ENVIRONMENTAL ASSESSMENT
for
FIGHTER AIRCRAFT USE OF BIGGS ARMY AIRFIELD
FOR JOINT FORCES TRAINING
FORT BLISS, TEXAS AND NEW MEXICO

Prepared for:

U.S. Army Garrison, Fort Bliss
and
U.S. Air Force 7th Air Support Operations Squadron

Prepared by:

Directorate of Public Works
Environmental Division, Fort Bliss

and

Air Force NEPA Center (AFCEC/CZN)

March 2014

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PREPARED FOR:

13 MARCH 2014

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ENVIRONMENTAL ASSESSMENT
Fighter Aircraft Use of Biggs AAF for Joint Forces Training on
Fort Bliss, TX and NM

1.0 INTRODUCTION

Biggs Army Airfield (AAF) (Figure 1-1) is presently used to take-off, land, park, and refuel fighter-type aircraft on an occasional basis as part of its normal operations. For example, aircraft may utilize BAAF as a stopover point to fly from one part of the country to another. The airfield also shelters aircraft in-transit or from regional airbases when severe storms threaten. This document presents analysis of potential environmental impacts associated with proposed Fort Bliss hosting of Air Force fighter jets at Biggs Army Airfield (AAF) (Figure 1-1). The aircraft would be used in conducting joint Army/Air Force training activities including Iron Focus and other field training exercises (FTX), up to approximately six events annually.

The EA is subject to public review for a period of 30 days prior to either determination being made.

This EA has been prepared in compliance with the National Environmental Policy Act (NEPA) (42 United States Code [U.S.C.] 4321-4347, as amended); Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] 1500-1508); 32 CFR Part 651, Environmental Analysis of Army Actions; and the U.S. Army Environmental Command NEPA Analysis Guidance Manual (U.S. Army 2007). In addition, much previous analysis is presented in the Fort Bliss, Texas and New Mexico, Mission and Master Plan Supplemental Programmatic Environmental Impact Statement (SEIS), and the Fort Bliss Army Growth and Force Structure Realignment Environmental Impact Statement (GFS EIS), both of which are incorporated herein by reference (US Army 2007, US Army 2010).

The United States Air Force 7th Air Support Operations Squadron (7 ASOS) is a combat support unit located at Fort Bliss, Texas. The 7 ASOS provides tactical command and control of air power assets to the Joint Forces Air Component Commander and Joint Forces Land Component Commander for combat operations. Joint Terminal Attack Controllers (JTAC) must train in conducting air-to-ground operations, and Fort Bliss provides the expansive airspace, large land area, and well developed training infrastructure ideal for such training. The 7 ASOS supports the Army through deployment of JTAC personnel with Army units such as Fort Bliss' 1AD (1st Armored Division) to train in coordinating use of Air Force attack aircraft in joint training operations (JTO). JTAC personnel must work closely with attack fighter aircrews to ensure the Army is fully supported during these operations. As such, it is vital that JTAC personnel and fighter aircraft crews train together alongside Army units to prepare for actual combat readiness.

The Army has performed an Environmental Assessment (EA) to determine whether the proposed action would have a significant impact on the human and natural environment. Analysis has determined that a Draft Finding of No Significant Impact (FONSI) is warranted and will be submitted for public review as required.

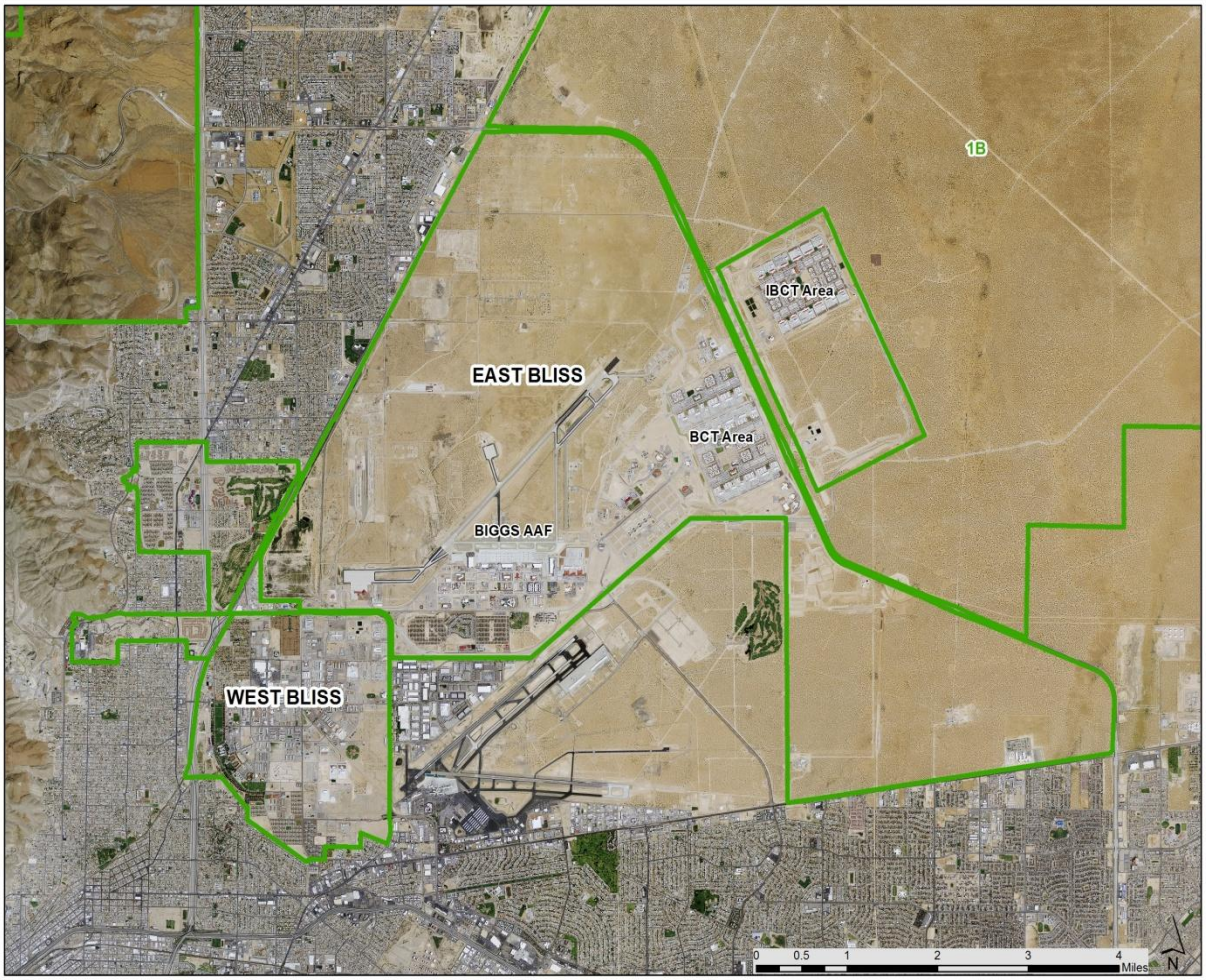

Figure 1-1. Map of Fort Bliss, Texas Main Post. Biggs AAF is near center of map. Green lines delineate Fort Bliss functional areas and adjacent El Paso, Texas communities.

2.0 PURPOSE AND NEED

The purpose of the proposed action is to provide training for aircrews and JTAC personnel in coordinated support of Army units in joint exercises held at Fort Bliss; to conduct face-to-face briefs and debriefs with Army commanders; to develop camaraderie and trust with supported local units; and to have Air Force and Army personnel gain experience in mock assaults against targets using combined air and ground forces as would normally occur in a real world operation.

By synchronizing, coordinating, and integrating military operations, the Air Force and the Army can attain higher levels of training proficiency and readiness. As such, a need exists for Air Force support forces to work directly with their supported Army units of the 1st AD at Fort Bliss in order to conduct realistic training events. Additionally, to fulfill the Army's vision of Fort Bliss becoming a premier joint training location, the integration of fixed-wing fighter aircraft is essential to achieve enhanced cross-service training objectives. Although JFO semi-annual requirements state that either live or simulated (non-ordnance use) missions can be performed,

actual ordnance expenditure is preferred. Consequently, a requirement exists to load ordnance on aircraft for joint training [JFO Memorandum of Agreement (MOA), Appendix A].

Additionally, for JTACs to stay current with training and maintain proficiency as described in Air Force Instruction Manual (AFI) 13-113, Vol. 1 (Air Force 2012), certain requirements exist that cannot be met through simulated attacks. These documents only discuss training to stay current and do not cover joint exercises. For actual employment during annual exercises, it is critical that live-fly aircraft, with actual ordnance onboard, be utilized to the maximum extent possible. Currently, in accordance with the JFO MOA, units within 1 AD cannot operate in conjunction with fixed-wing fighter aircraft without the integration of 7 ASOS JTACs.

3.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

3.1 No Action Alternative

Currently, the 7 ASOS supports joint training from Holloman AFB in New Mexico or from other home bases depending on the aircrews and type of aircraft used. The No Action Alternative would continue this support as is, but USAF and visiting allied nations' jet fighters involved in joint training would not be able to use Biggs AAF to refuel, rearm, and coordinate with local ground forces leaders and planners in a face-to-face scenario considered important to "train as you would fight."

3.2 Proposed Action Alternative

The proposed action alternative described in this section would best address the purpose and need described in Section 2. No other action alternatives were identified in this EA.

Under the Proposed Action, Air Force fighter aircraft with inert training munitions would operate out of Biggs AAF to support certain joint training exercises. Aircraft types would include F-15, F-16, A-10, and F-18 fighter jets along with the required crew members. Some of these aircraft may use jet engine afterburners to increase thrust during take-offs as the situation requires. The intensity of operations and number of expected flights are shown in Table 3-1.

Table 3-1. Operational Numbers and Intensity Under the Proposed Action.

OPERATIONS	NUMBER
Exercises per year	6
Weeks per exercise	2
Flying Days per week	5
Go's* per day	2
Aircraft per Go	4
Sorties per day	8
Sorties per exercise	80
Annual sorties	480

* Go = One Group of Take-off and Landings at Biggs AAF

There would be five flying days per week and joint training would not be expected during the weekends. All operations would occur between 8:00 AM and 12:00 midnight. Most of the take-offs and some of the landings would occur over Fort Bliss lands to the northeast of Biggs AAF

primarily using the runway designated as Runway 03 for take-offs and Runway 21 for landings (Figure 3-1). This runway configuration (taking-off directly to the northeast and landing to the southwest) would make the presence of the fighter aircraft essentially imperceptible to most of the El Paso public, and provide a safety measure for aircraft that have inert ordnance onboard. [*Note: the nomenclature for a runway is the heading that an aircraft on takeoff or landing is oriented, rounded to the nearest 10 degrees, with the last zero truncated. Therefore, aircraft taking off on a heading of 030 degrees depart on Runway 03, whereas aircraft landing on a heading of 210 degrees arrive on Runway 21*].

About five percent of the time during high winds from the northeast, unsafe tail-wind landings would not be conducted and, instead, aircraft would shift to the west of BAAF staying mainly within the Fort Bliss boundaries (but at times briefly overflying a portion of the City of El Paso) and approach Biggs AAF from the southwest using Runway 03 (Figures 3-1 and 3-4). Aircraft required to do so would normally be one (1) mile, but no further than approximately two (2) miles, from the airfield (Figure 3-4). Regardless of the runway in use, aircraft would plan to fly only one approach and landing per sortie although an extra pattern may be required at maximum rate of 0.5 per sortie or every other landing at Biggs. The fighter aircraft would conduct overhead pattern operations approximately eighty percent (80%) of the time and straight-in approaches approximately twenty percent (20%) of the time (Figures 3-2, 3-3, and Appendix B).

3.2.1 Take-Off and Landing Procedures

Take-off patterns would be almost all to the northeast using Runway 03. The exception would be when a strong southwesterly wind forces aircraft to take-off to the southwest for safety reasons. Landing patterns would also use a straight-in approach into Runway 21. However, for training reasons and to accommodate wing-man aircraft, the overhead pattern would be used for most landings. The overhead pattern is a 360° maneuver to allow the aircraft to expedite landings on the runway. Patterns would be flown to the northwest of the airfield, i.e., aircraft on initial approach to Runway 21 would "break" to the right, and would have a right hand final turn (Figure 3-2 and Appendix B). The aircraft would line up with the runway approximately 3 nautical miles (nm) away at speeds up to 300 knots and around 1,500 ft above ground level (AGL). Once over the "break" zone (defined as the runway threshold to approximately 3,000 ft down the runway) the aircraft would initiate a 180° level turn to slow the aircraft and provide a 1-2 nautical mile (nm) offset from the runway. In formation, the subsequent wingmen delay their break turn 5-7 seconds to gain 3,000 to 6,000 ft of separation from the preceding aircraft. The pilot then lowers the landing gear and flaps, as appropriate. Once the runway is approximately 45° behind the aircraft (called the "perch point"), the pilot starts a 180° descending turn to line up on the runway approximately 1-2 nm on final approach.

If required for safety, the pilot may initiate a "go around" (Figure 3-3, lower curved arrow) in which they select military power (100 percent of available thrust without the use of afterburner) and raise the landing gear and flaps. A "closed" pattern would then be requested.
That is, once at a safe airspeed, and approved by the tower, the aircraft would make a climbing 180° turn to set itself up on downwind and the pattern is repeated.

Approximately 95 percent of take-offs would use Runway 03 and 95 percent of landings for all aircraft types would be to Runway 21 from northeast to southwest. Of those landings, an

estimated 20 percent would be from a straight in approach (Figure 3-2). This type of landing would require no over-flights of adjacent El Paso communities but is used less frequently for landing than overhead patterns (Figure 3-3 and Appendix B) in order to expedite landings while minimizing the impact to BAAF traffic patterns. This pattern, with the aircraft normally one (1) mile from the runway, would also avoid over-flight of El Paso communities the majority of the time, with only ten percent of the patterns extending to two (2) miles from the runway as shown in Figure 3-3 with the white lines depicting the expected and worst case distances.

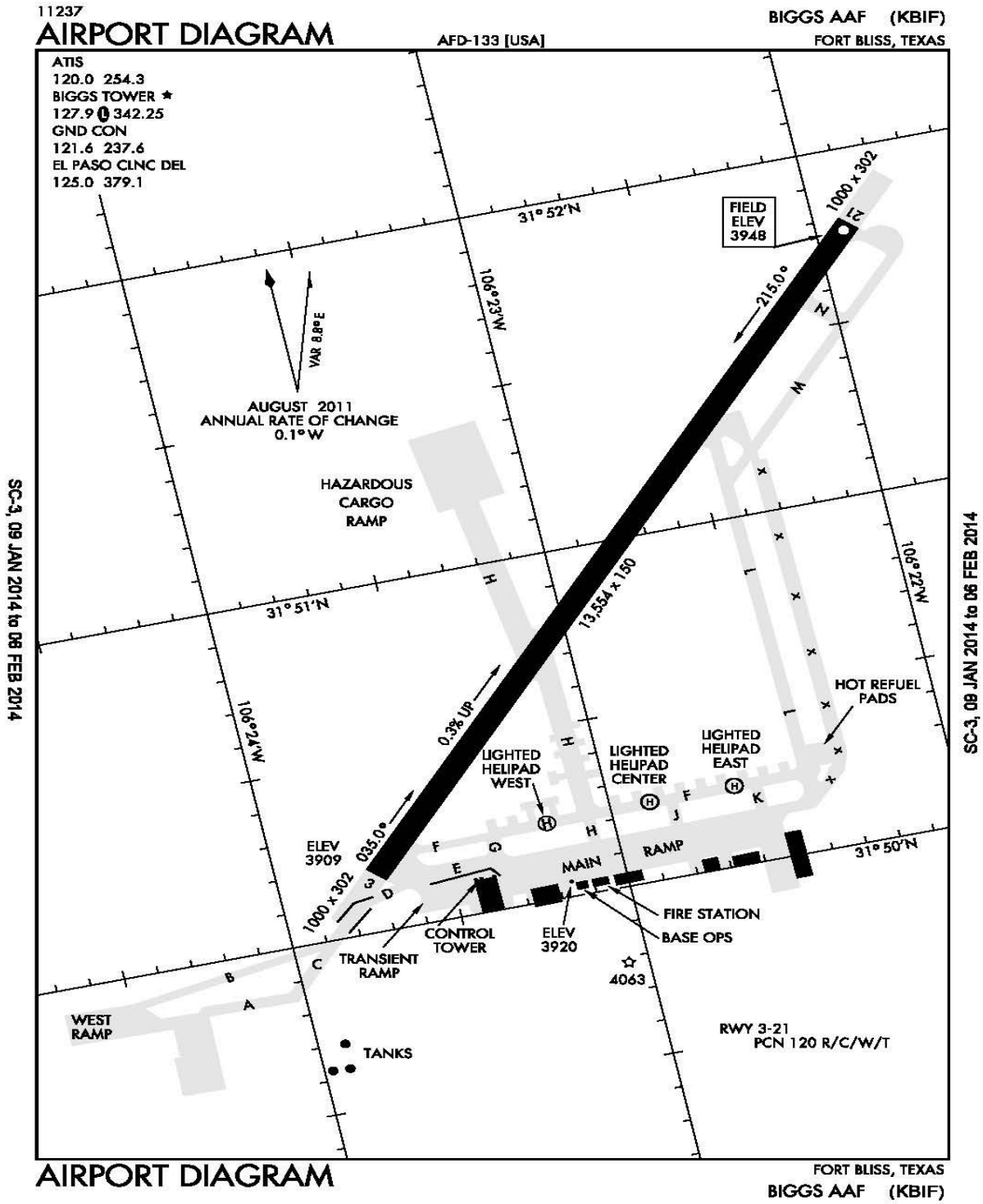

Figure 3-1. Layout of Biggs Army Airfield: Runway 21 is located at the northeast and Runway 3 is at the southwest end of the thick black line designating the major runway of Biggs AAF.

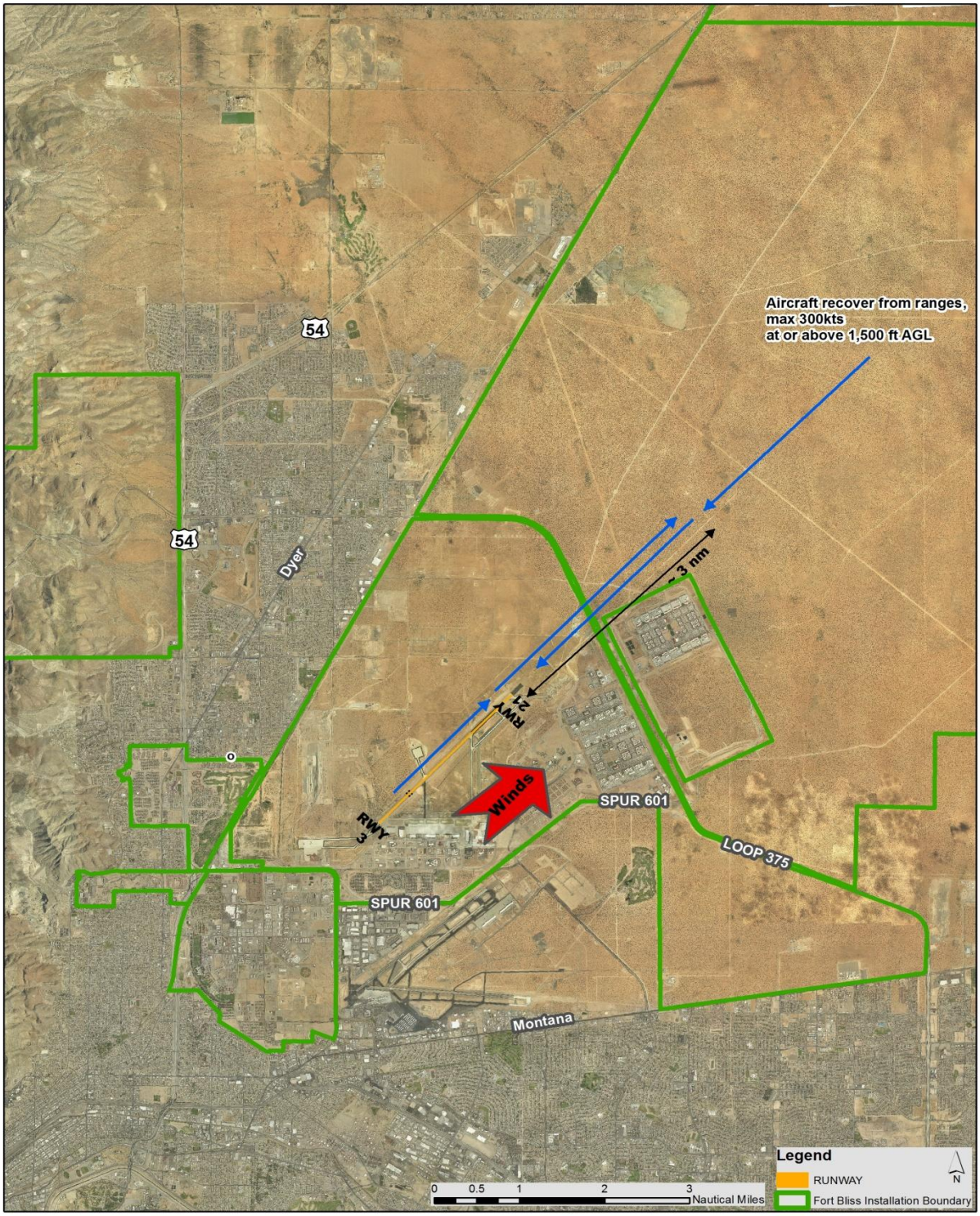

Figure 3-2. Aircraft Take-Offs and Landings: Normal aircraft take-offs would be oriented to Runway 03 and about 20% of landing patterns would be oriented straight-in to Runway 21 staying entirely within Fort Bliss training (non-populated) areas.

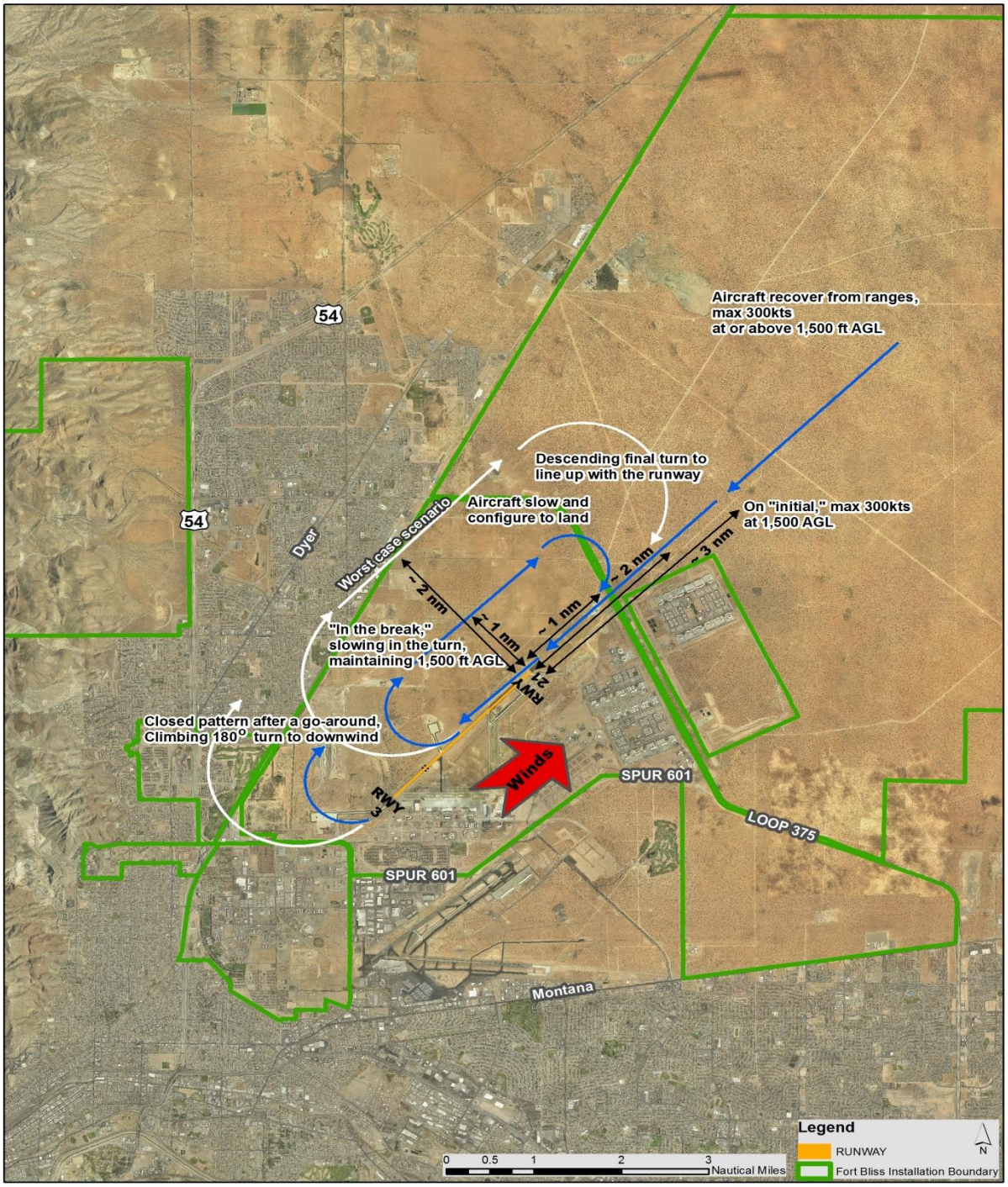

Figure 3-3. "Breaking" Landing Flight Pattern: About 80% of landings would use a "breaking" flight pattern (blue pattern), which occurs mostly within Fort Bliss. In worst case scenarios (no more than 3-5% of landings), breaking patterns (white pattern), would extend up to 2 nautical miles (nm), resulting in brief over-flights of populated areas. Curved arrows represent a "closed pattern" where the aircraft would climb back to 1,500ft AGL and the landing oriented to Runway 21 (also refer to Appendix B).

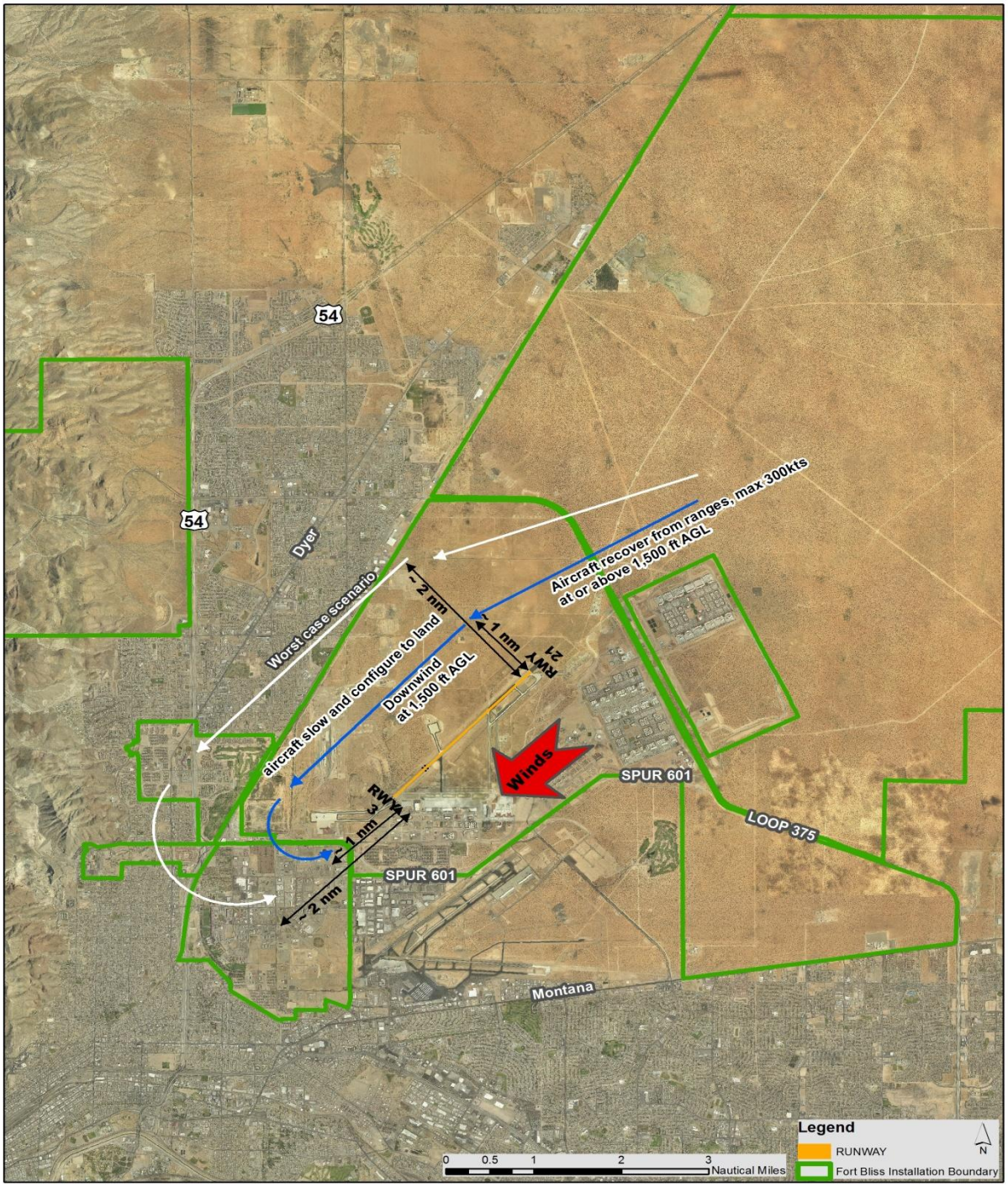

Figure 3-4. Typical Non-Breaking" Landing Flight Pattern: "Non-breaking" landing flight patterns (blue lines) avoid populated areas when aircraft approach Biggs AAF with a northeast wind (about five percent of total landings) and are oriented to Runway 03. Expected case is 1 nm from the runway, worst case (and very seldom) may occur at 2 nm as depicted by the white arcs.

3.2.2 Inert Munitions Proposed for Loading at Biggs AAF

Inert training munitions include machine gun training projectile (TP) ammunition (30mm and smaller), defensive flares, chaff squibs, captive-carry training missiles, BDU-33s, and inert concrete training bombs of 2,000 lbs or less. These munitions are already being used on the Fort Bliss ranges under the SEIS and GFS EIS analyses. Both Air Force and Army regulations indicate that inert munitions are exempt from any quantity-distance safety requirements (U.S. Air Force 2011; U.S. Army 2013). Inert munitions (non-explosive) stored on Biggs AAF would be moved utilizing current paved roads and/or taxiways. Any movement within the Controlled Movement Area (CMA) would be accomplished in coordination with Biggs AAF Ground Control via radio communication (on UHF 237.6 or VHF 121.6), or as modified by Flight Information Publications (FLIP) or Notices to Airmen (NOTAM).
The munitions proposed to be loaded on fighter aircraft are currently used on designated Fort Bliss ranges but are loaded on helicopters at designated range sites or for jet fighters at home station air bases. Both U.S. and foreign fighter aircraft use Fort Bliss ranges for deployment of ordnance at permitted ranges. The proposed action would allow these munitions (with the exception of chaff and flares) to be loaded onto aircraft at Biggs AAF. Other munitions types expected to be used are as follows:

Captive carry missiles – These are inert missiles loaded onto the wings or underside of the aircraft. These missiles are hard-wired onto the aircraft (cannot be launched) and have zero propellant or explosive charges. They only contain a sensor that is used for targeting and tracking of other aircraft to simulate a live-missile.

Chaff – This material consists of strips of aluminum or other radar reflective material that can be dropped from the aircraft as a countermeasure to enemy radar systems. The chaff containers would have a safety pin to avoid deployment while the aircraft is on the ground until the end-of-runway (EOR) checks. These containers would be re-pinned after the aircraft returns and leaves the runway to enter the ramp areas.

Flares – These items are dropped from aircraft as an infrared (heat) countermeasure against heat-seeking enemy threats. Flare containers are similarly pinned as chaff containers until the aircraft is ready for take-off. Although they typically burn at a very high temperature when released over the Fort Bliss ranges, they have a very short burn time and are completely extinguished by the time any residue hits the ground. To insure complete burn, aircraft are required to be at a minimum safe altitude when deploying flares. Additionally, there has never been a documented occurrence of flares accidently deploying on the ground when being loaded onto an aircraft (Serna, pers. comm.).

BDU – Bomb Dummy Units are non-explosive and non-guided bombs. The Air Force commonly uses the BDU-33, which is less than 2ft long, weighs 25 lbs, and has a small spotting charge that releases a small puff of smoke on impact for scoring. The bomb is a cast-iron and steel, non-explosive ordnance used in training to simulate actual bombs. Other BDU bombs of up to 2,000 lbs may be used occasionally as part of this action. The larger inert training munitions are made of steel and concrete and contain no explosives or spotting charges.

TP ammunition- Training projectile (TP) ammunition consists of solid bullets that are internally loaded in the aircraft. For safety reasons, the onboard guns are electrically and mechanically

prohibited from firing until airborne and only after given consent by the pilot. Besides the cartridge or firing mechanism which propels the projectiles forward, the bullets themselves contain no explosive or incendiary material and are not considered “live”. There have been zero (0) reported incidents of accidental gun firings on the ground in the AF safety database dating to at least the year 1960. This has been confirmed by the AF Safety Center at Kirtland AFB, NM (Serna pers. comm.). It was previously determined that high explosive munitions are not necessary to accomplish joint training objectives at Fort Bliss.

To participate in joint training, fighter aircraft would land at Biggs AAF pre-loaded with training projectile gun ammo, chaff, and flares. The aircraft would remain on the ramp for up to two weeks, fly out of, conduct multiple missions throughout the week, and then land at Biggs AAF after each sortie. While on the ramp the aircraft would refuel using Biggs AAF assets and reload inert munitions using AF load crews. These crews would build and store all inert munitions on site, to include BDUs and forward firing munitions of 30mm and less. Visiting aircraft would not, however, load chaff and flares at Biggs AAF. This would be done initially at the home base. After the JTO, all aircraft would return to their home bases.

Takeoffs would be conducted so as to extend over Fort Bliss land to the northeast of Biggs AAF and not overfly the adjacent city of El Paso (Figure 3-2). This would be an additional safety factor in the event of accidental munition release or similar accident. Periodically, aircraft would be required to conduct overhead pattern maneuvers for safety and emergency situation (landing aborts) situations. These patterns are discussed in Section 3.2.1 and illustrated in Figures 3-3 and 3-4. Aircraft would be prohibited from takeoffs during strong tailwinds following Air Force and aircraft-specific regulations.

3.2.3 Procedures for Loading Aircraft

Aircraft parked on the Hazardous Cargo Ramp (Figure 3-2) would be loaded with training munitions prior to engine start. Aircraft would start engines in their parking spot and would remain there for up to 20 minutes while conducting checklist items prior to taxi. While stationary, aircraft would use an idle power setting with momentary engine run-ups (less than 30 seconds) up to a midrange power setting in order to accomplish engine checks. In coordination with Ground Control, aircraft would use Taxiway H. Aircraft would hold short of the active runway for another 5-10 minutes to have ground crews arm the aircraft. ("Arming" simply means that the aircraft is made ready to fly and that the inert munitions are ready for use after airborne.) There are a series of safety features for the munitions that prevent them from inadvertently falling off the aircraft, to include electrical and mechanical features as well as requiring the consent of the pilot through a series of switch activations inside the cockpit. Once armed, aircraft would taxi down the runway, turn 180° and line up to utilize the full runway length for take-off. While taxiing, aircraft would temporarily increase power to a midrange setting to initially get the aircraft moving and maintain a safe taxi speed up to a maximum of 30 knots.

After landing, aircraft would clear the runway at Taxiway H for ground crews to "de-arm" the aircraft prior to taxiing back to the Hazardous Cargo Ramp. This procedure takes less than 5 minutes per aircraft. Once parked, aircraft would continue running at an idle power setting for less than 5 minutes to conduct final checklist items prior to engine shutdown.

3.2.4 Hazardous Materials Management

Hazardous materials would continue to be properly stored, handled, and disposed of using existing procedures, including using an approved Waste Accumulation Point and standard spill notification procedures, in accordance with the Fort Bliss Hazardous Waste Management Plan.

3.2.5 Physical Alterations of Biggs AAF

No physical modifications to the airfield infrastructure would be required. However, as part of the expanding Fort Bliss mission supporting the Combat Aviation Brigade, the Hot Load Area is being upgraded with HESCO barriers (See Appendix B, Figure B-2) which will also further enhance the safety procedures for the proposed action. These barriers will be filled with local soils and used to minimize the safety Danger Zone of aircraft being loaded or unloaded with ordnance, provide a safe area for aircraft with hung bombs or TP munitions to be worked on, and provide separation for aircraft determined to be a risk to other Biggs AAF assets.

3.2.6 Use of Ranges

As part of this action, Air Force fighter jets would continue the use of ranges as currently being conducted and assessed in the Fort Bliss, Texas and New Mexico, Mission and Master Plan Supplemental Programmatic Environmental Impact Statement (SEIS), and the Fort Bliss Army Growth and Force Structure Realignment Environmental Impact Statement (GFS EIS) (US Army 2007; US Army 2010), i.e., all ordnance would be expended within established impact areas within Fort Bliss. Most, if not all, ordnance use would occur at the Air Force's Centennial Range on Fort Bliss McGregor Range. Centennial Range was constructed by the Air Force within Army controlled land via a Memorandum of Agreement. It is presently used by both Air Force and allied jet fighters for training in low-altitude close air support. Some of those aircraft now using the range would be hosted by Biggs AAF as part of this action. On occasion, by request of the FTX Joint Training Commanders, and with permission from DPTMS Range Management, some ordnance may be expended in the Digital Air/Ground Integration Range (DAGIR) and Digital Multi-purpose Range Complex (DMPRC) (Figure 3-5). These ranges are already designated artillery munitions impact areas. Consequently, no new or different land uses at the Fort Bliss ranges would occur as a result of this action.

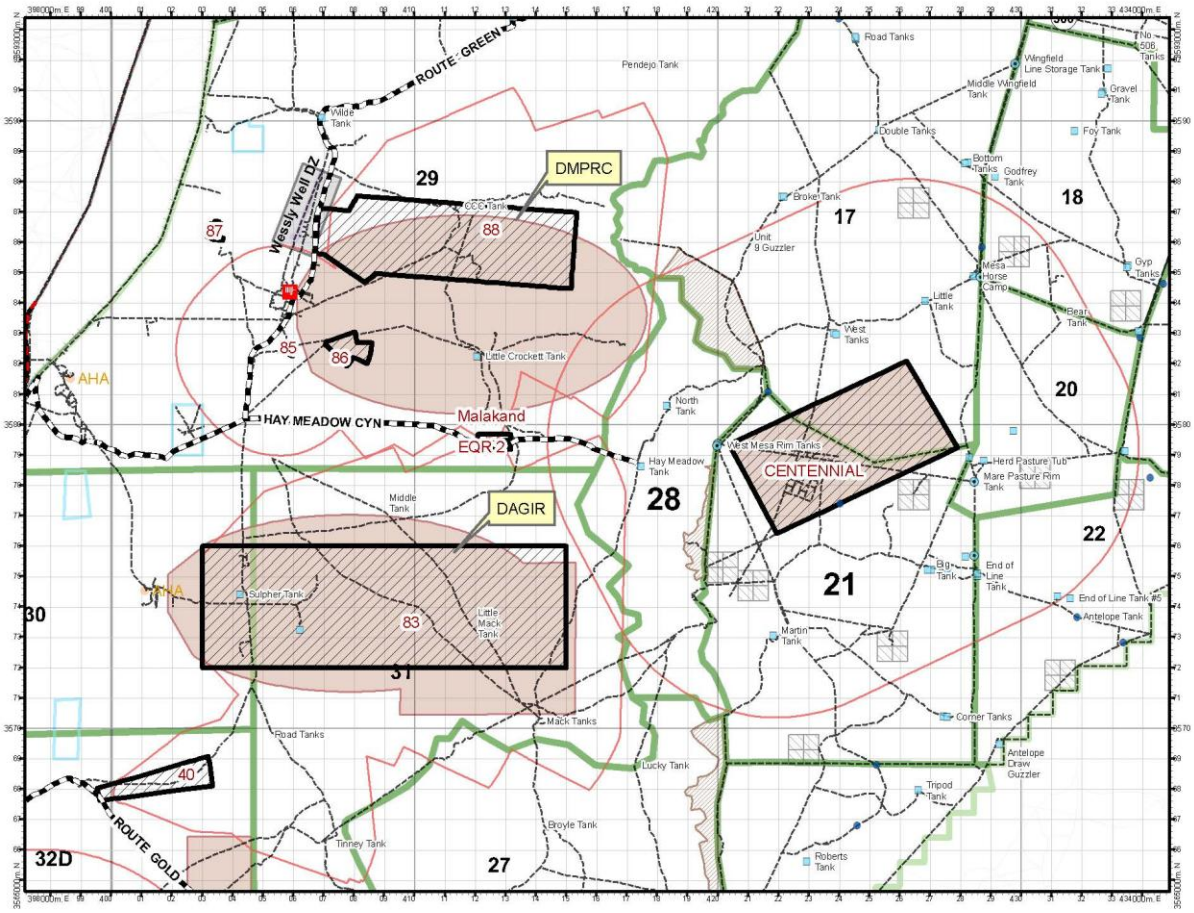

Figure 3-5. Range Location for Inert Ordnance Expenditures: Almost all of the inert ordnance expended as part of the Joint Forces Support Exercise analyzed under this document would occur at the Centennial Air Force Range. Occasionally, some ordnance may be expended at either the DMPRC or the DAGIR Ranges.

3.3 Valued Environmental Component (VEC) Analysis

The Region of Influence (ROI) analyzed for impacts to the natural and human environments from this proposed action includes the East Bliss and surrounding area out to the neighborhoods of El Paso District 2 that surround the immediate Fort Bliss training area.

Analysis ratings were determined through initial evaluation of each VEC, allowing the scope of analysis of this EA to focus on the relevant environmental components. A rating of Very Low (VL) indicates lack of any significant impact is self-evident, and that no additional discussion of the VEC is required. Low (L) indicates no significant impact is expected, but such expectation may require some explanation. Medium (M) indicates the significance of an impact is uncertain, or the impact analysis otherwise requires additional information and/or substantial discussion. High (H) indicates a significant impact is expected, and would likely lead directly to an EIS unless mitigated.

Very Low and Low analyses ratings are supported and explained in Table 3-2. Safety is the only VEC rated Medium, but controls and procedures would be implemented to greatly reduce the

chance of accident to an extremely small probability. Other VECs carried forward for analysis having importance to the Proposed Action include Air Quality, Noise, and Airspace Operations- all with Low ratings.

Table 3-2. Potential Effects of the Proposed Action on VECs

Resource	Proposed Action	No Action
Land Use and Aesthetics	VL – No change to land-use impacts or status.	None
Soils	VL – Soils would not be disturbed as part of this action.	None
Surface Water	L – No significant degradation of surface water quality is expected to occur as a result of this alternative. Erosion due to the use of ordnance at the ranges has been assessed in and mitigation measures identified in the referenced EISs. Adhering to the existing Biggs AAF Storm Water Pollution Prevention Plan (SWPPP) would continue to protect surface water bodies from airfield run-off as a part of the proposed action.	L - No significant degradation of surface water quality is expected to occur as a result of this alternative. Erosion due to the use of ordnance at the ranges has been assessed in, and mitigation measures identified, in the Records of Decision for the referenced EISs.
Groundwater	L – No significant potential that groundwater (GW) would be adversely affected from the proposed action. GW is greater the 400 feet depth in the area, aircraft would be parked on hard-top surfaces, and spill would be cleaned up per the Fort Bliss SWPPP.	None
Biological Resources	VL – impacts to wildlife due to airfield operations and training at the ranges have already been assessed in the two EISs that this document incorporates by reference.	None
Cultural Resources	VL - no ground disturbance would occur.	None
Air Quality	L – The proposed action would result in an increase in emissions within the El Paso Air Quality Maintenance Area. However, the	L – Continuing the JLO as currently conducted would also continue the practice of aircraft flying back to their home bases to

	number of additional flights and the time spent by aircraft within the maintenance area would result in only a de minimis increase in emissions affecting this area (see conformity Analysis Determination in Appendix D). Full report available at the office of the Fort Bliss NEPA Coordinator, 915-568-3908.	refuel, rearm, and then return to the joint training area, which uses more fuel and results in higher aircraft emissions when compared to the proposed action. However, these emissions would not occur within the EL Paso County air shed.
Noise	L – Noise levels would be temporarily elevated during joint exercises with fighter jet airfield operations occurring during daytime hours. Up to 8 aircraft go's (take-offs and arrivals) per day associated with the exercises. DNL noise contours expand slightly; however, the areas of increase noise exposure would not occur off-post.	VL
Transportation and Infrastructure	L – Use of Biggs AAF by visiting fighter aircraft would place demands on the Biggs AAF infrastructure. However, Biggs AAF has the capacity to absorb the number of missions proposed without having to pay for or increase support infrastructure.	VL
Safety	M – Aircraft flying over populated areas could increase the risk of hung ordnance deploying over these areas unless proper management and mitigations are conducted. Arming of aircraft has the potential to result in accidental firings with associated ricochets posing a risk to local civilian aircraft. However this risk would be mitigated by managing fighter aircraft both in how they are oriented when arming safeties are removed and using the Hot Load cargo area with the associated sandy soil HESCO barriers that will absorb possible misfires. A ricochet risk assessment plan (which would be	L – Aircraft with hung ordnance (which is relatively rare) would continue to use Holloman Air Force Base as an emergency field to clear the ordnance.

	reviewed annually and updated if necessary) would be generated by Fort Bliss and kept on file at the Biggs AAF Control Center. Additionally, there have been zero (0) documented incidences since 1960 (when records were begun) of premature gun firings by aircraft according to the U.S. Air Force Safety Center.	
Hazardous Materials and Waste	L – Aircraft landing at Biggs AAF would increase the amount of hazardous materials used and waste generated at Fort Bliss. However, Fort Bliss has a mature Haz-Mat/Waste management Plan and program that would include this action. This would assure all materials and waste would be handled and disposed of properly per applicable regulations.	None
Airspace Operations	L – Airspace within and around Biggs AAF and the El Paso International Airport (EPIA) would see increased air operations as a result of the Air Force aircraft, up to 480 additional sorties annually.	None
Wildland Fire	VL – BDU bombs or TP ammunition do not contain explosives or incendiary materials. Flares would be set off only at a minimum altitude and would be completely consumed prior to any residue hitting the ground.	None

4.0 IMPACTS OF THE NO ACTION AND ACTION ALTERNATIVES

4.1 No Action Alternative

The No Action Alternative would continue 7th ASOS support operations as they currently exist, i.e., fighter aircraft would load ordnance at either Holloman AFB or other home bases. Joint training would continue as-is, but aircrews would not be able to physically attend planning and post-operation briefs. Unit cohesiveness, camaraderie, planning, and support would be degraded and the Army and Air Force joint forces would not be able to collectively train together to improve readiness.

4.2 Proposed Action Alternative

4.2.1 Noise

Sound is a physical phenomenon consisting of minute vibrations that travel through a medium, such as air or water, and are sensed by the human ear. Sound is all around us and noise is defined as unwanted or annoying sound that interferes with or disrupts normal human activities. Although exposure to very high sound levels can cause hearing loss, the principal human response to noise is annoyance. The response of different individuals to similar noise events is diverse and is influenced by the type of noise, perceived importance of the noise, its appropriateness in the setting, time of day, type of activity during which the noise occurs, and sensitivity of the individual.

Noise and sound are expressed in decibels (dB), which are logarithmic units. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB; sound levels above 120 dB begin to be felt inside the human ear as discomfort. Sound levels between 130 to 140 dB are felt as pain (Berglund and Lindvall 1995). The minimum change in the sound level of individual events that an average human ear can detect is about 3 dB. Typically, a person perceives a doubling (or halving) of the sound's loudness when there is a 10 dB change in sound level.

All sounds have a spectral content, meaning their magnitude or level changes with frequency, where frequency is measured in cycles per second or hertz (Hz). To mimic the human ear's non-linear sensitivity and perception of different frequencies of sound, the spectral content is weighted. For example, environmental noise measurements are usually on an "A-weighted" (dBA) scale that filters out very low and very high frequencies to replicate human sensitivity. It is common to add the "A" to the measurement unit to identify that the measurement was made with this filtering process. For low frequency noise, "C-weighting" (dBC) is typically applied for impulsive sounds such as sonic booms and ordnance detonation. In accordance with DoD guidelines and standard practice for environmental impact analysis documents, this noise analysis utilizes the following, A-weighted noise descriptors or metrics: Day-Night Average Sound Level (DNL), Sound Exposure Level (SEL), Maximum Sound Level (Lmax), and Onset-Rate Adjusted Monthly Day-Night Average Sound Level (Ldmnr).

Noise Metrics

Maximum Sound Level (L_{max}) – the highest A-weighted, sound level measured during a single event in which the sound level changes value with time, e.g., an aircraft overflight.

Sound Exposure Level (SEL) – a composite metric that represents both the magnitude of a sound and its duration. Noise events such as aircraft overflights have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. The SEL metric provides a measure of the net impact of the entire acoustic event, but it does not directly represent the sound level heard at any given time. During an aircraft flyover, SEL includes both the Lmax and the lower noise levels produced during onset and recess periods (i.e., the coming and going) of the overflight.

Day-night Average Sound Level (DNL) – a composite metric that accounts for all noise events in a 24-hour period, and takes into consideration the increased human sensitivity to noise at night by applying a 10-dB penalty to nighttime events occurring between 10:00 p.m. and 7:00 a.m.

Onset-Rate Adjusted Monthly Day-Night Average Sound Level (L_{dnmr}) – similar to DNL, it is a cumulative noise metric devised to account for the "surprise" effect of the sudden onset of aircraft noise events on humans and the sporadic nature of Special Use Airspace activity. Whereas aircraft operations at airfields tend to be continuous or patterned, operations in airspace are sporadic and dispersed. L_{dnmr} also accounts for the specific effects of low-altitude and high-speed operations that can occur in airspace such as MOAs or Restricted Areas. Because military jet aircraft can exhibit a rate of increase in sound level (onset rate) of up to 150 dB per second, the L_{dnmr} metric is adjusted to account for the startle effect with addition of up to 11 dB to the normal SEL.

4.2.1.1 Aircraft Noise

Fixed-wing airspace activity in R-5103, including tactical maneuvers and close air support, was been assessed in the recent Replacement of the QF-4 FSAT with the QF-16 FSAT at Holloman AFB EA. The Ldnmr in R-5103 would be 50 dB, which is well below the 65 dB threshold of concern.

Although the Ldnmr metric provides a very useful indication of overall noise level and is a predictor of annoyance, it does not correlate to noise levels heard at any given time and is therefore not intuitively understood. Maximum noise levels, Lmax, associated with direct overflight of aircraft, which use the training airspace frequently, were calculated using the program SELCALC and are listed in Table 4-1.

Aircraft typically fly at high altitudes while en route to training airspace, but overflight noise is still annoying to some people beneath transit corridors. Transit corridors are defined by a series of waypoints, which facilitate navigation by aircrews and de-confliction of multiple aircraft by ATC.

4.2.1.2 Airfield Noise

Current baseline airfield operations were revalidated and compared to the 2010 GFS EIS as shown in Figure 4-1. Total baseline operations are detailed in Appendix C. Notably, the baseline noise contour shifted to the east of the airfield. In the 2010 GFS EIS, runway utilization was assumed to be 50/50; however, current runway utilization has the majority of departures on Runway 3 and arrivals to Runway 21. Several modeling improvements were incorporated into

the present analysis including the effect of topography (terrain elevation and ground impedance). Fixed-wing aircraft were modeled using NOISEMAP v7.2 and rotorcraft using the Rotorcraft Noise Model (RNM) v7.

Table 4-1. Maximum Noise Level (L_{max}) Under the Flight Track for Aircraft at Various Altitudes in the Primary Airspace

Aircraft Type	Airspeed (kts)	Power Setting	500 AGL	1,000 AGL	2,000 AGL	5,000 AGL	10,000 AGL	20,000 AGL
A-10A	325	5333 NF	95	87	78	65	55	43
F-15E (PW220)	450	80% NC	99	92	84	73	63	52
F-16C (PW220)	450	87% NC	108	101	93	80	67	50
F-18E/F	450	92% N2	118	110	102	90	79	66

Notes:
1) Steady, level flight
2) Engine power setting while in a SUA. The type of engine and aircraft determines the power setting.
3) SELCALC v2. Temperature = 59 °F, Relative Humidity = 70%.

Key:
AGL = Above Ground Level
%N1 = percent of low pressure compressor shaft speed
%N2 = percent of high pressure compressor shaft speed
%NF = percent of compressor fan speed
NC = percent core RPM
RPM = Rotations per minute

This EA uses two terms to describe different components of aircraft flying activities: sortie and operation. Each has a distinct meaning and commonly applies to a specific set of activities in a particular airspace environment. These terms also provide a means to quantify activities for the purposes of analysis. At an airfield, an operation comprises one action such as a departure or arrival. A closed pattern consists of two operations, i.e. a departure into the pattern and an arrival to the airfield.

Aircraft Activities

Sortie – consists of a single military aircraft from a take-off through a landing and includes a flying mission. For this EA, the term *sortie* is commonly used when summarizing an amount of flight activity from a base. A sortie can include more than one *operation.*

Operation – the single movement or individual portion of a flight. The term can apply to both airfield and airspace activities, and represents the primary analytical and descriptive quantifier of aircraft flight activities presented in this EA.

Proposed joint exercise fixed-wing activity, as described in Table 3-1, would be in addition to baseline activity. Aircraft capable of afterburner would use it when departing on Runway 21. The proposed operations are detailed in Table 4-2 and DNL noise contours shown in Figure 3-2. Proposed operations were modeled for the Average Flying Day, consistent with baseline of 250 annual flying days per AFH 32-7084 and FICON ‘92. Acreage and population counts for areas under the noise contours are listed in Table 4-3.

A significant impact would occur if the off-post population exposed to 65 dB DNL or greater increased by more than 10%. From Table 4-3, there is no increase in off-post population exposed.

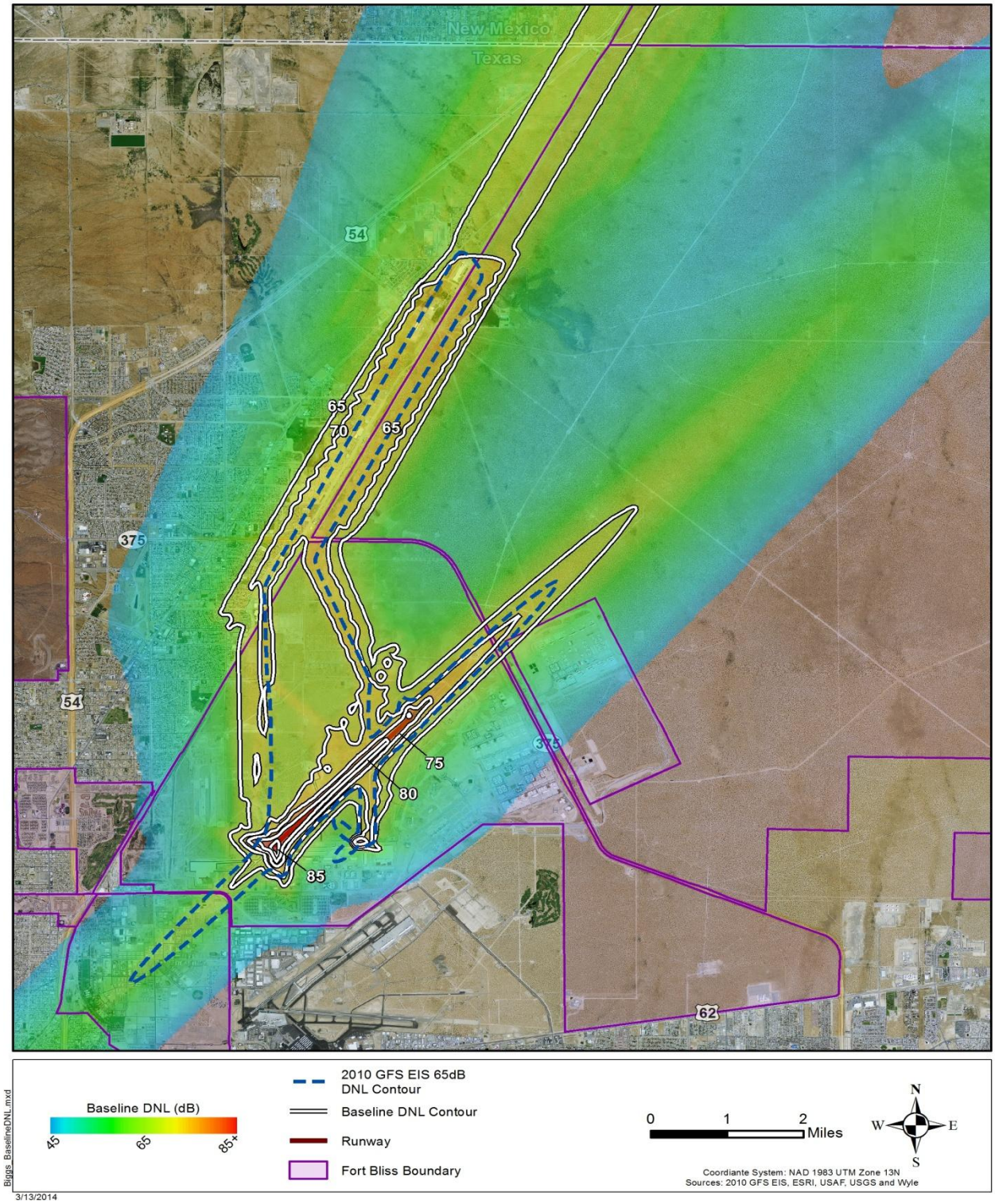

Figure 4-1. Baseline Noise Exposure DNL Noise Contour at BAAF. (Source: 2010 GFS EIS)

Table 4-2a. Annual Proposed Joint Exercise Operations.

Aircraft Type	Modeled-As	Percent Utilization	MIL Departure			AB Departure			Fixed-wing Touch and Go (1)		
			Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total
A-10	A-10A	30%	144	-	144	-	-	-	144	-	144
F-15E	F-15E	10%	-	-	-	48	-	48	48	-	48
F-16	F-16C	50%	-	-	-	240	-	240	240	-	240
F-18	F-18E/F	10%	-	-	-	48	-	48	48	-	48
TOTAL			**144**	**-**	**144**	**336**	**-**	**336**	**480**	**-**	**480**

Table 4-2b. Annual Proposed Joint Exercise Operations – *concluded.*

Aircraft Type	Modeled-As	Percent Utilization	Straight-in Arrival			Break Arrival			Total		
			Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total
A-10	A-10A	30%	29	-	29	115	-	115	576	-	576
F-15E	F-15E	10%	10	-	10	38	-	38	192	-	192
F-16	F-16C	50%	48	-	48	192	-	192	960	-	960
F-18	F-18E/F	10%	10	-	10	38	-	38	192	-	192
TOTAL			**96**	**-**	**96**	**384**	**-**	**384**	**1,920**	**-**	**1,920**

Note:

1) each circuit counted as 2 operations

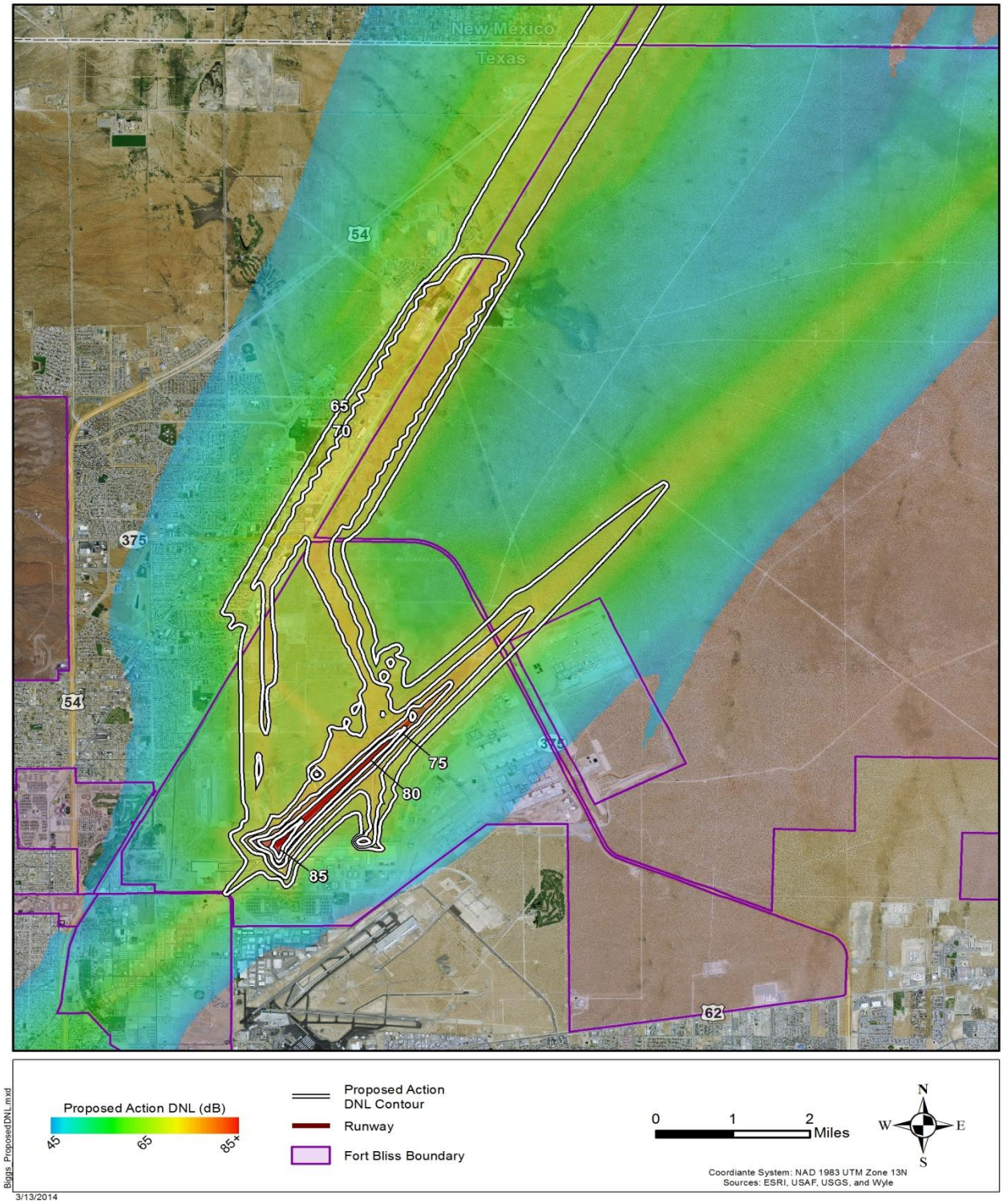

Figure 4-2. Proposed Action Noise Exposure DNL Noise Contour at BAAF

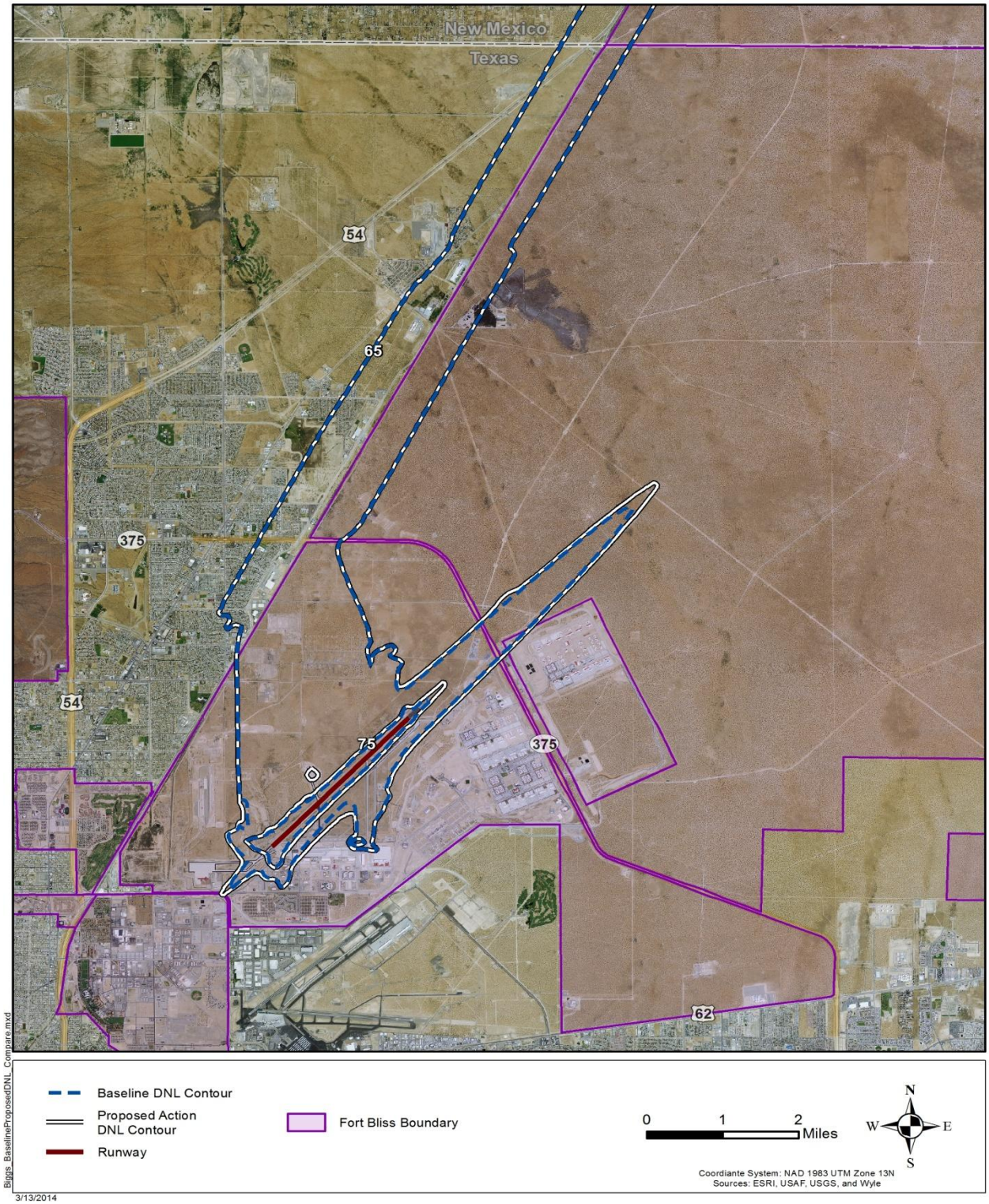

Figure 4-3. Baseline DNL Contour with Proposed Action DNL Contour Comparison

The proposed joint exercises would occur up to six times annually for 1-2 weeks in duration. During this surge of airfield activity, noise levels would be elevated. The Exercise Day DNL noise contours are shown for illustrative purposes in Figure 4-3. The Exercise Day DNL contours are not for land use planning purpose.

Noise analyses are included for each type of aircraft to be used in this proposed action with aircraft afterburner capable using it when taking off on Runway 21.

4.2.2 Airspace Operations

The airspace around El Paso and Fort Bliss is designated by the FAA as controlled airspace around the El Paso International Airport and Biggs AAF. The controlled airspace is designed to provide aircraft separation for approach, landing, and takeoff from the two major airports in the El Paso area – Biggs AAF and the El Paso International Airport (EPIA). The Class C and E airspace around the EPIA makes up most of the controlled airspace pattern over El Paso, and the Special Use Area (SUA) Restricted Areas over the Fort Bliss training ranges the airspace north of El Paso. The Restricted Areas on the FBTC are restricted to military aircraft flights only. Between the El Paso International Airport Class C and E airspace and the Fort Bliss Restricted Areas, there is a segment of airspace that is designated as Class G, or uncontrolled, airspace below 1,200 feet AGL, with non-designated Class E airspace above that. Within the Class G airspace and the non-designated Class E airspace, any aircraft can fly at any altitude from the surface up to 18,000 feet MSL without contact with Air Traffic Control (ATC) at El Paso International Airport or at Biggs AAF. Within this Class E and G airspace area, most of which is over Fort Bliss property, the number of private and commercial aircraft operating is estimated at approximately 50 aircraft per week, mostly at altitudes of between 6,500ft and 8,500ft MSL (U.S. Army 2012). This does not include the hundreds of commercial aircraft departures from the EPIA each week that immediately climb to altitudes higher than 6500ft MSL. Air Force fighters would generally fly at 6,500ft MSL or below within this area, which would provide a degree of physical separation.

Helicopters leaving (northerly heading) and arriving (southerly heading) at Biggs AAF generally approach at altitudes below 1,200ft AGL within the two (2) nm of Biggs AAF where jet fighters would perform braking patterns. This is also within the controlled airspace of Biggs AAF and the EPIA. Besides having a degree of separation between the two types of aircraft, the ATC controllers would provide control coordination and management of the Class C and E airspace around the two airports. The addition of 480 flights per year or an average of forty (40) per week during the six two-week JTO exercises would not constitute a substantial increase in operational flight operations. During the analyses for the BRAC mandated stationing of additional units at Fort Bliss, an analysis was conducted of stationing two CABs at Fort Bliss. However, only one CAB has been stationed at Fort Bliss. The analysis in the EIS indicated that both the EPIA and the Biggs AAF have the capacity to address increases in air traffic far higher than what would result if the proposed action is implemented (U.S. Army 2007).

4.2.3 Safety

This action alternative has the potential to directly affect safety due to the use of ordnance although this ordnance would be non-explosive. There is a minimal chance of accidental discharge of the TP ammunition and occurrence of hung bombs on the aircraft. According to the US Air Force Safety Center at Kirtland AFB, NM, since 1960 (as far back as the database goes) there have been ZERO (0) reported incidents of an accidental gun discharge on the ground. So

too, ricochet hazard risks to overflying aircraft are considered to be very low to non-existent. Nevertheless, Fort Bliss would generate a Ricochet Safety Assessment Plan and review and update it annually. This plan would be kept on file at Biggs AAF and be available for review by the Federal Aviation Administration at any time.

A hung bomb is one where the release of the bomb fails and it remains hanging on the aircraft by at least one of the release mechanisms. Although the risk is very low, the hung bomb consequently has the potential to release during flight while the aircraft is returning to base. There are several mitigative factors that would occur if a weapon becomes jammed or a BDU concrete bomb fails to deploy. These factors include:

a. Aircraft would return to BAAF over Fort Bliss training lands so as not to overfly any portions of El Paso or any other town between the ranges and BAAF.

b. Aircraft would use Runway 21 only and not Runway 3 which could force overflies of populated areas of El Paso.

c. If winds preclude landing at Biggs AAF, aircraft would divert to Holloman AFB.

d. Situation dependent, aircraft would either stop and shut down on the runway with the aircraft pointed on an approximate 030 degree heading or, if able and deemed safe by the pilot and ground crew, exit the runway at Taxiway H and taxi back to the Hot Cargo Ramp (Figure 3-1) to be de-armed by crew members with the aircraft aligned in front of the HESCO barriers (Appendix B, Figure B-3).

Outside of the "hung ordnance" procedures listed above, during times when the wind is from the northeast, the intensity of the tail wind may force the fighters to conduct similar approaches over populated areas. The direction and intensity of wind would determine when it is safe to take-off and land at Biggs AAF based on Army, Air Force, and aircraft-specific regulations. Any discrepancies from the standard would trigger the consideration of diverting the aircraft to Holloman AFB by Biggs AAF controllers.

5.0 CUMULATIVE EFFECTS

Indirect impacts are those removed in time or distance but still reasonably foreseeable as a result of implementing this alternative. Indirect effects of this alternative are addressed above, and are not expected to be significant. The proposed action is limited in both scope and area of effect. Cumulative effects are those that result from the incremental impacts of the proposed project when added to past, present, and reasonably foreseeable future actions of the agency or other entities or persons that have activities in the area. Other actions in the ROI could contribute to cumulative impacts in combination with this alternative. In particular, these activities include ground disturbance resulting from construction of ranges and other mission support facilities. However, construction of mission support facilities in this area was anticipated and analyzed in the SEIS and the GFS EIS referenced in section 1.0 of this document.

Cumulative effects of this action are limited to those that add jet aircraft noise to the ambient noise already present occurring from local sources, local road and train traffic, helicopter and other aviation noise generated at Biggs AAF, and commercial aviation noise from the EPIA.

Noise modeling conducted by the Air Force's NEPA Center for Excellence cumulatively adds noise levels that would result from the proposed action to ambient (existing) noise levels in the affected area. As discussed in section 4.2.1 of this document, noise levels from the proposed action, when added to the ambient environment and mapped as contours overlying maps of El Paso, indicate cumulative noise levels would not adversely affect existing land uses surrounding the Fort Bliss installation.

6.0 REFERENCES

Bureau of Transportation (BOT). 2014. Statistics. Web site of airport statistics for EPIA at: http://www.transtats.bts.gov/airports.asp?pn=1&Airport=ELP&Airport_Name=El%20Paso,%20TX:%20El%20Paso%20International&carrier=FACTS

Federal Interagency Committee on Noise (FICON), 1992. *Federal Agency Review of Selected Airport Noise Analysis Issues.* Available at www.fican.org/findings.html

Serna, Ruben M. 2014. Command Weapons Safety Manager, HQ AETC/SEW, Luke Air Force Base, AZ. Personal communication with Maj Keith Carson.

U.S. Air Force. 2011. Air Force Manual 91-201, *Safety - Explosive Safety Standards*. Para. 12.47. 21 January.

U.S. Air Force. 1999. Air Force Handbook 32-7084, *AICUZ Program Manager's Guide*. 1 Mar.

U.S. Air Force. 2012. Air Force Instruction 13-113, Volume 1, *Tactical Air Control Party (TACP) Training Program*. 14 June.

U.S. Army Environmental Command. (2007). *NEPA Analysis Guidance Manual*. May

U.S. Army. 2007. *Fort Bliss, Texas and New Mexico, Mission and Master Plan Supplemental Programmatic Environmental Impact Statement*. April.

U.S. Army. 2010. *Fort Bliss Army Growth and Force Structure Realignment Environmental Impact Statement*. March.

U.S. Army. 2013. Pamphlet 385-64, *Safety – Ammunition and Explosives Safety Standards*. 10 October.

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APPENDIX A

JTO MOA

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MEMORANDUM OF AGREEMENT

BETWEEN THE

U.S. ARMY, DEPUTY CHIEF OF STAFF, G-3/5/7

AND THE

U.S. AIR FORCE, DEPUTY CHIEF OF STAFF, AIR AND SPACE OPERATIONS

AND1HE

UNITED STATES SPECIAL OPERATIONS COMMAND, DIRECTOR,
OPERATIONS SUPPORT GROUP

FOR

JOINT FIRES OBSERVER

14 November 2005

Joint Fires Observer Memorandum of Agreement

Purpose: This Memorandum of Agreement (MOA) formalizes the Joint Requirements Oversight Council (JROC)-chartered Joint Close Air Support (JCAS) Executive Steering Committee's (ESC) 2005 JCAS Action Plan[1] Issue 16. This recommendation is to provide training to Forward Observers (FOs), Reconnaissance Marines, and Special Operations Forces to better prepare them to execute Terminal Guidance Operations (TGO), and provide targeting information for JP 3-09.3 defined Type 2 and Type 3 close air support (CAS) terminal attack control. Trained Service members will be jointly known as a Joint Fires Observer (JFO). A Joint Fires Observer is a trained Service member who can request, adjust, and control surface-to-surface fires, provide targeting information in support of Type 2 and 3 close air support terminal attack controls, and perform autonomous terminal guidance operations. Signatory Services will input changes to include JFO definition as appropriate during revisions to JP 1-02, JP 3-09, JP 3-09.3, and to applicable Service publications.

Background: Joint Terminal Attack Controllers (JTACs) cannot be in a position to see every target on the battlefield. Trained JFOs, in conjunction with JTACs, will assist maneuver commanders with the timely planning, synchronization, and responsive execution of all joint fires and effects. Additionally, since not all termina1guidance operations (TGO) missions are CAS, we can increase our capability to conduct TGO missions by training JFOs on JLASER (JP 3-09.1) Tactics, Techniques, and Procedures (TTP) and communication procedures with aircrew. Autonomous TGO independent of CAS requires the JFO to have direct or indirect communications with the individual commanding the delivery system plus command and control connectivity with the JFO's maneuver commander, and / or appropriate weapons release authority. While any personnel may be required to perform non-qualified JTAC control procedures in the CAS mission area, JFOs are better trained and prepared to execute these "In Extremis" procedures. The intent of a JFO is to add joint warfighting capability, not to circumvent the need for qualified JTACs. JFOs provide the capability to exploit those opportunities that exist in the joint battle space where a trained observer could be used to efficiently support air delivered fires that are not JCAS, deliver surface-to-surface fires, and facilitate targeting for the JTAC in situations that are JCAS.

This JFO initiative is founded on the 2005 JCAS Action Plan. The following four actions are designed to standardize training of JFOs throughout the Services: 1) Standardize the title and develop a joint definition for the position, 2) Develop a joint individual standard and syllabus, 3) Develop Joint TIPs and update Service manuals as appropriate, and 4) Establish a minimum equipment capability standard for the position. Completion of these actions will improve joint force capabilities and reduce the potential for mishaps resulting in fratricide and unacceptable collateral damage.

Scope: This MOA establishes a JFO Joint Mission Task List (JMTL) for Services to develop initial and continuation JFO training programs. JP 3-09.3 refers to an "observer," other than a JTAC, who may be in a position to "see" a target and provide "real time targeting information" for Type 2 or 3 CAS terminal attack control. The MOA

serves as the vehicle to increase the capability of these "observers" in the application of joint fires and effects. The training program emphasizes joint collaboration and the need for JFOs and JTACs to train together as resources allow.

Responsibilities: Services with JFO training programs will ensure those programs are in compliance with this MOA.

1. JFO Certification and Qualification Process: Services will develop minimum level course entry requirements.

2. Grandfathered JFO: All previous USAF Air Ground Operations School (6th Combat Training Squadron) and USA Field Artillery School JFO Course graduates are "grandfathered" as JFOs.

3. JFO Training Definitions:

- Certified - Individuals who satisfactorily complete the appropriate Service academic and practical training requirements of a core JFO training curriculum, and complete a comprehensive evaluation.
- Qualified - A certified JFO who has maintained currency by achieving the established minimum recurring training and evaluation requirements.
- Control - Consists of at least one aircraft attacking a surface target. The control begins with a CAS briefing (the 9-line is the JP 3-09.3 standard) from a JTAC and ends with either an actual/simulated weapons release or an abort on a final attack run. No more than two controls can be counted per CAS briefing per target (reference JTAC MOA).
-Live- Real aircraft used in a training environment. Live does not indicate ordnance expenditure. Adheres to the guidelines of DoD 5000.59-M of a simulation involving real people operating real systems.
-Simulated or Simulation- Computer-based system used in a training environment involving real people operating simulated systems. Adheres to the guidelines of DoD 5000.59-M of virtual simulations inject human-in-the-loop in a central role by exercising motor control skills (e.g., flying an airplane), decision skills (e.g., committing fire control resources to action), or communication skills (e.g., as members of a C41 team).
-- Services will designate their suitable system.

4. JFO Certification Process: Services will develop certification programs in compliance with the JMTLs in this MOA. Certification requirements will be performed under the supervision of a commander designated qualified trainer.

5. JFO Qualification (Currency) Process: Once certified, a JFO will retain qualification provided currency is maintained and all recurring evaluation requirements are accomplished. Semi-annual currency requirements waiver authority is the first 0-6 in the JFO's chain of command. Waivers will be documented and maintained in the JFO's training jacket/folder. Ordnance expenditure is preferred in all events but not required. Currency requirements:

A. Semi-annual:

1) Perform as a JFO the following six fixed or rotary wing events.

a) Perform two live or simulated laser guided weapon system TGO events.

b) Perform as a JFO in support of one live fixed wing CAS control. This control begins with the JFO acquiring the target and providing targeting data to the JTAC for a Type 2 or 3 CAS terminal attack control for the JTAC to control. If live control is not possible/feasible, event may be accomplished via simulation if approved by waiver authority per paragraph 5.

c) Perform as a JFO during one live night target marking event using marking devices (i.e. Laser, IR Pointer). Conduct at night beyond End of Evening Nautical Twilight (BENT) and prior to Begin Morning Nautical Twilight (BMNT). Laser events in conjunction with TGO (para 5. A.1) a) and support of CAS controls (para 5. A.1) b) credits this requirement if conducted between EENT and BMNT.

·d) Perform one simulated terminal attack control as non-qualified JTAC individual utilizing Multi-Service Procedures for the Joint Application of Firepower (JFIRE). Supervision by a qualified JTAC is preferred but not required.

e) Perform one live or simulated abort. May be accomplished in conjunction with other semi-annual events.

2) Perform six live or simulated surface-to-surface or naval surface call for fire events.

3) Perform one live or simulated AC-130 call for fire.

B. Evaluation Requirements: Recurring evaluation requirements will be determined by respective Services, not to exceed 18 months. JFOs lose their qualification if evaluation period lapses or if they fail the evaluation. JFOs will adhere to "Requalification Process" paragraph until successful evaluation. Services will develop evaluation programs in compliance with the JMTLs in this MOA.

C. Requalification Process: A JFO that fails to comply with currency requirements loses qualification. To regain qualification, a JFO must complete the number and category (e.g. laser events, controls, surface-to-surface calls for fire, and/or AC-130 calls for fire) of currency requirements in paragraph 5. A. that they failed to accomplish in the previous six months under supervision of a commander designated qualified trainer. A JFO who is unqualified for 24 consecutive months must regain qualification by completing a Service/USSOCOM approved refresher syllabus including a minimum of the semi-annual requirements under supervision of a commander designated qualified trainer. Upon successful completion of a comprehensive evaluation, the individual will be requalified as a JFO.

D. Deployment Process: JFOs are expected to deploy fully qualified. JFOs who deployed fully qualified do not have to maintain currency while deployed in support of combat/contingency operations. Units will continue to document training and combat events. Upon return to home station, resume normal training on the individual's first duty day after deployment. All deployed JFOs who do not maintain currency

requirements are considered unqualified upon completion of the deployment and must requalify IAW this MOA.

E. JFO Evaluation Folder (Training Jacket). To properly document JFO certification and qualification (currency) standards, an individual JFO evaluation folder (training jacket) will be initiated by the appropriate JFO schoolhouse and maintained by the individual's assigned command. Document may be electronically based if all required information is readily available. The training jacket will accompany the individual to each duty assignment to provide the commander that individual's certification and qualification status to conduct JFO duties, and to maintain appropriate records (currency) within the training jacket.

This evaluation folder (training jacket) will contain a 4-part documentation system. This is mandatory for all JFOs. Required information:

Part I: COMMANDERS DESIGNATION LETTER
Section contains a copy of the JFO current designation letter and a copy of any previous designation letters, if applicable.

Part II: DOCUMENTATION OF TRAINING
Section contains a record of all training events in a legible format and must be in compliance with this document's currency requirements. This section should contain records of all required JFO MOA training performed since initial certification.

Part III: DOCUMENTATION OF EVALUATIONS
Section contains documentation of all evaluations conducted since initial certification.

Part IV: JFO FORMAL SCHOOL DIPLOMAS
Section contains copies of any certificates received from attending a formal JFO course.

JFO JMTL. The following Joint Mission Tasks have been identified for a JFO and will be instrumental in developing schoolhouse academic training syllabus/programs of instruction (POI) for JFO certification and unit appraisal to maintain JFO qualification. The Joint Mission Tasks are divided into duty areas for academic application and are listed by task and associated sub-tasks.

Duty Area 01.

Engage Targets with Ground Surface-to-Surface Fires

01.1 Conduct adjust fire missions
01.2 Conduct fire for effect missions
01.3 Conduct special missions
01.4 Conduct suppression of enemy air defenses

Duty Area 02.

Engage Targets with Naval Surface Fires

02.1 Conduct adjust fire missions
02.2 Conduct fire for effect missions
02.3 Conduct special missions
02.4 Conduct suppression of enemy air defenses

Duty Area 03.

Engage Targets with Air to Ground Fires

Provide timely and accurate targeting data to a JTAC for Type 2 and 3 CAS terminal attack control
Assess basic effects of weather, terrain, and threat air defenses on CAS assets and advise JTAC
03.3 Apply the principles of CAS weapons effects
03.4 Coordinate and direct close combat attack or support CAS terminal attack control with attack helicopters
03.5 Conduct an AC-130 call for fire
03.6 Conduct terminal attack control as a non-qualified JTAC.
03.7 Determine requirement and transmit timely ABORT commands to controlling JTAC or aircraft

Duty Area 04.

Terminal Guidance Operations

04.1 Provide visual, voice or electronic targeting data for terminal guidance operations
04.2 Conduct laser guided weapon system terminal guidance

Syllabus and Programs of Instruction (POI). Service schoolhouses will develop their individual syllabi/POL Specifically, the USAF Joint Air Ground Operations Group (JAGOG) will develop their syllabus in coordination with the USA Field Artillery School (USAFAS) via the Army Joint Support Team-Nellis (AJST-N). USAFAS will develop their POI in coordination with JAGOG. Once syllabi/POI is approved by respective Major Commands, changes will be coordinated between JAGOG and USAFAS at the 0-6level before receiving respective Major Command's approval.

Service Schoolhouses. Services signing this JFO MOA may create training facilities as desired. Since only JAGOG and USAFAS are currently training JFOs, there is no need for joint standardization enforcement. ServiCes signing the JFO MOA may create schoolhouses as desired, but must coordinate their JFO course of instruction with participating Services. Participating Services will determine standardization

requirements if additional JFO schools are opened during annual reviews and take to the JCAS ESC recommendation for joint standardization enforcement.

Waiver Authority. Waiver authority not specifically addressed in this MOA is the respective Major Command G-3, DO, J-3, or their designated representative.

Effective Date, Review, and Termination: This MOA will be effective 1 November 2005. It will be reviewed annually and updated as required. Review will be initiated sequentially between the Department of the Army (first review after signing), Headquarters United States Air Force (second review), and Headquarters United States Special Operations Command (third review). In the event more than two years passes without review, any signatory may initiate a review. Termination will occur on incorporation in a joint instruction or directive.

17 Oct 05

JAMES J. LOVELACE
Lieutenant General, USA
Deputy Chief of Staff, G-3/517

NORMAN R. SEIP,
Major General, USAF
HQ USAF Acting Deputy Chief of Staff,
Air and Space Operations

JOSEPH D. KERNAN
Rear Admiral, USN
Director, Operations Support Group

APPENDIX B

EXPLANATORY FIGURES REFERRED TO IN TEXT

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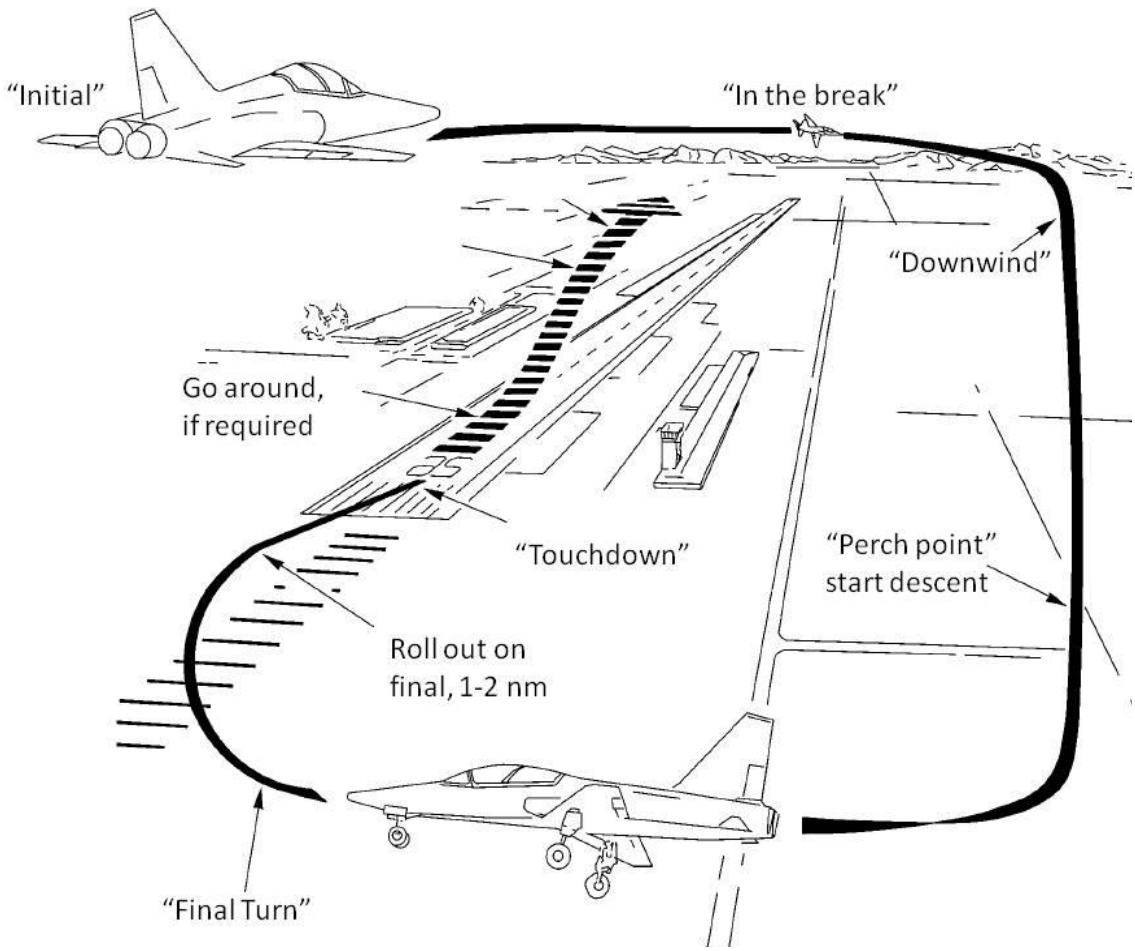

Figure B-1. Typical "Overhead" Flight Path for landings at Biggs AAF or if additional patterns are required.

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Figure B-2. Area at Biggs AAF to be used for the installation of HESCO barriers.

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APPENDIX C

AIRCRAFT AND FLIGHT FREQUENCY DATA USED FOR NOISE MODELING

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Table C-1. 2014 Revalidated Baseline Biggs AAF Annual Operations.

Aircraft Category	Aircraft Type	Aircraft	Annual Flying Days	Annual Operations								
				Departures			Arrivals			Grand Totals		
				Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total	Day (0700-2200)	Night (2200-0700)	Total
Based	Prop	C-12	250	2,105	-	2,105	2,105	-	2,105	4,210	-	4,210
		DHC-7	250	1,431	612	2,043	1,431	612	2,043	2,862	1,224	4,086
	Helo	AH64	250	6,572	1,814	8,386	6,572	1,814	8,386	13,144	3,628	16,772
		CH47D	250	2,128	689	2,817	2,128	689	2,817	4,256	1,378	5,634
		UH60A	250	6,205	2,067	8,272	6,205	2,067	8,272	12,410	4,134	16,544
Transient	Jet: Fighter	A-3	365	21	-	21	21	-	21	42	-	42
		A-10A	365	21	-	21	21	-	21	42	-	42
		F-16A	365	10	-	10	10	-	10	20	-	20
		F-16C	365	21	-	21	21	-	21	42	-	42
		F-18A/C	365	311	-	311	311	-	311	622	-	622
		T-37B	365	62	-	62	62	-	62	124	-	124
		T-38A	365	456	-	456	456	-	456	912	-	912
	Jet: Other	C-17	365	83	-	83	83	-	83	166	-	166
		C-21A	365	52	-	52	52	-	52	104	-	104
		C-5A	365	21	-	21	21	-	21	42	-	42
		C-9A	365	259	-	259	259	-	259	518	-	518
		KC-135R	365	31	10	41	31	10	41	62	20	82
	Prop	C-130H&N&P	365	809	-	809	809	-	809	1,618	-	1,618
	Helo	AH-1G	365	446	-	446	446	-	446	892	-	892
		ASTAR SA350D	365	21	-	21	21	-	21	42	-	42
		CH-46E	365	674	-	674	674	-	674	1,348	-	1,348
		DAUPHIN SA365N	365	41	10	51	41	10	51	82	20	102
		OH58D	365	21	-	21	21	-	21	42	-	42
		SK61 (CH-3A)	365	207	-	207	207	-	207	414	-	414
		SK65 (CH-53)	365	156	-	156	156	-	156	312	-	312
		UH-1N	365	1,846	-	1,846	1,846	-	1,846	3,692	-	3,692
Air Carrier / GA	Jet: Other	B-727-2QN9 (Q)	365	-	5	5	-	5	5	-	10	10
		B-737-D9 (N)	365	-	49	49	-	49	49	-	98	98
		B-747-SP (N)	365	-	44	44	-	44	44	-	88	88
		B-757-200-RR	365	-	20	20	-	20	20	-	40	40
		B-767-JT9	365	-	29	29	-	29	29	-	58	58
		CESSNA-500	365	186	-	186	186	-	186	372	-	372
		DC-10-40	365	34	-	34	34	-	34	68	-	68
		DC-9-50D17 (Q)	365	15	-	15	15	-	15	30	-	30
		L-1011	365	24	-	24	24	-	24	48	-	48
		LEARJET-35	365	108	-	108	108	-	108	216	-	216
	Prop	COMPOS 1985 PISTON	365	98	-	98	98	-	98	196	-	196
Grand Totals				24,475	5,349	29,824	24,475	5,349	29,824	48,950	10,698	59,648
Day % / Night %				82%	18%	100%	82%	18%	100%	82%	18%	100%

Table C-2. Population Noise Exposure

-excludes all on-post population (as indicated by the census block data)

-counts based on contours that have been clipped to the map extents

-counts based on 2010 Census Blocks

DNL	*Baseline*	*Proposed Action*	*Exercise Day*
65-70	4,297	4,297	4,295
70-75	3,233	3,233	3,238
75-80	0	0	0
80-85	0	0	0
85+	0	0	0

Table C-3. Contour Acreage

-acreage based on contours that have been clipped to the map extents

Baseline Contour Acreage

DNL	*On-Post*	*Off-Post*	*Total*
65-70	5,199.7	2,044.6	7,244.3
70-75	2,387.1	1,371.9	3,758.9
75-80	294.4	0.0	294.4
80-85	120.3	0.0	120.3
85+	0.0	0.0	0.0

Table C-4. Proposed Action Contour Acreage

DNL	*On-Post*	*Off-Post*	*Total*
65-70	5,315.7	2,045.1	7,360.8
70-75	2,510.2	1,373.8	3,884.0
75-80	332.6	0.0	332.6
80-85	194.2	0.0	194.2
85+	33.0	0.0	33.0

Table C-5. Exercise Day Contour Acreage

DNL	*On-Post*	*Off-Post*	*Total*
65-70	6,177.0	2,047.6	8,224.6
70-75	2,754.0	1,378.4	4,132.5
75-80	477.6	0.0	477.6
80-85	259.1	0.0	259.1
85+	137.5	0.0	137.5

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APPENDIX D
AIR QUALITY CONFORMITY DETERMINATION

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AIR CONFORMITY APPLICABILITY MODEL REPORT
RECORD OF CONFORMITY ANALYSIS (ROCA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:
Base: Biggs AAF/Fort Bliss
County(s): El Paso
Regulatory Area(s): El Paso, TX; El Paso Co, TX

b. Action Title: Fighter Aircraft Use of Biggs Army Airfield for Joint Forces Training on Fort Bliss, Texas and New Mexico

c. Project Number/s (if applicable):

d. Projected Action Start Date: 5 / 2014

e. Action Description:

Under the proposed action, Air Force fighter aircraft with inert training munitions would operate out of Biggs AAF to support certain joint training exercises. Aircraft types would include F-15, F-16, A-10 and F-18 fighter jets along with the required crew members. Some of these aircraft are afterburner capable and would use this capability during take-offs. There would be five flying days per week and joint training would not be expected during the weekends. All operations would occur between seven (7) o'clock in the morning and ten (10) o'clock in the evening. Most of the take-offs and some of the landings would occur over Fort Bliss lands to the northeast of Biggs AAF primarily using the runway designated as Runway 03 for take-offs and Runway 21 for landings. This runway configuration (taking-off directly to the northeast and landing to the southwest) would make the presence of the fighter aircraft essentially imperceptible to most of the El Paso public, and provide a safety measure for aircraft that have inert ordnance onboard. On occasion, about five (5) percent of the time, during very windy days when the winds are from the northeast (which would induce an unsafe tail-wind for landing), aircraft would maneuver to the west of BAAF staying within the Fort Bliss boundaries, but at times briefly overflying a portion of the City of El Paso and approach Biggs AAF from the southwest using Runway 03 (Figures 3-1 and 3-4). Aircraft required to do so would normally be one (1) mile, but no further than approximately two (2) miles, from the airfield. Regardless of the runway in use, aircraft would plan to fly only one approach and landing per sortie although an extra pattern may be required at maximum rate of 0.5 per sortie or every other landing at Biggs. The fighter aircraft would conduct overhead pattern operations approximately eighty percent (80%) of the time and straight-in approaches approximately twenty percent (20%) of the time.

f. Point of Contact:

Name: Phi Dang
Title: Ctr/Air Quality SME
Organization: Wyle-AFCEC/CZN
Email: phi.dang.ctr@us.af.mil
Phone Number: 210-572-9188

2. Analysis: Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions. General Conformity under the Clean Air Act, Section 1.76 has been evaluated for the action described above according to the requirements of 40 CFR 93, Subpart B.

Based on the analysis, the requirements of this rule are: _____ applicable