	500	
LW	31 54 01 N	080 56 00 W	18228.	18228.	200	
LW	31 31 00 N	081 11 01 W	18228.	18228.	200	
LW	30 14 60 N	081 04 02 W	18228.	18228.	200	
LW	29 42 01 N	081 14 02 W	18228.	18228.	200	
LW	29 24 02 N	081 27 01 W	18228.	18228.	200	
LW	29 23 01 N	081 31 00 W	18228.	18228.	200	

Track name VR-1043

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)
LW	34 51 60 N	077 03 57 W	12152.	12152.	200	
LW	34 30 01 N	077 10 00 W	12152.	12152.	200	
LW	33 48 19 N	077 56 34 W	12152.	12152.	500	
LW	33 54 00 N	078 21 57 W	12152.	12152.	500	
LW	34 26 06 N	078 15 57 W	12152.	12152.	200	
LW	34 27 01 N	078 57 57 W	12152.	12152.	200	
LW	34 32 02 N	079 29 57 W	12152.	12152.	200	
LW	34 34 59 N	080 07 00 W	12152.	12152.	200	
LW	34 25 00 N	080 16 02 W	6076.	6076.	200	
LW	34 00 60 N	079 59 58 W	6076.	6076.	200	
LW	34 02 60 N	079 14 59 W	12152.	12152.	200	
LW	34 01 02 N	078 38 00 W	12152.	12152.	200	
LW	34 04 60 N	077 54 00 W	12152.	12152.	200	
LW	34 35 01 N	076 31 58 W	12152.	12152.	500	
LW	34 45 31 N	076 30 59 W	12152.	12152.	500	

Track name VR-0083

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)
LW	34 21 00 N	078 54 00 W	30380.	30380.	500	
LW	34 41 01 N	078 46 58 W	30380.	30380.	500	
LW	35 45 03 N	078 03 58 W	30380.	30380.	500	
LW	35 52 02 N	078 05 59 W	30380.	30380.	500	
LW	36 46 03 N	077 54 58 W	30380.	30380.	500	
LW	36 53 01 N	078 42 00 W	30380.	30380.	500	
LW	36 53 01 N	079 04 57 W	30380.	30380.	500	
LW	36 53 01 N	079 36 58 W	30380.	30380.	500	

MISSION DATA

Mission name = F-15
Aircraft code = 144 Speed = 520 kias Power = 81.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	80
1000	2000	20

Mission name = F-16
Aircraft code = 164 Speed = 500 kias Power = 95.4

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	70
1000	2000	30

Mission name = T-39
Aircraft code = 284 Speed = 250 kias Power = 89.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	50
1000	2000	50

Mission name = C-17
Aircraft code = 66 Speed = 230 kias Power = 86.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	500	10
500	1000	65
1000	2000	25

Mission name = F-18
Aircraft code = 172 Speed = 500 kias Power = 92.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	70
1000	2000	30

Mission name = AV8
Aircraft code = 15 Speed = 300 kias Power = 95.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	500	50
500	1000	50

Mission name = V-22
Aircraft code = 344 Speed = 150 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	500	10
500	1000	65
1000	2000	25

Mission name = A-10MOA
Aircraft code = 19 Speed = 350 kias Power = 6700.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	15000	75
15000	18000	25

Mission name = AV8MOA
Aircraft code = 15 Speed = 300 kias Power = 95.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	18000	100

Mission name = F-15MOA
Aircraft code = 144 Speed = 520 kias Power = 81.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	18000	100

Mission name = F-16MOA
Aircraft code = 164 Speed = 500 kias Power = 95.4

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	18000	100

MOA OPERATION DATA

MOA name = GAMECOCK A

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	T
A-10MOA	22.661	1.511	679.83	45.33	8158.	544.	
AV8MOA	.586	.000	17.58	.00	211.	0.	
F-15MOA	2.456	.000	73.67	.00	884.	0.	
F-16MOA	.358	.000	10.75	.00	129.	0.	

TRACK OPERATION DATA

Track name = IR-0035

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F-15	.000	.278	.00	8.33	0.	100.
F-16	.000	.278	.00	8.33	0.	100.
T-39	.000	.278	.00	8.33	0.	100.
C-17	1.308	.278	39.25	8.33	471.	100.
F-18	.000	.278	.00	8.33	0.	100.
AV8	.000	.278	.00	8.33	0.	100.
V-22	.006	.278	.17	8.33	2.	100.

Track name = IR-0062

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F-15	.000	.278	.00	8.33	0.	100.
F-16	.000	.278	.00	8.33	0.	100.

T-39	.000	.278	.00	8.33	0.	100.
C-17	.000	.278	.00	8.33	0.	100.
F-18	.014	.278	.42	8.33	5.	100.
AV8	.000	.278	.00	8.33	0.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-0087

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.658	.278	19.75	8.33	237.	100.
F-16	.233	.278	7.00	8.33	84.	100.
T-39	.047	.278	1.42	8.33	17.	100.
C-17	.006	.278	.17	8.33	2.	100.
F-18	.011	.278	.33	8.33	4.	100.
AV8	.022	.278	.67	8.33	8.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-1040

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.319	.278	9.58	8.33	115.	100.
F-16	.114	.278	3.42	8.33	41.	100.
T-39	.022	.278	.67	8.33	8.	100.
C-17	.003	.278	.08	8.33	1.	100.
F-18	.006	.278	.17	8.33	2.	100.
AV8	.011	.278	.33	8.33	4.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-1043

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.533	.278	16.00	8.33	192.	100.
F-16	.189	.278	5.67	8.33	68.	100.
T-39	.039	.278	1.17	8.33	14.	100.
C-17	.006	.278	.17	8.33	2.	100.
F-18	.008	.278	.25	8.33	3.	100.
AV8	.017	.278	.50	8.33	6.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-0083

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	1.933	.278	58.00	8.33	696.	100.
F-16	.000	.278	.00	8.33	0.	100.
T-39	.000	.278	.00	8.33	0.	100.
C-17	.000	.278	.00	8.33	0.	100.
F-18	.000	.278	.00	8.33	0.	100.
AV8	.000	.278	.00	8.33	0.	100.
V-22	.000	.278	.00	8.33	0.	100.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Intersecting Avoidance Area	Uniform Distributed Sound Level (dB)	Number of Events Above SEL of 45 dB
GAMECOCK A	734.8	.0	38.0	14.8

TRACK RESULTS

Track Name = IR-0035

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	59.0	2.0
02 - 03	59.0	2.0
03 - 04	59.0	2.0
04 - 05	59.0	2.0
05 - 06	60.0	2.2
06 - 07	59.0	2.0

Track Name = IR-0062

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	47.6	2.0
02 - 03	50.2	2.0
03 - 04	50.7	2.0
04 - 05	50.7	2.0
05 - 06	50.2	2.0
06 - 07	50.2	2.0
07 - 08	50.2	2.0
08 - 09	50.2	2.0
09 - 10	50.2	2.0
10 - 11	50.2	2.0
11 - 12	50.2	2.0
12 - 13	50.2	2.0

Track Name = VR-0087

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	56.4	1.6
02 - 03	56.4	1.6
03 - 04	57.8	1.6
04 - 05	57.8	1.6
05 - 06	58.7	1.8
06 - 07	58.7	1.8

Track Name = VR-1040

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	61.1	2.1
02 - 03	61.8	2.0

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
03 - 04	61.8	2.0
04 - 05	61.8	2.0
05 - 06	61.8	2.0
06 - 07	61.0	2.1
07 - 08	61.0	2.1
08 - 09	61.1	2.1
09 - 10	61.8	2.0
10 - 11	61.8	2.0
11 - 12	61.8	2.0
12 - 13	61.8	2.0
13 - 14	61.8	2.0

Track Name = VR-1043

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	62.0	2.3
02 - 03	62.0	2.3
03 - 04	61.2	2.3
04 - 05	61.2	2.3
05 - 06	62.0	2.3
06 - 07	62.0	2.3
07 - 08	62.0	2.3
08 - 09	62.0	2.3
09 - 10	62.0	2.3
10 - 11	62.0	2.3
11 - 12	62.0	2.3
12 - 13	62.0	2.3
13 - 14	62.0	2.3
14 - 15	61.2	2.3

Track Name = VR-0083

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	59.6	3.2
02 - 03	59.6	3.2
03 - 04	59.6	3.2
04 - 05	59.6	3.2
05 - 06	59.6	3.2
06 - 07	59.6	3.2
07 - 08	59.6	3.2

<Run Log>
Date: 11/13/2005
Start Time: 14: 6:31
Stop Time: 14: 7: 9
Total Running Time: 0 minutes and 39 seconds.

WARTAPRO
***** MOA RANGE NOISEMAP *****
Version 2.2
Release Date 15 August 1999

Projected Noise Levels

SETUP PARAMETERS

Number of MOAs and Ranges = 3 Number of tracks = 6
Lower Left Corner of Grid (Lat/Long) = 34 00 00 N 080 00 00 W
Upper Right Corner of Grid (Lat/Long) = 35 00 00 N 078 00 00 W
Grid spacing = 4921. feet Number of events above an SEL of 45 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name WARTHOG B

Latitude	Longitude
34 45 43 N	078 41 27 W
34 32 17 N	078 19 44 W
34 24 01 N	078 25 39 W
34 22 46 N	078 43 17 W
34 42 59 N	078 45 31 W
34 45 43 N	078 41 27 W

Floor = 3000 feet AGL Ceiling = 7000 feet AGL

MOA name WARTHOG C

Latitude	Longitude
34 21 25 N	079 03 56 W
34 31 01 N	079 03 57 W
34 42 59 N	078 45 31 W
34 22 46 N	078 43 17 W
34 21 25 N	079 03 56 W

Floor = 3000 feet AGL Ceiling = 7000 feet AGL

MOA name WARTHOG A

Latitude	Longitude
34 45 43 N	078 41 27 W
34 32 17 N	078 19 44 W
34 24 01 N	078 25 39 W
34 21 25 N	079 03 56 W
34 31 01 N	079 03 57 W
34 45 43 N	078 41 27 W

Floor = 7000 feet AGL Ceiling = 18000 feet AGL

TRACK SPECIFICATIONS

Track name IR-0035

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	33 55 01 N	078 17 58 W	30380.	30380.	300			
LW	34 27 02 N	078 14 57 W	30380.	30380.	300			
LW	34 27 01 N	078 57 57 W	30380.	30380.	300			
LW	33 57 00 N	079 19 00 W	30380.	30380.	300			
LW	33 58 02 N	080 03 04 W	30380.	18228.	300			
LW	33 36 00 N	080 33 03 W	30380.	30380.	300			
LW	33 35 60 N	081 04 03 W	30380.	30380.	300			

Track name IR-0062

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	35 24 02 N	076 32 57 W	24304.	24304.	4000			

LW	36	13	02	N	077	06	59	W	24304.	24304.	3000
LW	36	29	01	N	077	40	00	W	18228.	24304.	3000
LW	36	38	02	N	078	31	59	W	18228.	24304.	3000
LW	36	24	01	N	079	20	00	W	24304.	24304.	3000
LW	35	44	03	N	079	38	59	W	24304.	24304.	3000
LW	34	53	00	N	079	42	00	W	24304.	24304.	3000
LW	34	32	01	N	079	18	00	W	24304.	24304.	3000
LW	34	32	01	N	078	46	58	W	24304.	24304.	3000
LW	34	44	02	N	077	58	58	W	24304.	24304.	3000
LW	35	20	03	N	077	27	57	W	24304.	24304.	3000
LW	35	32	01	N	077	02	59	W	24304.	24304.	3000
LW	35	53	02	N	076	32	59	W	24304.	24304.	3000

Track name VR-0087

Flag Notation	Latitude				Longitude				Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	34	46	60	N	080	16	05	W	60760.	60760.	300			
LW	34	31	60	N	079	50	00	W	60760.	60760.	300			
LW	34	30	60	N	079	06	00	W	60760.	60760.	100			
LW	34	08	59	N	078	38	58	W	60760.	60760.	100			
LW	34	09	00	N	079	27	00	W	48608.	48608.	100			
LW	33	54	00	N	080	00	00	W	48608.	48608.	100			
LW	33	43	18	N	080	21	03	W	48608.	48608.	100			

Track name VR-1040

Flag Notation	Latitude				Longitude				Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	33	54	00	N	078	21	57	W	12152.	12152.	500			
LW	34	26	06	N	078	15	57	W	12152.	12152.	200			
LW	34	27	01	N	078	57	57	W	12152.	12152.	200			
LW	33	45	00	N	079	44	00	W	18228.	6076.	200			
LW	33	31	01	N	079	48	59	W	18228.	18228.	200			
LW	33	19	59	N	079	56	59	W	18228.	18228.	500			
LW	33	09	01	N	080	22	05	W	18228.	18228.	500			
LW	32	19	60	N	080	28	05	W	24304.	6076.	500			
LW	31	54	01	N	080	56	04	W	18228.	18228.	200			
LW	31	31	00	N	081	11	05	W	18228.	18228.	200			
LW	30	14	60	N	081	04	05	W	18228.	18228.	200			
LW	29	42	01	N	081	14	05	W	18228.	18228.	200			
LW	29	24	02	N	081	27	04	W	18228.	18228.	200			
LW	29	23	01	N	081	31	04	W	18228.	18228.	200			

Track name VR-1043

Flag Notation	Latitude				Longitude				Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	34	51	60	N	077	03	57	W	12152.	12152.	200			
LW	34	30	01	N	077	10	00	W	12152.	12152.	200			
LW	33	48	19	N	077	56	34	W	12152.	12152.	500			
LW	33	54	00	N	078	21	57	W	12152.	12152.	500			
LW	34	26	06	N	078	15	57	W	12152.	12152.	200			
LW	34	27	01	N	078	57	57	W	12152.	12152.	200			
LW	34	32	02	N	079	29	57	W	12152.	12152.	200			
LW	34	34	59	N	080	07	04	W	12152.	12152.	200			
LW	34	25	00	N	080	16	05	W	6076.	6076.	200			
LW	34	00	60	N	079	59	58	W	6076.	6076.	200			
LW	34	02	60	N	079	14	59	W	12152.	12152.	200			
LW	34	01	02	N	078	38	00	W	12152.	12152.	200			
LW	34	04	60	N	077	54	00	W	12152.	12152.	200			
LW	34	35	01	N	076	31	58	W	12152.	12152.	500			
LW	34	45	31	N	076	30	59	W	12152.	12152.	500			

Track name VR-0083

Flag	Latitude	Longitude	Left	Right	Floor 1	Floor 2	Radius	Angle
Notation			(feet)	(feet)	(feet AGL)	(feet AGL)	(feet)	(degrees)
LW	34 21 00 N	078 54 00 W	30380.	30380.	500			
LW	34 41 01 N	078 46 58 W	30380.	30380.	500			
LW	35 45 03 N	078 03 58 W	30380.	30380.	500			
LW	35 52 02 N	078 05 59 W	30380.	30380.	500			
LW	36 46 03 N	077 54 58 W	30380.	30380.	500			
LW	36 53 01 N	078 42 00 W	30380.	30380.	500			
LW	36 53 01 N	079 04 57 W	30380.	30380.	500			
LW	36 53 01 N	079 36 58 W	30380.	30380.	500			

MISSION DATA

Mission name = F-15
Aircraft code = 144 Speed = 520 kias Power = 81.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	80
1000	2000	20

Mission name = F-16
Aircraft code = 164 Speed = 500 kias Power = 95.4

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	70
1000	2000	30

Mission name = T-39
Aircraft code = 284 Speed = 250 kias Power = 89.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	50
1000	2000	50

Mission name = C-17
Aircraft code = 66 Speed = 230 kias Power = 86.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	500	10
500	1000	65
1000	2000	25

Mission name = F-18
Aircraft code = 172 Speed = 500 kias Power = 92.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	70
1000	2000	30

Mission name = AV8

Aircraft code = 15 Speed = 300 kias Power = 95.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	500	50
500	1000	50

Mission name = V-22

Aircraft code = 344 Speed = 150 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
100	500	10
500	1000	65
1000	2000	25

Mission name = A10_MOA_LB

Aircraft code = 19 Speed = 350 kias Power = 6700.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
3000	4500	14
4500	7000	86

Mission name = A10_MOA_LC

Aircraft code = 19 Speed = 350 kias Power = 6700.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
3000	4500	14
4500	7000	86

Mission name = A10_MOA_HI

Aircraft code = 19 Speed = 350 kias Power = 6700.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	18000	100

Mission name = AV8_MOA_LB

Aircraft code = 15 Speed = 300 kias Power = 95.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
5000	7000	100

Mission name = AV8_MOA_LC

Aircraft code = 15 Speed = 300 kias Power = 95.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
5000	7000	100

Mission name = AV8_MOA_HI

Aircraft code = 15 Speed = 300 kias Power = 95.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	18000	100

Mission name = F15_MOA_LB
Aircraft code = 144 Speed = 520 kias Power = 81.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
5000	7000	100

Mission name = F15_MOA_LC
Aircraft code = 144 Speed = 520 kias Power = 81.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
5000	7000	100

Mission name = F15_MOA_HI
Aircraft code = 144 Speed = 520 kias Power = 81.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	18000	100

Mission name = F16_MOA_LB
Aircraft code = 164 Speed = 500 kias Power = 95.4

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
5000	7000	100

Mission name = F16_MOA_LC
Aircraft code = 164 Speed = 500 kias Power = 95.4

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
5000	7000	100

Mission name = F16_MOA_HI
Aircraft code = 164 Speed = 500 kias Power = 95.4

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7000	18000	100

MOA OPERATION DATA

MOA name = WARTHOG B

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
A10_MOA_LB	4.544	.289	136.33	8.67	1636.	104.	

30						
AV8_MOA_LB	.072	.000	2.17	.00	26.	0.
30						
F15_MOA_LB	.042	.000	1.25	.00	15.	0.
30						
F16_MOA_LB	.294	.000	8.83	.00	106.	0.
0						

MOA name = WARTHOG C

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
Time On Range (minutes)						
A10_MOA_LC	1.136	.072	34.08	2.17	409.	26.
30						
AV8_MOA_LC	.017	.000	.50	.00	6.	0.
30						
F15_MOA_LC	.075	.000	2.25	.00	27.	0.
0						
F16_MOA_LC	.011	.000	.33	.00	4.	0.
30						

MOA name = WARTHOG A

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
Time On Range (minutes)						
A10_MOA_HI	16.997	1.133	509.92	34.00	6119.	408.
30						
AV8_MOA_HI	.497	.000	14.92	.00	179.	0.
30						
F15_MOA_HI	2.086	.000	62.58	.00	751.	0.
30						
F16_MOA_HI	.306	.000	9.17	.00	110.	0.
30						

TRACK OPERATION DATA

Track name = IR-0035

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.000	.278	.00	8.33	0.	100.
F-16	.000	.278	.00	8.33	0.	100.
T-39	.000	.278	.00	8.33	0.	100.
C-17	1.308	.278	39.25	8.33	471.	100.
F-18	.000	.278	.00	8.33	0.	100.
AV8	.000	.278	.00	8.33	0.	100.
V-22	.006	.278	.17	8.33	2.	100.

Track name = IR-0062

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.000	.278	.00	8.33	0.	100.
F-16	.000	.278	.00	8.33	0.	100.

T-39	.000	.278	.00	8.33	0.	100.
C-17	.000	.278	.00	8.33	0.	100.
F-18	.014	.278	.42	8.33	5.	100.
AV8	.000	.278	.00	8.33	0.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-0087

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.658	.278	19.75	8.33	237.	100.
F-16	.233	.278	7.00	8.33	84.	100.
T-39	.047	.278	1.42	8.33	17.	100.
C-17	.006	.278	.17	8.33	2.	100.
F-18	.011	.278	.33	8.33	4.	100.
AV8	.022	.278	.67	8.33	8.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-1040

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.319	.278	9.58	8.33	115.	100.
F-16	.114	.278	3.42	8.33	41.	100.
T-39	.022	.278	.67	8.33	8.	100.
C-17	.003	.278	.08	8.33	1.	100.
F-18	.006	.278	.17	8.33	2.	100.
AV8	.011	.278	.33	8.33	4.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-1043

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	.533	.278	16.00	8.33	192.	100.
F-16	.189	.278	5.67	8.33	68.	100.
T-39	.039	.278	1.17	8.33	14.	100.
C-17	.006	.278	.17	8.33	2.	100.
F-18	.008	.278	.25	8.33	3.	100.
AV8	.017	.278	.50	8.33	6.	100.
V-22	.000	.278	.00	8.33	0.	100.

Track name = VR-0083

	Daily		Monthly		Yearly	
Mission Name	Day OPS	Night OPS	Day OPS	Night OPS	Day OPS	Night OPS
F-15	1.933	.278	58.00	8.33	696.	100.
F-16	.000	.278	.00	8.33	0.	100.
T-39	.000	.278	.00	8.33	0.	100.
C-17	.000	.278	.00	8.33	0.	100.
F-18	.000	.278	.00	8.33	0.	100.
AV8	.000	.278	.00	8.33	0.	100.
V-22	.000	.278	.00	8.33	0.	100.

****
* Warning: Grid points spaced greater than 1000 feet *
* apart may not provide the necessary grid resolution, *

```
*   in some cases, to compute noise contours with        *
*   high accuracy.  For low-altitude track operations,   *
*   the recommended grid spacing is less than 1000 feet. *
*                                                        *
*   Computing a high resolution grid may require         *
*   breaking the airspace into sections,                 *
*   to avoid exceeding MR_NMAP program limits.           *
**********************************************************

*** WARNING FROM SUBROUTINE MOAMAP ***
Time in the MOA =    0 minutes
Mission Speed =  500 kts
Both of these must be greater than zero.
Check input file.
*** WARNING FROM SUBROUTINE MOAMAP ***
Time in the MOA =    0 minutes
Mission Speed =  520 kts
Both of these must be greater than zero.
Check input file.
```

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Intersecting Avoidance Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Events Above SEL of 45 dB
WARTHOG B	409.9	.0	38.7	4.7
WARTHOG C	326.6	.0	33.5	1.5
WARTHOG A	735.8	.0	36.9	11.1

TRACK RESULTS

Track Name = IR-0035

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	59.0	2.0
02 - 03	59.0	2.0
03 - 04	59.0	2.0
04 - 05	59.0	2.0
05 - 06	60.0	2.2
06 - 07	59.0	2.0

Track Name = IR-0062

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	47.6	2.0
02 - 03	50.2	2.0
03 - 04	50.7	2.0
04 - 05	50.7	2.0
05 - 06	50.2	2.0
06 - 07	50.2	2.0
07 - 08	50.2	2.0

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
08 - 09	50.2	2.0
09 - 10	50.2	2.0
10 - 11	50.2	2.0
11 - 12	50.2	2.0
12 - 13	50.2	2.0

Track Name = VR-0087

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	56.4	1.6
02 - 03	56.4	1.6
03 - 04	57.8	1.6
04 - 05	57.8	1.6
05 - 06	58.7	1.8
06 - 07	58.7	1.8

Track Name = VR-1040

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	61.1	2.1
02 - 03	61.8	2.0
03 - 04	61.8	2.0
04 - 05	61.8	2.0
05 - 06	61.8	2.0
06 - 07	61.0	2.1
07 - 08	61.0	2.1
08 - 09	61.1	2.1
09 - 10	61.8	2.0
10 - 11	61.8	2.0
11 - 12	61.8	2.0
12 - 13	61.8	2.0
13 - 14	61.8	2.0

Track Name = VR-1043

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	62.0	2.3
02 - 03	62.0	2.3
03 - 04	61.2	2.3
04 - 05	61.2	2.3
05 - 06	62.0	2.3
06 - 07	62.0	2.3
07 - 08	62.0	2.3
08 - 09	62.0	2.3
09 - 10	62.0	2.3
10 - 11	62.0	2.3
11 - 12	62.0	2.3
12 - 13	62.0	2.3
13 - 14	62.0	2.3
14 - 15	61.2	2.3

Track Name = VR-0083

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 45 dB
01 - 02	59.6	3.2
02 - 03	59.6	3.2
03 - 04	59.6	3.2
04 - 05	59.6	3.2
05 - 06	59.6	3.2
06 - 07	59.6	3.2
07 - 08	59.6	3.2

<Run Log>
Date: 5/16/2006
Start Time: 13:58:13
Stop Time: 13:58:24
Total Running Time: 0 minutes and 11 seconds.

APPENDIX C

AIR QUALITY ANALYSIS

A-10 Emissions[1]

		Criteria Pollutants				
		CO	*VOC*	*NOx*	*SOx*	*PM*
Emissions Lbs/Hour at Intermediate Power		9.52	0.99	9.37	1.52	13.53
Sortie-Ops	8,702.00	82,816.93	8,571.47	81,537.74	13,192.23	117,764.17
Avg Time in MOA (hr)	0.50	41,408.47	4,285.74	40,768.87	6,596.12	58,882.08
Annual Emissions (tons)		20.70	2.14	20.38	3.30	29.44

Baseline Dispersion		*CO*	*VOC*	*NOx*	*SOx*	*PM*
MOA Sq Miles	736.00					
Altitude Span (Miles)	2.08					
Cubic Miles	1,533.33					
Tons per Cubic Mile		0.01	0.00	0.01	0.00	0.02

Proposed Action Dispersion		CO	VOC	NOx	SOx	PM
MOA Sq Miles	736.00					
Altitude Span (Miles)	2.84					
Cubic Miles	2,090.91					
Tons per Cubic Mile		0.01	0.00	0.01	0.00	0.01

Calculated with 5000 feet AGL Mixing Height		*CO*	*VOC*	*NOx*	*SOx*	*PM*
Baseline						
Sorties Below Mixing Height	0.00					
Avg Time in MOA (hr)	0.50					
Avg. Time below Mixing Height	0.00					
Annual Emissions (tons)		0.00	0.00	0.00	0.00	0.00

Proposed		*CO*	*VOC*	*NOx*	*SOx*	*PM*
Sorties Below Mixing Height	382.80					
Avg Time in MOA (hr)	0.50					
Avg. Time below Mixing Height	191.40					
Annual Emissions (tons)		0.91	0.09	0.90	0.15	1.30

[1] Source: A-10 Engine Emission Factors using TF34-GE-100, Air Conformity Model Technical Documentation - May 2003

There are no Sortie-Ops Under 3,000 feet AGL

Altitude	%	1,914.00
4,500 to 5,000	0.20	382.80
5,000 to 5,500	0.20	261.00
5,500 to 6,000	0.20	643.80
6,000 to 6,500	0.20	
6,500 to 7,000	0.20	