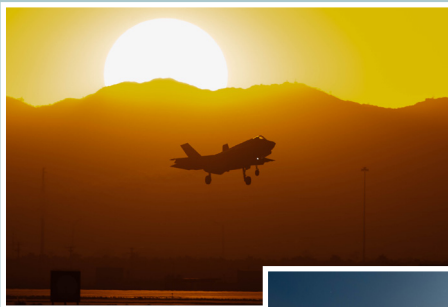




# Environmental Impact Statement

## Regional Special Use Airspace Optimization to Support Air Force Missions in Arizona



**Executive Summary**  
**August 2024**

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**DRAFT  
EXECUTIVE SUMMARY**

**ENVIRONMENTAL IMPACT STATEMENT  
REGIONAL SPECIAL USE AIRSPACE OPTIMIZATION  
TO SUPPORT AIR FORCE MISSIONS IN ARIZONA**

**August 2024**

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**Cover Sheet**  
**DRAFT EXECUTIVE SUMMARY FOR**  
**ENVIRONMENTAL IMPACT STATEMENT**  
**REGIONAL SPECIAL USE AIRSPACE OPTIMIZATION**  
**TO SUPPORT AIR FORCE MISSIONS IN ARIZONA**

- a. *Responsible and Cooperating Agencies:* United States Department of the Air Force (DAF) (Responsible Agency); the Federal Aviation Administration (FAA), National Park Service, United States Forest Service, and Arizona Game and Fish Department are Cooperating Agencies.
- b. *Title of Action:* Regional Special Use Airspace Optimization to Support Air Force Missions in Arizona
- c. *Comments and Inquiries:* Ms. Grace Keesling, AFCEC/CIE at (210) 925-4534
- d. *Designation:* Draft Environmental Impact Statement (EIS)
- e. *Abstract:* This Draft EIS has been prepared in accordance with the National Environmental Policy Act (NEPA). The public and agency scoping process resulted in the analysis of the following environmental resources: airspace management and use; safety; noise; air quality; natural resources; land management and recreation; socioeconomic; environmental justice; cultural resources; hazardous materials; and visual effects. The DAF proposes to alleviate training shortfalls and address evolving training needs for aircrews stationed at Davis-Monthan Air Force Base, Luke Air Force Base, and Morris Air National Guard Base in Arizona by requesting that the FAA implement modifications to existing DAF-managed training airspace. The Proposed Action includes changing the published times of use for training airspace; adjusting the horizontal dimensions of some airspace; lowering the floor of some airspace to allow for low-altitude training; and adjusting the attributes to allow for supersonic speed at lower altitude, use of chaff, and lowering the release altitude for flares. This Draft EIS analysis was started prior to the decision to retire A-10 aircraft, which was enabled by adoption of the Fiscal Year 2023 Presidential Budget and passing of the 2024 National Defense Authorization Act. Thus, this Draft EIS includes A-10 operations.
- f. *Comments:* The DAF released this Draft EIS to the public and agencies for review and comment. A Notice of Availability was published in the Federal Register, newspaper advertisements were published, press releases were announced, notifications were distributed to individuals on the mailing list, and letters accompanied the direct mailing of this Draft EIS document. This Draft EIS has been posted on a publicly accessible website at [www.arizonaregionalairspaceeis.com](http://www.arizonaregionalairspaceeis.com). Copies of this Draft EIS document were also sent to local document repositories.  
  
The Draft EIS public comment period must be a minimum of 45 days beginning on the Notice of Availability publication date. All substantive comments received prior to the close of the public comment period will be considered during preparation of the Final EIS. The DAF responds to substantive comments on a Draft EIS in the Final EIS, consistent with 40 Code of Federal Regulations Section 1503.4. Substantive comments are regarded as those comments that challenge the analysis, methodologies, or information in the Draft EIS as being factually inaccurate or analytically inadequate; identify impacts not analyzed or identify reasonable alternatives or feasible mitigations not considered by the agency; or offer specific information that may have a bearing on the decision such as differences in interpretations of significance, scientific data, or technical conclusions. Non-substantive comments, which do not require a DAF response, are generally considered those comments that express a conclusion, an opinion, or a vote for or against the proposal itself, or some aspect of it; state a position for or against a particular alternative; or otherwise state a personal preference or opinion.
- g. *Time Extension:* DAF's Senior Agency Official responsible for NEPA execution has approved a timeline extension beyond the 2 years stipulated in 40 Code of Federal Regulations Section 1501.10 for completion of this EIS and Record of Decision.

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## **EXECUTIVE SUMMARY**

The Department of the Air Force (DAF) has prepared an Environmental Impact Statement (EIS) that analyzes the potential environmental consequences resulting from the DAF proposal to alleviate training shortfalls and address evolving training needs for aircrews stationed at Davis-Monthan Air Force Base (AFB), Luke AFB, and Morris Air National Guard Base (ANGB) in Arizona by requesting that the Federal Aviation Administration (FAA) implement modifications to existing DAF-managed Military Operations Areas (MOAs), which are a type of Special Use Airspace (SUA), and associated Air Traffic Control Assigned Airspace (ATCAA) (**Figure ES-1**). The bases in Arizona share a primary mission to train and deploy combat-ready pilots for the Air Force, Air National Guard (ANG), and Air Force Reserves, thus the DAF-managed MOAs in this region must support training for a variety of aircraft and missions. Much of the DAF-managed MOAs available to aircrews in this region were first charted decades ago and minimal improvements have been made over time in response to changes to the DAF aircraft inventory, new training requirements, or expanded missions. Thus, there is a need to optimize existing MOAs and ATCAAs by modifying the published times of use, volume, minimum altitude for supersonic flight, use of chaff, and lowering the release altitude for flares to ensure availability of appropriate airspace to accomplish essential training requirements for aircrews stationed in Arizona.

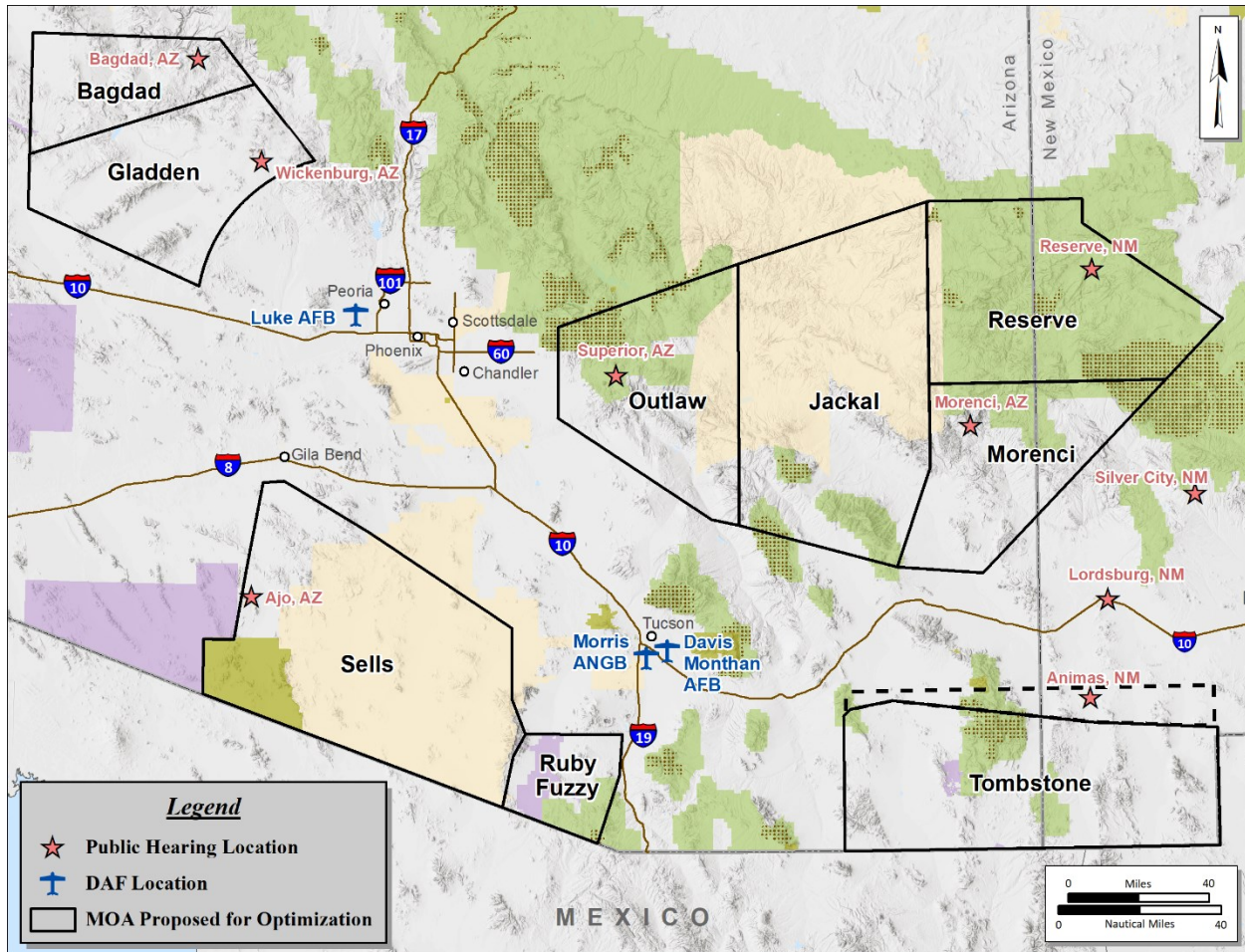
The EIS was prepared by the DAF in cooperation with the FAA, the National Park Service, the United States (U.S.) Forest Service, and the Arizona Game and Fish Department. The document has been prepared in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA, the Air Force Environmental Impact Analysis Process promulgated at 32 Code of Federal Regulations (CFR) Part 989, and FAA Order 1050.1F, Environmental Impacts: Policies and Procedures.

### **ES.1 Purpose and Need for the Proposed Action**

The purpose of the Proposed Action is to optimize existing DAF-managed MOAs to address the existing and future training deficiencies of aircrews stationed at Davis-Monthan AFB, Luke AFB, and Morris ANGB due to insufficient airspace.

The need for the Proposed Action is driven by two primary factors: the need for aircrews to be able to conduct flight training near their home base, and the need to conduct required training to ensure readiness and increase survivability. As currently configured, there is not enough airspace that provides the appropriate low-level altitudes, terrain variety, and attributes (ability to fly supersonic at lower altitude and use of chaff and flares) to support required training.

With advancements in missile, radar, and aircraft technology by our potential adversaries in the world, the U.S. military needs to conduct more low-level flight training and lower supersonic flight training in order to survive modern combat. The current insufficient amounts and parameters of low-altitude airspace to support the Arizona bases results in inadequate training. In a typical training scenario, the aircrew needs to simulate the launch of a missile and a rapid descent to very low levels for terrain masking or an escape at supersonic speed as they would in a real-world mission but cannot do so in many of the MOAs with their current configuration.



**Legend:** AFB = Air Force Base; ANG = Air National Guard; ANGB = Air National Guard Base; DAF = Department of Air Force; MOA = Military Operations Area.

**Figure ES-1 DAF-Managed MOAs Proposed for Optimization**

## ES.2 Alternatives Considered

Alternatives were selected for analysis based on the following selection standards:

- Optimize DAF-managed MOAs accessible to bases in Arizona. DAF aircrews cannot rely on the availability of another service’s airspace to accomplish daily requirements.
- Optimize airspace within a reasonable distance from the bases. Flying long distances to remote or out-of-state training airspace and returning to the home bases in Arizona would substantially limit valuable training time and increase fuel consumption and cost. The aircraft need to fly to the training airspace, conduct the specified training, and return to base with adequate fuel reserves for safety. Even with the option of aerial refueling, traveling long distances for daily training is not reasonable. Reasonable alternatives must provide suitable training airspace within 150 nautical miles of the bases.
- Improve the existing MOAs to support low-altitude training and supersonic at lower altitudes to address the existing training deficiencies.

- Increase the variety of terrain in existing MOAs overflown during low-altitude training to improve training realism.
- Adjust the published times of use to align with how the MOAs are currently used.
- Reduce use of Barry M. Goldwater Range (BMGR) East restricted areas for non-hazardous training to improve availability of the high-demand airspace and live-fire ranges for hazardous training.

The DAF is considering the No Action Alternative and three action alternatives:

**Alternative 1 – No Action.** Under the No Action Alternative, inefficient training would continue in the existing MOAs as currently charted and training requirements would remain unmet.

**Alternative 2 – Proposed Action.** The Proposed Action is to alleviate training shortfalls and address evolving training needs for aircrews stationed in Arizona by conducting training in modified airspace. This would necessitate modifications to the volume and attributes of 10 existing DAF-managed MOAs/ATCAAs that the FAA would be responsible for formally implementing as requested by the DAF. A summary of the modifications include:

- Modify published times of use for all MOAs to align with how the MOAs are currently used.
- Combine Tombstone A, B, and C and expand the northern boundary of Tombstone MOA and associated Tombstone ATCAA by approximately 10 nautical miles. Establish an exclusion below 13,000 feet mean sea level (MSL) surrounding Bisbee Douglas International Airport.
- Lower the floor of Tombstone MOA to 100 feet AGL and the floors of Outlaw, Jackal, Gladden, and Bagdad MOAs to 500 feet above ground level (AGL).
- Amend the Letter of Agreement (LOA) for scheduling the Outlaw and Jackal ATCAAs to default to Flight Level (FL) 510.
- Authorize the use of chaff in the Tombstone MOA.
- Adjust the minimum flare release altitude to 2,000 feet AGL in Tombstone, Outlaw, Jackal, Gladden, and Bagdad MOAs.
- Authorize supersonic flight down to 5,000 feet AGL in Tombstone, Outlaw, Jackal, Morenci, and Reserve MOAs.

Optimizing the MOAs in the region would allow non-hazardous training (notably, low-altitude training and supersonic operations at lower altitudes) to occur in DAF-managed MOAs, improving the availability of BMGR East restricted areas to support hazardous training as is its purpose. The Proposed Action would not increase the total number of operations originating from any of the bases, but rather these operations would be shifted from the BMGR East restricted areas to the MOAs. The projected sorties to occur within the fully optimized airspace are detailed in **Table ES-1**. The sorties for each MOA include sorties that currently occur there and those that could occur there with optimization. The use of the individual MOAs could fluctuate year by year. The analysis in the EIS includes the number of sorties projected to occur in each MOA and an additional 10 percent to conservatively account for these minor fluctuations in training activity that would allow for flexibility in use of the MOAs as a collective regional asset. Thus, the total sorties for all MOAs combined is not an accurate representation of the total sorties in

the region, as an increase in use of one MOA would result in a corresponding decrease in other MOA(s). The percentage of the sorties that include supersonic speed is also provided in **Table ES-1**. Sorties currently occur during the day and night and this percentage would not change with the Proposed Action. Chaff and flare usage directly corresponds to the sorties within a given MOA and would have the same relative increases as the sorties. Flares are currently used in all of the MOAs. Chaff is currently used in all of the MOAs except for the Tombstone MOA.

**Table ES-1 Proposed Annual Sorties – Alternative 2**

MOA/ATCAA	Alternative 1 No Action		Alternative 2 Proposed Action		Change from No Action (Total Sorties)
	Total Sorties	Percent Supersonic	Total Sorties	Percent Supersonic	
Tombstone	3,450	0	8,000	1	+4,550
Outlaw/Jackal	5,190	12	6,610	14	+1,420
Morenci/Reserve	3,350	11	4,050	No change	+700
Gladden/Bagdad	6,920	65	9,120	66	+2,200
Sells	14,790	60	17,810	No change	+3,020
Ruby/Fuzzy	5,490	0	7,610	No change	+2,120

**Legend:** ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Area.

**Alternative 3** would alleviate training shortfalls and address evolving training needs of DAF aircrews by implementing the same proposed modifications as Alternative 2, except the northern expansion of approximately 10 nautical miles of Tombstone MOA/ATCAA would not occur. Tombstone A, B, and C would be combined, and the floor lowered to 100 feet AGL and extend up to but not including FL180. The Tombstone ATCAA would remain unchanged from the existing configuration. An exclusion below 13,000 feet MSL surrounding Bisbee Douglas International Airport would be established (same as Alternative 2). To increase the volume of airspace available to support Davis-Monthan AFB training needs down to 100 feet AGL, the floor of Jackal MOA would also be lowered to 100 feet AGL, consuming the existing Jackal Low MOA.

Proposed annual sorties under Alternative 3 are detailed in **Table ES-2**. Alternative 3 affects sorties in Tombstone, Outlaw, and Jackal MOAs; all other operations would be the same as Alternative 2. The percentage of sorties that include supersonic speed would be the same as detailed in Alternative 2. The percentage of sorties occurring during the daytime vs nighttime would be the same as current. Chaff and flare usage directly corresponds to the sorties within a given MOA and would have the same relative increases as the sorties. Flares are currently used in all of the MOAs. Chaff is currently used in all of the MOAs except for the Tombstone MOA.

**Table ES-2 Proposed Annual Sorties – Alternative 3**

MOA/ATCAA	Alternative 1 No Action		Alternative 3		Change from No Action (Total Sorties)
	Total Sorties	Percent Supersonic	Total Sorties	Percent Supersonic	
Tombstone	3,450	0	6,900	1	+ 3,450
Outlaw/Jackal	5,190	12	7,710	14	+2,520
Morenci/Reserve	3,350	11	4,050	No change	+700
Gladden/Bagdad	6,920	65	9,120	66	+2,200
Sells	14,790	60	17,810	No change	+3,020
Ruby/Fuzzy	5,490	0	7,610	No change	+2,120

**Legend:** ATCAA = Air Traffic Control Assigned Airspace; MOA = Military Operations Area.

**Alternative 4** would alleviate training shortfalls and address evolving training needs of DAF aircrews by implementing the same proposed modifications as described for Alternative 2, except that supersonic flight would be authorized down to 10,000 feet AGL (instead of 5,000 feet AGL) in Tombstone, Outlaw, Jackal, Morenci, and Reserve MOAs. The proposed annual sorties, percentage of supersonic flights, and chaff and flare usage would be the same as presented in Alternative 2.

### ES.3 Public Involvement

The DAF solicited public and agency comments during a scoping period from January 18, 2022, through March 4, 2022, and a second scoping period was held from May 4, 2022, through June 3, 2022, by Congressional Delegate request. Public scoping meetings were held throughout Arizona and New Mexico as detailed in **Table ES-3**. A meeting was originally scheduled for Bagdad, Arizona, but was canceled by the municipality due to rising covid cases in the area. A virtual presentation was also available during the scoping phase and is available at <https://www.arizonaregionalairspaceeis.com>. Comments received during the scoping period were considered in preparing the Draft EIS and helped determine the scope of the environmental issues to analyze (see Appendix D in the Draft EIS for a summary of comments and DAF responses).

**Table ES-3 Public Scoping Meeting Schedule**

Date	Location
Monday, February 7, 2022	Sonoran Desert Inn & Conference Center 55 South Orilla Avenue Ajo, AZ 85321
Tuesday, February 8, 2022	Superior Town Hall 199 N Lobb Avenue Superior, AZ 85173
Thursday, February 10, 2022	Congress Fire Department 26733 Santa Fe Road Congress, AZ 85332
Tuesday, February 22, 2022	Village Hall 15 Jake Scott Street Reserve, NM 87830-0587
Wednesday, February 23, 2022	Clifton Community Center 100 North Coronado Blvd Clifton, AZ 85533
Thursday, February 24, 2022	Animas High School 1 Panther Blvd Animas, NM 88020

### ES.4 Summary of Environmental Resources Evaluated in the EIS

CEQ regulations, NEPA, and DAF instructions for implementing NEPA specify that an EIS should address those resource areas potentially subject to impacts. In addition, the level of analysis should be commensurate with the anticipated level of environmental impact. Because potential impacts would not occur under the Proposed Action, the following resources were not evaluated in detail in the EIS: farmlands, water resources, earth resources, natural resources and energy supply, and coastal zone.

Resources analyzed in detail in the EIS include: airspace management and use, safety, noise, air quality, natural resources, land management and recreation, socioeconomics, environmental justice, cultural resources, hazardous materials, and visual effects. **Table ES-4** provides a summary of the environmental consequences for all alternatives by resource area.

**Table ES-4 Summary of Environmental Impacts**

Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Airspace Management and Use</b>			
<ul style="list-style-type: none"> <li>• Training would continue in the MOAs as they are currently charted. There would be no additional effects to civil air traffic and airports.</li> </ul>	<ul style="list-style-type: none"> <li>• Civilian aircraft operating under VFR could transit the active MOAs.</li> <li>• Potential minor impact to instrument approach procedures at Cochise County Airport (Tombstone MOA), Phoenix-Mesa Gateway, and Coolidge Municipal Airports (Outlaw/Jackal MOAs) during times the MOAs are active.</li> <li>• Potential impact to flights departing or arriving from the east along V-66 to Douglas Bisbee International (Tombstone MOA) during times the MOAs are active.</li> <li>• Lowering the floor and the northern expansion of the Tombstone MOA would have minor impacts to civil aviation resulting in 1 minute or less of additional travel time to avoid the MOA during times of activation.</li> <li>• Potential minor impact to flight training schools beneath Outlaw/Jackal and Bagdad/Gladden MOAs.</li> <li>• Lowering the floor of Bagdad/Gladden would have minor impacts to civil aviation resulting in 1 to 7 minutes of additional travel time to avoid the MOA during times of activation.</li> </ul>	<ul style="list-style-type: none"> <li>• Same impacts as Alternative 2, but there would be no impact to instrument approach procedures at Cochise County Airport (Tombstone MOA) since there would be no northern expansion of the MOA.</li> <li>• Lowering the floor of the Tombstone MOA would have minor impacts to civil aviation resulting in 1 minute or less of additional travel time to avoid the MOA during times of activation.</li> </ul>	<ul style="list-style-type: none"> <li>• Same impacts to instrument approach procedures and civil aviation as Alternative 2.</li> </ul>

Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Safety</b>			
<ul style="list-style-type: none"> <li>Current operations and training do not pose a significant safety risk to the public, military personnel, or property.</li> </ul>	<ul style="list-style-type: none"> <li>No new or unique flight safety issues or additional risk in any of the MOAs.</li> <li>Obstacles that would penetrate the new lower floors in the MOAs would be identified on aeronautical charts and avoided (two obstacles beneath Outlaw MOA and two obstacles beneath Tombstone MOA).</li> <li>Continued adherence to Bird/Wildlife Aircraft Strike Hazard Plans and procedures would reduce potential for bird strikes.</li> </ul>	<ul style="list-style-type: none"> <li>Similar impacts as Alternative 2.</li> <li>There are nine obstacles beneath the Jackal MOA that would be identified on aeronautical charts and avoided.</li> </ul>	<ul style="list-style-type: none"> <li>Same impacts as Alternative 2.</li> </ul>
<b>Noise</b>			
<ul style="list-style-type: none"> <li>Subsonic noise exposure currently occurs in all MOAs and does not exceed 65 dB DNL indicating it is generally compatible with all land uses.</li> <li>Supersonic noise exposure currently occurs in all MOAs except Tombstone, Ruby, and Fuzzy MOAs and is generally low ranging from 35 to 55 dBC CDNL.</li> </ul>	<ul style="list-style-type: none"> <li>Subsonic noise exposure would generally increase in all MOAs due to low-level flights in more areas; however, the subsonic noise would not exceed 65 dB DNL in any MOA indicating it is generally compatible with all land uses.</li> <li>The subsonic noise increase would be considered “reportable” per FAA Order 1050.1F in sensitive areas in the Jackal, Jackal Low, Bagdad, and Gladden MOAs, and some parts of the Tombstone MOA.</li> <li>None of the MOAs would have a subsonic noise increase defined as “significant” per FAA Order 1050.1F.</li> <li>The maximum supersonic noise exposure would increase in Jackal, Outlaw, Morenci, Reserve, Gladden, and Bagdad MOAs, but would remain under 62 dBC CDNL, which is a level expected to cause annoyance.</li> </ul>	<ul style="list-style-type: none"> <li>Subsonic noise exposure within each MOA varies slightly from Alternative 2, but the impact conclusions are the same.</li> <li>Subsonic noise would not exceed 65 dB DNL in any MOA indicating it is generally compatible with all land uses.</li> <li>The subsonic noise increase would be considered “reportable” per FAA Order 1050.1F in sensitive areas in the Jackal, Bagdad, and Gladden MOAs, and part of the Tombstone MOA.</li> <li>None of the MOAs would have a subsonic noise increase defined as “significant” per FAA Order 1050.1F.</li> <li>The maximum supersonic noise exposure would increase in Jackal, Outlaw, Morenci, Reserve, Gladden, and Bagdad MOAs, but would remain under 62 dBC CDNL, a level expected to cause annoyance.</li> </ul>	<ul style="list-style-type: none"> <li>Subsonic noise exposure would be the same as Alternative 2.</li> <li>The maximum supersonic noise exposure in Gladden, Bagdad, and Sells would be the same as Alternative 2.</li> <li>The maximum supersonic noise exposure in Jackal, Outlaw, Morenci, and Reserve would be slightly less than Alternative 2.</li> </ul>

Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Air Quality</b>			
<ul style="list-style-type: none"> <li>• Low-altitude training (less than 3,000 feet AGL) and associated criteria pollutant emissions would continue to occur in the Fuzzy, Jackal Low, Morenci, and Tombstone MOAs.</li> </ul>	<ul style="list-style-type: none"> <li>• Low-altitude training (less than 3,000 feet AGL) would occur in more areas than currently to include Outlaw, Jackal, Gladden, and Bagdad MOAs.</li> <li>• None of the criteria pollutant emissions in any MOA would exceed <i>de minimis</i> or Prevention of Significant Deterioration thresholds.</li> <li>• No significant impacts to air quality would occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Criteria pollutant emissions within each MOA vary slightly from Alternative 2, but the impact conclusions are the same.</li> <li>• None of the criteria emissions in any MOA would exceed <i>de minimis</i> or Prevention of Significant Deterioration thresholds.</li> <li>• No significant impacts to air quality would occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Same criteria emissions as Alternative 2.</li> <li>• No significant impacts to air quality would occur.</li> </ul>
<b>Natural Resources</b>			
<ul style="list-style-type: none"> <li>• Training in the MOAs would continue. The resulting noise exposure is relatively low (ranging from 35 dB DNL to 58 dB DNL) having minor disturbance to wildlife.</li> <li>• Repetitive or continuous noise at a single location would not occur.</li> </ul>	<ul style="list-style-type: none"> <li>• Potential disturbance to wildlife caused by visual observation of aircraft, aircraft noise, and use of chaff and flares.</li> <li>• Subsonic noise exposure would be insignificant in all MOAs; no significant impact to population levels or other significant biological impacts would occur.</li> <li>• Responses of domestic animals and horses to low overflights vary, but typically include startling.</li> <li>• Low overflights would not occur repetitively or continuously at any single location since training is distributed throughout the large space.</li> <li>• No significant impacts to special-status species or critical habitat is expected. The potential impact to species would be disturbance from noise or visual observation of aircraft.</li> <li>• DAF is consulting with USFWS in accordance with Section 7 of the Endangered Species Act.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar geographic locations (and associated wildlife) as Alternative 2, but the northern expansion of Tombstone MOA would not occur, thus impacts to species would occur on a slightly smaller geographic scale.</li> <li>• Potential impacts would be the same as described for Alternative 2.</li> </ul>	<ul style="list-style-type: none"> <li>• Same impacts as Alternative 2, except that supersonic noise and associated impacts would be slightly less.</li> </ul>



Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Land Management and Recreation</b>			
<ul style="list-style-type: none"> <li>• Training in the MOAs would continue. Current noise exposure does not exceed 65 dB DNL indicating compatibility with all land uses.</li> </ul>	<ul style="list-style-type: none"> <li>• Noise exposure in all MOAs would be below 65 dB DNL indicating compatibility with all land uses.</li> <li>• Lands beneath the Tombstone C MOA and the Tombstone Proposed Expansion area with a “reportable” noise increase are predominantly managed by the BLM and USFS, with a smaller portion of non-Federal lands, state/local agencies, USFWS, and NPS managed lands.</li> <li>• Lands beneath Jackal MOA with a “reportable” noise increase are predominantly managed by the BLM, USFS, Tribal Nations, and state/local agencies with a smaller portion of non-Federal agencies, USACE, USBR, and DoD managed lands.</li> <li>• Lands beneath the Gladden/Bagdad MOAs with a “reportable” noise increase are primarily managed by the BLM with the remaining lands managed by state and local agencies and a smaller portion of USACE and USFWS managed lands.</li> </ul>	<ul style="list-style-type: none"> <li>• Noise exposure in all MOAs would be below 65 dB DNL indicating compatibility with all land uses.</li> <li>• A “reportable” noise increase would occur beneath parts of the Tombstone C MOA, as well as Jackal, Bagdad, and Gladden MOAs. Land management of these areas is the same as described in Alternative 2.</li> </ul>	<ul style="list-style-type: none"> <li>• Same impacts as Alternative 2.</li> </ul>

Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Socioeconomics</b>			
<ul style="list-style-type: none"> <li>• Training in the MOAs would continue. No change to socioeconomic conditions: population, housing, and economic/employment.</li> </ul>	<ul style="list-style-type: none"> <li>• Expanding the Tombstone MOA to the north would expose new areas to military overflights and noise where currently there is not.</li> <li>• No public health concern associated with the minor increase in noise exposure.</li> <li>• Noise exposure would not be at a level expected to impact property values.</li> <li>• Noise exposure would be below 65 dB DNL indicating compatibility with all land uses to include recreational uses.</li> <li>• Noise may disturb outdoor recreational users but not expected to be at a level to affect the economy of that industry.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts would be the same as Alternative 2 with the exception of the Tombstone MOA northern expansion.</li> </ul>	<ul style="list-style-type: none"> <li>• Impacts would be the same as Alternative 2.</li> </ul>

Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Environmental Justice</b>			
<ul style="list-style-type: none"> <li>• Training in the MOAs would continue.</li> <li>• Current noise exposure does not exceed 80 dB DNL, thus noise-induced hearing loss is not a concern.</li> <li>• Current noise exposure does not exceed 65 dB DNL, indicating the noise is generally compatible with all land uses.</li> <li>• No disproportionate impacts to environmental justice populations or children.</li> </ul>	<ul style="list-style-type: none"> <li>• No significant air quality emissions would occur.</li> <li>• There would be an increase in noise exposure, but would remain under 65 dB DNL indicating compatibility with all land uses.</li> <li>• Noise exposure does not exceed 80 dB DNL, thus noise induced hearing loss is not a concern.</li> <li>• Noise does not exceed threshold defined for a concern for classroom speech interference.</li> <li>• A “reportable” increase in noise would occur in some noise sensitive areas within counties that have a minority population that exceeds 50 percent and low-income populations that exceed 20 percent in Jackal/Jackal Low MOA and the expanded area of Tombstone MOA and parts of the Tombstone C MOA.</li> <li>• Training would continue to be spread across a vast area and impact all counties beneath MOAs equally.</li> <li>• No population would be exposed to a disproportionate number of overflights and the associated impacts from those overflights.</li> <li>• No disproportionate impacts on any environmental justice populations or children.</li> </ul>	<ul style="list-style-type: none"> <li>• A “reportable” increase in noise would occur in some noise sensitive areas within counties that have a minority population that exceeds 50 percent and low-income populations that exceed 20 percent in Jackal/Jackal Low MOA and parts of Tombstone C MOA. No disproportionate impacts on any environmental justice populations or children.</li> </ul>	<ul style="list-style-type: none"> <li>• Supersonic noise exposure would be slightly less in Outlaw, Jackal, Morenci, and Reserve MOAs as compared to Alternative 2.</li> <li>• No disproportionate impacts on any environmental justice populations or children.</li> </ul>

Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Cultural Resources</b>			
<ul style="list-style-type: none"> <li>• Training in the MOAs would continue.</li> <li>• Subsonic noise currently does not exceed a level that would be potentially damaging to structural components of historic structures.</li> <li>• Supersonic operations are currently authorized in Tombstone, Outlaw, Jackal, Morenci, Reserve, Gladden, Bagdad, and Sells MOAs.</li> <li>• Infrequent and random sonic booms are possible throughout those MOAs, but structural damage and glass breakage of historic structures is unlikely.</li> </ul>	<ul style="list-style-type: none"> <li>• Subsonic peak noise level from the low-level overflights could potentially reach or exceed a level that could damage fragile structures, such as some historic structures; however, the peak noise level only occurs for 1/8 of a second reducing this potential. This would only occur beneath the Tombstone MOA with a 100-foot AGL floor; however, F-16 and F-35 overflights at 100 feet would be extremely rare.</li> <li>• Supersonic overflight at the proposed lower altitude (5,000 feet AGL) would result in sonic booms with a higher intensity than currently in the Tombstone, Jackal, Outlaw, Morenci, and Reserve MOAs.</li> <li>• Higher intensity sonic booms have the potential to break glass or cause cracks in plaster; however, the infrequency and random nature of sonic booms suggest that structural damage to historic structures would be unlikely.</li> <li>• The increased noise exposure could have an adverse effect on traditional cultural properties or areas where traditional ceremonies are held.</li> <li>• Government-to-Government consultations with 30 Tribes and Pueblos is ongoing to determine adverse impacts and possible mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Subsonic peak noise level from the low-level overflights could potentially reach or exceed a level that could potentially damage fragile structures, such as some historic structures; however, the peak noise level only occurs for 1/8 of a second reducing this potential. This potential would only occur beneath the Tombstone MOA and the Jackal MOA with a 100-foot AGL floor; however, F-16 and F-35 overflights at 100 feet would be extremely rare.</li> <li>• Other conclusions are the same as Alternative 2.</li> <li>• Government-to-Government consultations with 30 Tribes and Pueblos is ongoing to determine adverse impacts and possible mitigation measures.</li> </ul>	<ul style="list-style-type: none"> <li>• Subsonic peak noise level from the low-level overflights could potentially reach or exceed a level that could potentially damage fragile structures, such as some historic structures; however, the peak noise level only occurs for 1/8 of a second reducing this potential. This potential would only occur beneath the Tombstone MOA with a 100-foot AGL floor; however, F-16 and F-35 overflights at 100 feet would be extremely rare.</li> <li>• Supersonic overflight would be allowed at 10,000 feet AGL which is lower than currently but higher than that proposed for Alternative 2.</li> <li>• Potential damage to structures would be similar to that described for Alternative 2.</li> <li>• Government-to-Government consultations with 30 Tribes and Pueblos is ongoing to determine adverse impacts and possible mitigation measures.</li> </ul>

Alternative 1 – No Action	Alternative 2 – Proposed Action	Alternative 3	Alternative 4
<b>Hazardous Materials</b>			
<ul style="list-style-type: none"> <li>• Training in the MOAs would continue. The potential for hazardous materials (jet fuels, ethylene glycol, hydraulic fluid, and hydrazine) to be introduced into the environment beneath the MOAs in the unlikely case of an aircraft mishap would continue.</li> <li>• The DAF has Standard Operating Procedures in the event of an aircraft mishap to identify potential hazardous materials and situations, protect responding personnel and the environment from immediate hazards, and to provide guidelines for the ultimate cleanup and disposal of crash residues.</li> </ul>	<ul style="list-style-type: none"> <li>• Training would occur in the same general geography as it does currently, except for the expanded area of the Tombstone MOA.</li> <li>• The same potential hazardous materials as currently could be introduced in the unlikely case of an aircraft mishap and include: jet fuels, ethylene glycol, hydraulic fluid, and hydrazine.</li> <li>• Aircraft mishaps are rare and hazardous material releases would be minimal.</li> </ul>	<ul style="list-style-type: none"> <li>• Training would occur in the same geography as currently; thus, the impacts are the same as Alternative 1.</li> </ul>	<ul style="list-style-type: none"> <li>• Training would occur in the same geography as Alternative 2, thus the impacts are the same.</li> </ul>
<b>Visual Effects</b>			
<ul style="list-style-type: none"> <li>• Training in the MOAs would continue to be intermittently visible to people on the ground beneath the airspace.</li> </ul>	<ul style="list-style-type: none"> <li>• Training at lower levels than currently in the Tombstone, Outlaw, Jackal, Bagdad, and Gladden MOAs would likely be more visible to observers on the ground in these areas.</li> <li>• Expanding the northern boundary of the Tombstone MOA would expose new land areas to military training and would likely be a noticeable change in that area.</li> <li>• Operations would be intermittent, or short duration, and occur over a large geographic area and have a minor influence on the landscape below.</li> <li>• Visual effects could be moderate in some visually sensitive areas with potential indirect impacts to naturalness and unconfined recreation activities in Wilderness Areas and Wilderness Study Areas, as well as scenic values.</li> </ul>	<ul style="list-style-type: none"> <li>• Similar impacts as Alternative 2, except that Jackal MOA would be lowered to 100 feet AGL as opposed to 500 feet AGL resulting in higher visibility of low-level altitude aircraft compared to Alternative 2.</li> <li>• The Tombstone MOA would not be expanded, thus no visual effects in that area.</li> <li>• Other conclusions are the same as Alternative 2.</li> </ul>	<ul style="list-style-type: none"> <li>• Same visual effects as Alternative 2.</li> </ul>

**Legend:** AGL = above ground level; BLM = Bureau of Land Management; CDNL = C-weighted Day-Night Average Sound Level; DAF = Department of the Air Force; dB = decibel; dBC = C-weighted decibel; DNL = Day-Night Average Sound Level; DoD = Department of Defense; FAA = Federal Aviation Administration; MOA = Military Operations Area; NPS = National Park Service; USACE = United States Army Corps of Engineers; USBR = United States Bureau of Reclamation; USFS = United States Forest Service; USFWS = United States Fish and Wildlife Service; VFR = Visual Flight Rules.

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