

Impacts of Alternatives 2 and 4 on Portal, AZ

I wish to draw attention to some overlooked impacts of low-flying military aircraft on the health, property and livelihood of residents in Portal, AZ, a community included within the expanded Tombstone military operations area (MOA)¹ under Alternatives 2 and 4. The EIS fails to recognize the unique characteristics of the community that make it particularly vulnerable to the adverse effects of noise and flares.

Alternative 2: Noise and Flares

(a) Subsonic flights

Alternative 2 establishes a floor of 100 feet above ground level (AGL) for subsonic and 5,000 feet AGL for supersonic flights.

The EIS distinguishes between "single event" noise metrics, which describe "the noise an observer would experience during an actual aircraft overflight" and average metrics, "the noise based on annual *average* daily aircraft operations" (DNL). (p. 3-20)

With regard to single subsonic flights, "An F-16 direct overflight with afterburner at 100 feet AGL would have an Lmax (peak noise level) as high as 131 dB [decibels]. . . The Lmax occurs for about 1/8 of a second. An F-16 overflight at 500 feet AGL would have a peak noise level of 120 dB." (p. 3-30). With regard to average metrics, no precise noise levels can be described in the Portal area, where such subsonic flights are currently unauthorized and, theoretically, do not occur. The average would depend on the number and type of actual sorties, the aircraft involved and the characteristics of the location. The EIS asserts that "no person or place beneath any of the training air space associated with this EIS would be exposed to noise levels greater than 80 dB DNL"(p. 3-24),² however, average noise levels even below this are unacceptable in Portal because of the area's unique characteristics as described below.

Regarding single events, a noise above 120 dB can cause immediate harm to the ears according to the CDC³ and, as the EIS admits with regard to averages, progressive hearing loss is a risk at 80 dB DNL (p. 3-24). These levels would be reached, or exceeded, by subsonic flights at 100 feet AGL. Regarding the average metric, the EIS admits that noise in excess of 65 dB DNL may cause "annoyance", and that in "very rural" or "wilderness" areas, even 65 dB DNL may be "annoying" (p. 3-28).⁴ Portal is such an area.

¹ Email to author of 2-2-2022 from Grace Keesling, GS-13, DAF, Air Force NEPA Division (AFCEC/CZN).

² "To provide a frame of reference, the average noise level for some common noise sources include: firecrackers (140 dB), a rock band concert (120 dB), a lawnmower (95 dB), a vacuum cleaner 10 feet away (85 dB), and a garbage disposal (75 dB)" (p. 3-30). Cf. the levels described by the Purdue University Chemistry Dept.: <https://www.chem.purdue.edu/chemsafety/Training/PPETrain/dblevels.htm>, and the Yale University Environmental Health and Safety: <https://ehs.yale.edu/sites/default/files/files/decibel-level-chart.pdf>.

³ https://www.cdc.gov/nceh/hearing_loss/what_noises_cause_hearing_loss.html

⁴ The level at which adverse noise effects occur varies between 55 dB DNL and 65 dB DNL, according to different agencies (pp. 3-27, 3-28). The Purdue table says that most people find the upper 70 dBs "annoyingly loud".

As the EIS states, citing FAA Order 1050.1F, "special consideration must be given to the evaluation of noise impacts in areas of quiet setting where compatible land use criteria [as generally prescribed for military aircraft] are not relevant to the value, significance, and enjoyment of the area (e.g., wilderness areas, national wildlife refuge, etc.)" and these "quiet settings" include "parts of the Tombstone MOA." (p. 3-41)

Portal, being part of the expanded Tombstone MOA, deserves "special consideration" not only because it is quieter, and hence more "noise sensitive" than some other areas, but because of its unique demographic and socioeconomic characteristics.

Located on the eastern edge of the Chiricahua Wilderness/Coronado National Forest, Portal is a favored destination for birders, hikers and naturalists from around the world. It has been called "Arizona's Yosemite." The population includes astronomers, artists, composers, writers, retirees, ranchers and the biologists and students at the Southwestern Research Station, a branch of the American Museum of Natural History. Although lacking a store, gas station and bank, Portal possesses a motel, numerous guest houses, a library, museum and private observatories. It is not a blank space on the map.

The pristine natural setting is the settlement's social and economic foundation, bringing scientists, students, birders and hikers to the area and allowing resident writers and artists to work undisturbed. The noise produced both by single overflights at low altitude and the cumulative daily effect of such flights (average metric) would detract from the livelihood as well as the health of the community.

The EIS does admit that recurring aircraft noise may cause "long-term annoyance," but does not take into account the *economic* effects of such annoyance on a community which depends on attracting visitors who want to experience unspoiled natural surroundings. Portal would soon lose its reputation as a premier birding and hiking destination if military aircraft were to roar overhead. The Research Station would be less attractive as a scientific, educational and conference venue. Likewise, the Chiricahua Museum which holds annual herpetological conferences. It is also possible that the wild life would behave differently, thus reducing the Research Station's appeal for investigation of animal behavior.

We are told that low level flights would be rare; however, it would not need many such flights to drive some residents away and discourage visitors from returning. I have personally experienced a "stray" F-16 flying so low overhead, while I was on a hiking trail, that I could see the afterburner flames and was deafened by the noise. The experience would stop me from coming back to Portal if I did not already own a house here.

In theory *some* subsonic flights would be higher than the 100 feet AGL floor set by Alternatives 2 and 4. Federal regulations⁵ require an altitude of at least 1,000 feet above the highest obstacle

⁵ CFR 91.119.

within a horizontal radius of 2,000 feet of the aircraft, so the 100 feet floor would only apply over "open" areas. However, in a rural community such as Portal, where buildings are scattered, it would be difficult for pilots to identify, and then increase altitude over "obstacles" such as homes, the Research Station and the Visitor Center. Even now, when military jets are not authorized to fly over Portal, low-flying strays have given rise to many complaints. Since the new proposals double the number of sorties in the Tombstone area, such violations are likely to increase.

Even if pilots do conform to regulations and fly at 1,000 feet over the highest obstacle, the noise produced (103 dB or more) would be intolerable, particularly if repeated.

(b) Supersonic flights

Supersonic flights at 5,000 feet AGL would generate sonic booms. The draft EIS does not calculate annual cumulative noise from sonic booms (CDNL, p. 3-24) for the Tombstone MOA because of the low number of proposed sorties (less than 2 per week) but maintains that it would be below the annoyance level (p. 3-44). I could not determine the loudness of a single event boom at 5,000 feet AGL, but Table 3.4-4 offers some guidance: a direct overflight by an F-16C at 10,000 feet AGL would generate a peak noise level of 82-90 dB (depending on several variables). A boom at 5,000 feet AGL would obviously be greater. A single event noise of this magnitude would be intolerable.

Property damage would also be a danger. The EIS claims that "most structures in good condition are not affected by sonic booms with a peak overpressure of less than 16 psf." (p. 3-34) However, in the past low-flying military aircraft have shattered glass doors and windows in Portal. Such damage has been reported in places including Tucson and the United Kingdom.⁶ My own house has glass sliding doors, large windows, glass skylights and a glass ceiling for a greenhouse. These might be shattered by the sonic boom from aircraft, exposing my family to the risk of injury from flying glass, weather and invasion by pests or trespassers.

(c) Fire

Alternative 2 allows the release of flares at 2,000 feet AGL. The EIS brushes aside the likelihood of fire resulting from such releases (p. 3-84; p. 3-17) but flares from an F-16 did cause a 12,000 acre fire in New Jersey.⁷ The Coronado National Forest, which extends into the expanded Tombstone MOA, is vulnerable to fires.

Alternative 4: Noise and Flares

This alternative can be met with the same objections as Alternative 2. The floor for subsonic flight over a "congested" area is 1,000 feet and, elsewhere, 500 feet; while for supersonic it is 10,000 feet. The single event impact of subsonic flight at these levels, with 103 dB at 1,000 feet, 120 dB at 500 feet or, in the case of supersonic flight, 82-90 dB at 10,000 feet would be severe.

⁶ <https://www.bbc.com/news/uk-england-28524705>

⁷ <http://www.nytimes.com/2007/05/16/nyregion/16fire.html>.

Comments on Draft EIS: Harold Farmer

Roofs afford little shelter from such noise and hiking trails none. As with Alternative 2, the Coronado National Forest and adjacent dwellings would be at risk of fire.

In light of all these impacts, and bearing in mind the need to give Portal "special consideration," I oppose Alternatives 2 and 4 and their expansion of the Tombstone MOA. Alternative 3 (which lowers flight floors but does not expand the MOA to include Portal) is preferable though far from ideal. It poses the risk that increased noise and fire, not to mention stray flights, would impinge upon the Portal area. Alternative 1 is the best solution for the entire Tombstone MOA.