

## References

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### ***F-35A Training Basing Environmental Impact Statement***

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Endangered Species Act of 1973 (P.L. 93-205, 87 Stat. 884 ;16 U.S.C. §§ 1531-1544, as amended)

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## **List of Preparers**

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## **List of Preparers**

**Kevin D. Akstulewicz**, Infrastructure/Utilities

B.S., Environmental Science/Policy, University of West Florida, 1999

Years of Experience: 12

**Marie Beth Alva**, Air Quality

B.S., Environmental Toxicology, University of California, Davis, 2007

Years of Experience: 3

**John K. Austin, Jr.**, Noise Analyst

B.A., Biology, University of Virginia, 1999

Years of Experience: 11

**Eric A. Banks**, Senior Program Manager

Ph.D., Biochemistry, University of Texas Health Science Center at San Antonio, 2007

M.A., Chemistry and Biochemistry, University of Texas at Austin, 1991

B.S., Biochemistry, Texas A&M University, 1981

Years of Experience: 21

**Debra S. Barringer**, Biological Resources, Wetlands, and Special Status Species

M.S., Ecology, Colorado State University, 1997

B.A., Biology, Colorado College, 1982

Years of Experience: 15

**Rachel D. Baxter**, Socioeconomics, Environmental Justice and Protection of Children

B.A., Economics, University of Colorado, 2004

Years of Experience: 5

**Kevin Bradley**, Aviation and Environmental Impact

M.S., Aerospace Engineering, University of Maryland, 2003

B.S., Aerospace Engineering, University of Maryland, 1989

Years of Experience: 16

**Elliot Chasin**, Biological Resources

M.S., Environmental Science and Management, University of California, Santa Barbara, 2007

B.A., Anthropology, University of California, Santa Barbara, 1999

Years of Experience: 3

**Chris Crabtree**, Air Quality

B.A., Environmental Studies, University of California Santa Barbara, 1978

Years of Experience: 23

**Daniel F. Dehn**, Environmental Analyst/GIS Support

B.S., Geology, University of New Mexico, 2005

M.A., English, University of Maine, 1999

B.A., English, Rutgers College, 1994

Years of Experience: 6

**Luis Diaz**, Hazardous Materials and Waste Management

M.E., Civil Engineering, University of South Florida, 1995

B.S., Aerospace Engineering, University of Florida, 1987

Years of Experience: 23

**David M. Dischner**, Project Manager

B.A., Urban Affairs, Virginia Polytechnic Institute and State University, 1974

Hazardous Materials Management Certificate, University of California, Riverside, 1988

Years of Experience: 36

**J. Micah Downing**, Aeroacoustics and Environmental Impact

Ph.D., Mechanical Engineering, Georgia Institute of Technology, 1993

M.S., Aeronautics, George Washington University, 1988

B.S., Physics, Davidson College, 1986

Years of Experience: 22

**Catrina Gomez**, Land Use

M.E.S.M., Environmental Science and Management, University of California,  
Santa Barbara, 2003

B.A., Biological Sciences and Psychology, University of California, Santa Barbara, 1998

Years of Experience: 8

**Susan M. Goodan**, Recreation

M.A., Architecture, University of New Mexico, 1988

B.A., Ethics/Archaeology, University of Cape Town, 1975

Years of Experience: 21

**Heather C. Gordon**, GIS Analyst

M.S., Geography, University of New Mexico, 2007

B.A., Environmental Studies and Planning, Sonoma State University, 1996

Years of Experience: 12

**Lorraine S. Gross**, Cultural Resources

M.A., Anthropology, Washington State University, 1986

B.A., Anthropology, Pomona College, 1975

Years of Experience: 27

**Bruce J. Ikelheimer**, Aeroacoustics and Environmental Impact

Ph.D., Mechanical Engineering, North Carolina State University, 1998

M.S., Aerospace Engineering, North Carolina State University, 1994

B.S., Mechanical Engineering, Union College, 1991

Years of Experience: 18

**Joseph A. Jimenez**, Cultural Resources

M.A., Anthropology, Idaho State University, 1986

B.A., Anthropology, Idaho State University, 1984

Years of Experience: 25

**Dan R. King**, Airspace and Ranges

B.S., General Business, New Mexico State University, 1963

Years of Experience: 31

**Claudia Laughlin**, Graphics

Years of Experience: 14

**Pamela Lawson**, Production Manager

Years of Experience: 22

**Richard S. Levin**, P.G., Water Resources, Infrastructure/Utilities, Hazardous Waste, Soil and Groundwater Remediation

B.A., Geology, University of South Florida, 1980

Years of Experience: 30

**Pamela C. McCarty**, Socioeconomics

M.A., Applied Economics/Economics, University of Central Florida, 2004

B.S., Business Administration/Economics, University of Central Florida, 2002

Years of Experience: 4

**Josh J. Mellon**, Data Analyst

M.S., Applied Physics, Oregon State University, 2007

B.S., Physics, Oregon State University, 2004

Years of Experience: 6

**Thomas W. Mulroy**, Biological Resources

Ph.D., University of California, Irvine, 1976

M.S., Biology, University of Arizona, 1971

B.A., Zoology, Pomona College, 1968

Years of Experience: 35

**Mike D. Nation**, NEPA Data Analyst

B.S., Environmental Science/Policy, University of West Florida, 2000

Years of Experience: 10

**Brad Rock**, Ground and Flight Safety

B.A., Biology, Virginia Wesleyan College, 1974

Cultural Resources Management Certificate, University of Nevada, Reno, 1990

Years of Experience: 36

**Perry W. Russell**, Physical Resources

M.S., Geology, California State University, Northridge, 1988

B.A., Geology, University of California, Santa Barbara, 1984

Years of Experience: 24

**Lisbeth A. Springer**, AICP, Land Use

M.C.R.P., City and Regional Planning, Harvard University, 1980

B.A., Sociology, Colorado College, 1975

Years of Experience: 29

**Robert A. Thompson**, Airspace Management

M.A., Human Resources Management, Pepperdine University, 1979

B.S., Mathematics, Heidelberg College, 1968

Certified Environmental Manager, Nevada Department of Environmental Protection,  
1995

Years of Experience: 40

**Robert E. Van Tassel**, Program Manager and Quality Assurance

M.A., Economics, University of California, Santa Barbara, 1972

B.A., Economics, University of California, Santa Barbara, 1970

Years of Experience: 38

**C. Flint Webb**, P.E., Air Quality

B.S., Mechanical Engineering, Rensselaer Polytechnic Institute, 1979

Years of experience: 20

**Chris M. Wildt**, Cultural Resources

B.S., Anthropology, Portland State University, 1991

Years of Experience: 19

**Christopher Woods**, GIS Analyst

B.A., Geography, University of Western Ontario, 1997

GIS Applications Specialist, Sir Sandford Fleming College, 1997

Years of Experience: 12

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520 Boise Avenue  
Grand View, ID 83624

Lizard Butte Library  
111 South 3rd Avenue West  
Marsing, ID 83639

Meridian Library  
Main Branch  
1326 West Cherry Lane  
Meridian, ID 83642

Mountain Home Public Library  
790 North 10th East  
Mountain Home, ID 83647

### HOLLOMAN AFB REPOSITORIES

Alamogordo Public Library  
920 Oregon Avenue  
Alamogordo, NM 88310

Clardy Fox Branch Library  
5515 Robert Alva Avenue  
El Paso, TX 79905

Fort Sumner Public Library  
235 West Sumner Avenue  
Fort Sumner, NM 88119

Michael Nivison Public Library  
90 Swallow Place  
Cloudcroft, NM 88317-0515

Roswell Public Library  
301 North Pennsylvania Avenue  
Roswell, NM 88201

Ruidoso Public Library  
107 Kansas City Road  
Ruidoso, NM 88345

### LUKE AFB REPOSITORIES

El Mirage Branch Library  
14011 North 1st Avenue  
El Mirage, AZ 85335

Gila Bend Branch Library  
202 North Euclid Avenue  
Gila Bend, AZ 85337

Glendale Public Library  
Main Branch  
5959 West Brown Street  
Glendale, AZ 85302

Litchfield Park Branch  
101 West Wigwam Boulevard  
Litchfield Park, AZ 85340

Sun City Branch Library  
16828 North 99th Avenue  
Sun City, AZ 85351

Northwest Regional Library-Surprise  
16089 North Bullard Avenue  
Surprise, AZ 85374

Wickenburg Public Library  
164 East Apache Street  
Wickenburg, AZ 85390

### TUCSON AGS REPOSITORIES

Copper Queen Library  
6 Main Street  
Bisbee, AZ 85603

Safford City-Graham County Library  
808 South 7th Avenue  
Safford, AZ 85546

San Carlos Public Library  
San Carlos Avenue  
San Carlos, AZ 85550

Sierra Vista Public Library  
2600 East Tacoma Street  
Sierra Vista, AZ 85635

Valencia Branch Library  
202 West Valencia Road  
Tucson, AZ 85706

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# **Glossary**

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## Glossary

***Above Ground Level (AGL):*** Altitude expressed in feet measured above the ground surface.

***Aerial Refueling Tracks:*** Refueling operations are performed in designated aerial refueling tracks, anchors, or FAA approved airspace.

***Air Force Instruction (AFI):*** Air Force Instructions implementing United States laws and regulations, and providing policy for Air Force personnel and activities.

***Air Combat Command (ACC):*** The Air Force Command that operates combat aircraft assigned to bases within the contiguous 48 states, except those assigned to Air National Guard and the Air Force Reserve Command.

***Air-to-Air Training:*** Air-to-air training prepares aircrews to achieve and maintain air superiority over the battlefield and defeat enemy aircraft. Air-to-air training often includes some aircraft playing the role of adversaries, or enemy forces. Air-to-air training activities include advanced handling characteristics, air combat training, low-altitude air-to-air training, and air intercept training. This training also requires the use of defensive countermeasures.

***Air-to-Ground Training:*** Air-to-ground training employs all the techniques and maneuvers associated with weapons use and includes low-and high-altitude tactics, navigation, formation flying, target acquisition, and defensive reaction. Training activities include surface attack tactics, different modes of weapons delivery, electronic combat training, and the use of defensive countermeasures.

***Air Traffic:*** Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

***Air Traffic Control (ATC):*** A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic.

***Air Traffic Control Assigned Airspace (ATCAA):*** Procedural airspace established by letter of agreement between the user and ATC, within positive control (Class A) airspace, of defined vertical and lateral limits, for the purpose of providing air traffic segregation between the specified activities conducted within the assigned airspace and other IFR traffic. ATCAAs are not charted.

***Clean Air Act (CAA):*** This Act empowered the United States Environmental Protection Agency to establish standards for common pollutants that represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect public health and safety.

***Candidate Species:*** A species for which the United States Fish and Wildlife Service has sufficient information regarding the biological vulnerability of and threat(s) to that species to warrant a proposal to reclassify it as threatened or endangered (Formerly Category 1 Candidate species).

**C-Weighted Day-Night Sound Level (CDNL):** C-Weighted Day-Night Sound Level is day-night sound levels computed for areas subjected to sonic booms. These areas are also subjected to subsonic noise assessed according to the Onset-Rate Adjusted Monthly Day-Night Average Sound Level (DNL<sub>mr</sub>).

**Chaff:** Chaff is the term for small fibers of aluminum-coated mica packed into approximately 150 gram bundles and ejected by aircraft as a self-defense measure to reflect hostile radar signals.

**Council on Environmental Quality (CEQ):** The Council is within the Executive Office of the President and is composed of three members appointed by the President, subject to approval by the Senate. Members are to be conscious of and responsive to the scientific, economic, social, esthetic, and cultural needs of the nation; and to formulate and recommend national policies to promote the improvement of quality of the environment.

**Day-Night Average Sound Level (DNL):** Day-Night Average Sound Level is a noise metric combining the levels and durations of noise events and the number of events over an extended time period. It is a cumulative average computed over a 24-hour period to represent total noise exposure. DNL also accounts for more intrusive nighttime noise, adding a 10 dB penalty for sounds after 10:00 P.M. and before 7:00 A.M. DNL is the FAA's primary noise metric. FAA Order 1050.1E defines DNL as the yearly day/night average sound level.

**Decibel (dB):** A sound measurement unit.

**Defensive Countermeasures:** Coordination of maneuvers and use of aircraft defensive systems designed to negate enemy threats. Those maneuvers (which include climbing, descending, and turning) requiring sufficient airspace to avoid being targeted by threat systems. Aircraft use sophisticated electronic equipment to jam air and ground radar-tracking systems and dispense chaff and flares to confuse hostile radar and infrared sensors.

**Endangered Species:** The Endangered Species Act of 1973 defined the term "endangered species" to mean any species (including any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature) that is in danger of extinction throughout all or a significant portion of its range.

**Environmental Justice:** Pursuant to Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, review must be made as to whether a federal program, policy, or action presents a disproportionately high and adverse human health or environmental effect on minority and/or low-income populations.

**Environmental Night:** The period between 10 p.m. and 7 a.m. when 10 dB is added to aircraft noise levels due to increased sensitivity to noise at night.

**Fiscal Year:** U.S. Government accounting year beginning 1 October through 30 September.

**Flight Level:** The Flight Level refers to the altitude above MSL. FL230, for example, is approximately 23,000 feet MSL.

**Instrument Flight Rules (IFR):** A standard set of rules that all pilots, civilian and military, must follow when operating under flight conditions that are more stringent than visual flight rules. These conditions include operating an aircraft in clouds, operating above certain altitudes prescribed by Federal Aviation Administration regulations, and operating in some locations like major civilian airports. Air traffic control agencies ensure separation of all aircraft operating under IFR.

**Instrument Route (IR):** Routes used by the Department of Defense and associated Reserve and Air Guard units for the purpose of conducting low-altitude navigation and tactical training in both IFR and VFR weather conditions below 10,000 feet MSL at airspeeds in excess of 250 knots indicated airspeed.

**Jet Route:** A route designed to serve aircraft operations from 18,000 feet mean sea level (MSL) up to and including flight level 450. The routes are referred to as "J" routes with numbering to identify the designated route; e.g., J-151.

**Maximum Sound Level ( $L_{max}$ ):**  $L_{max}$  is the highest sound level that occurs during a single aircraft overflight. For an observer, the noise level starts at the ambient noise level, rises up to the maximum level as the aircraft flies closest to the observer, and returns to the ambient level as the aircraft recedes into the distance. FAA Order 1050.1E defines  $L_{max}$  as a single event metric that is the highest A-weighted sound level measured during an event.

**Mean Sea Level (MSL):** Altitude expressed in feet measured above average sea level.

**Military Operations Area (MOA):** Airspace below 18,000 feet MSL established to separate military activities from instrument flight rule traffic and to identify where these activities are conducted for the benefit of pilots using visual flight rules.

**Military Training Airspace:** Special Use Airspace and Airspace for Special Use used by military aircrews to practice flight activities necessary to maintain combat readiness.

**Military Training Route (MTR):** A Military Training Route is a corridor of airspace with defined vertical and lateral dimensions established for conducting military flight training at airspeeds in excess of 250 nautical miles per hour.

**Mitigation:** CEQ Sec. 1508.20 defines "Mitigation" to include:

- Avoiding the impact altogether by not taking a certain action or parts of an action.
- Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
- Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
- Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
- Compensating for the impact by replacing or providing substitute resources or environments.

**Nautical Mile (NM):** Equal to 1.15 statute miles.

**National Environmental Policy Act (NEPA):** The National Environmental Policy Act of 1969 directs federal agencies to take environmental factors into consideration in their decisions.

**National Historic Landmark (NHL):** NHLs are places that “possess exceptional value or quality in illustrating and interpreting the heritage of the United States” and include battlefields, architectural or engineering masterpieces, ruins, and historic towns and communities.

**National Historic Preservation Act (NHPA):** The NHPA of 1966, as amended, established a program for the preservation of historic properties throughout the United States.

**Notice to Airmen (NOTAM):** A notice containing information (not known sufficiently in advance to publicize by other means) concerning the establishment, condition, or change in any component (facility, service, or procedure of, or hazard in the National Airspace System) the timely knowledge of which is essential to personnel concerned with flight operations.

**Onset-Rate Adjusted Monthly Day-Night Average Sound Level ( $DNL_{mnr}$ ):** Onset Rate-Adjusted Monthly Day-Night Average Sound Level is the measure used for subsonic aircraft noise in military airspace (MOAs or Warnings Areas). This metric accounts for the fact that when military aircraft fly low and fast, the sound can rise from ambient to its maximum very quickly. Known as an onset-rate, this effect can make noise seem louder due to the added “surprise” effect. Penalties of up to 11 dB are added to account for this onset-rate. Noise levels are interpreted the same way for  $L_{dnmr}$  as they are for DNL. (See DNL above).

**Ordnance:** Any item carried by an aircraft for dropping or firing, including but not limited to, live or inert bombs, ammunition, air-to-air missiles, chaff, and flares.

**Restricted Areas:** A restricted area is designated airspace that supports ground or flight activities that could be hazardous to non-participating aircraft.

**See-and-avoid:** When weather conditions permit, pilots operating IFR or VFR are required to observe and maneuver to avoid other aircraft. Right-of-way rules are contained in FAR Part 91.

**Sonic Boom:** A sonic boom is the impulsive noise created when a vehicle flies at speeds faster than sound.

**Sortie:** A sortie is a single flight, by one aircraft, from takeoff to landing.

**Sortie-Operation:** The use of one airspace unit (e.g., Military Operations Area or Air Traffic Control Assigned Airspace) by one aircraft. The number of sortie-operations is used to quantify the number of uses by aircraft and to accurately measure potential impacts; e.g. noise, air quality, and safety impacts. A sortie-operation is not a measure of how long an aircraft uses an airspace unit, nor does it indicate the number of aircraft in an airspace unit during a given period; it is a measurement for the number of times a single aircraft uses a particular airspace unit.

**Sound Exposure Level (SEL):** Sound Exposure Level (SEL) accounts for both the maximum sound level and the length of time a sound lasts. It provides a measure of the total sound exposure for an entire event. FAA Order 1050.1E defines SEL as a single event metric that takes into account both the noise level and duration of the event and referenced to a standard duration of one second.

**Special Activity Airspace (SAA):** Any airspace with defined dimensions within the National Airspace System wherein limitations may be imposed upon aircraft operations. This airspace may be restricted areas, prohibited areas, military operations areas, air traffic control assigned airspace, and any other designated airspace areas.

**State Historic Preservation Office (SHPO):** State department responsible for assigning protected status for cultural and historic resources.

**Statistical Exceedance Level:** The sound level exceeded x percent of the time.  $L_{10}$  is the level exceeded 10 percent of the time,  $L_{90}$  is the level exceeded 90 percent of the time, etc.

**Temporary Flight Restrictions (TFR):** A TFR is a geographically-limited, short-term, airspace restriction. Temporary flight restrictions often encompass major sporting events, natural disaster areas, air shows, space launches, and Presidential movements.

**Threatened Species:** A species that is likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

**Traditional/Cultural Resource:** Cultural and traditional resources are any prehistoric or historic district, site or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes.

**Victor Airway:** A Victor Airway is a special kind of Class E airspace. The routes connect radio navigation beacons called very high frequency omni-directional range (VOR) stations that radiate a signal in all directions. These stations are usually located at or near airfields. North-south Victor Airways have odd numbers while east-west airways have even numbers. These federal or Victor Airways are used by both Instrument Flight Rules and Visual Flight Rules aircraft. The airspace extends from 1,200 feet AGL to 18,000 feet MSL. The width of the Victor corridor depends on the distance from the navigational aids (such as VOR's). When VOR's are less than 102 NM from each other, the Victor airway extends 4 NM on either side of the centerline (8 NM total width). When VOR's are more than 102 NM from each other, the width of the airway in the middle increases. The width of the airway beyond 51 NM from a navaid is 4.5 degrees on either side of the center line between the two navaids (at 51 NM from a navaid, 4.5 degrees from the centerline of a radial is equivalent to 4 NM). The maximum width of the airway is at the middle point between the two navaids. This is when 4.5 degrees from the center radial results in a maximum distance for both navaids.

**Visual Flight Rules (VFR):** A standard set of rules that all pilots, both civilian and military, must follow when not operating under instrument flight rules. These rules require that pilots remain clear of clouds and avoid other aircraft. See instrument flight rules.

**Visual Routes (VR):** Routes used by military aircraft for conducting low-altitude, high-speed navigation, and tactical training. These routes are flown under Visual Flight Rules.

**VHF Omnidirectional Radio Range (VOR):** A type of radio navigation system for aircraft. These are ground-based radio navigational aids scattered around the country. A VOR station transmits a signal that the receiver can use to calculate its position relative to or from the station (see Victor Airway).

**Wetland, Jurisdictional:** A jurisdictional wetland is a wetland that meets all three United States Army Corps of Engineers' criterion for jurisdictional status: appropriate hydrologic regime, hydric soils, and facultative to obligate wetland plant communities under normal growing conditions.