

# **Navy Charade: Misuse of Noise Annoyance Threshold**

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In Judge Creatura's report on COER's motion for a summary judgment, the judge allowed Navy's use of a day-night noise level (DNL) of 65 dBA as the threshold for significant annoyance. The primary reason seemed to be because the courts traditionally give deference to an agency's choice of metrics. This report addresses why that decision was wrong.

## **1. The threshold for high annoyance has been misused by the Navy.**

The Court notes that "the use of a 65 dB threshold is 'well-established' and, hence, reasonable for the Navy to use." Yes, 65 DNL has been around a long time, but as applied by the Navy in its EIS, the use is neither reasonable nor justified but constitutes a misuse. Just because an agency applied a threshold once accepted as correct, is hardly reason to continue to use the same threshold now knowing it to be incorrect. In the face of new (2016) undeniable scientific analysis, the representation of 65 DNL as the threshold for significant noise impact is grossly inaccurate.

Nearly 40 years ago the acoustic and political community decided that about 13% of the population, if highly annoyed by noise, was a large enough proportion to establish that as the threshold for determining a *significant impact*. Those scientists further calculated from the best data at that time that the 13% threshold was crossed at 65 DNL. It was understood, then as now, that the correct DNL linked to 13% would change if scientific advances warranted.

Science has advanced since then, errors in the initial analyses were discovered, and related curves were updated, most significantly in 1992. Today the best science reveals that 13% of the population becomes highly annoyed at about 55 DNL, while at 65 DNL about 28% of the population is now known to be highly annoyed, or about 2 times the proportion assigned as significant (Fidell Analysis of DEIS, p 12). Nowhere in the EIS is there any claim that the significance level of 13% has been or should be changed, let alone to 28%. And that became a conundrum for the Navy: Use 65 DNL and obscure the reality that it is double the significance threshold, or use 55 DNL and admit to a drastically increased significant impact.

The Navy decided on the former: obscure the science and use 65 DNL [FEIS, p 3-32]. So, the EIS iteratively and misleadingly portrays 65 DNL as the annoyance threshold representing 13% of the population<sup>1</sup>, when the actual proportion is nearly double that. Nowhere does the EIS forthrightly address that fact:

DoD recommends land use controls beginning at the 65 dB DNL level. Research has indicated that about 87 percent of the population is not highly annoyed [13% annoyed] by outdoor sound levels below 65 dB DNL (FICUN [Federal Interagency Committee on Urban Noise], 1980)... Therefore, the 65 dB DNL contour is used to help determine compatibility of military aircraft operations with local land use, particularly for land use surrounding airfields, and is the lower threshold for this analysis. [FEIS, p 3-18]

## 2. There is no scientific debate over 55 DNL.

As noted by the Court, “it will not engage in a “battle of the experts” between plaintiffs and the Navy or to substitute the Court’s own judgment for that of the Navy regarding the appropriate threshold.” Fair enough. But, it cannot be overstated that there is no credible scientific debate over 55 DNL approximating the 13% significance threshold. The International Organization for Standardization’s (ISO) is composed of top scientist from over 160 nations worldwide, including the U.S. That is a pretty substantial and scholarly group for the military to refute. Those scientists agreed in 2016 (ISO 1996-1:2016) that FICON’s 1992 modified Schultz curve (the Navy’s choice for use) was seriously flawed, off two-fold. [Fidell Analysis of DEIS, page 6]

The United States is a member of ISO, participated actively in the analyses conducted to revise this standard, and subscribes fully and without exception to it...ISO’s 2016 dosage-response relationship is based on much more social survey information than was available in 1992, is specific to aircraft noise, and indicates that considerably greater percentages of the population are highly annoyed by aircraft noise than the 1992 ‘updated Schultz curve.’ [Fidell Analysis of DEIS, page 6]... At a DNL value of 65 dB, the FICON relationship underpredicts the prevalence of annoyance created by aircraft noise exposure by more than a factor of two. The now-superseded FICON relationship is plainly an incorrect and technically indefensible basis for any policy judgments purporting to define the significance of aircraft noise impacts. [Fidell Analysis of DEIS, page 8]

In fact, the Navy does not refute ISO. Nowhere in the EIS is there mention of any scientist raising issue with ISO 1996-1:2016. The EIS even shows the same curve (FEIS Figure A-9, page A.1-26) that Dr. Fidell presented (Fidell Analysis of DEIS, Figure 4, page 9), but does not expound beyond that. Instead,

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1 For example, FEIS Table 4.17-1 (page 4-484) examines “Noise Associated with Aircraft (**Significant noise impact** from proposed Growler operations at the NAS Whidbey Island complex)” and proceeds to examine the numbers of people within the 65 DNL contour. Also, on page 3-32: “Consistent with this guidance, 65 dB DNL is used to show areas with potential for high annoyance in this analysis.” Also on page 3-115: “Areas of significant noise exposure are those in which noise levels are 65 dB DNL or higher (FICUN, 1980).”

the EIS is entirely silent, perhaps because the Navy knew it could not discredit them. So, instead, it selected a strategy of obfuscation and muddling by droning on with page after page of outdated annoyance curve comparisons, obsolete 1980s and 1990s studies [FEIS, pages A1-21 to -25], an ongoing and as-yet unpublished FAA study, and lengthy discourse on other metrics related to examining annoyance, e.g., “*step-change and hyperacusis*” [FEIS, p A1-26 to 28] and “*community tolerance level ( $L_{ct}$ )*,” [FEIS, p A1-25]. None of those pages addressed the elephant in the room: the ISO 1996-1:2016 findings on 55 DNL. That tangled history, while it may have confused public understanding, does not undo or hide the scientific reality that 55 DNL equates to the accepted 13% significant impact threshold. As Dr. Fidell noted, “The dated boilerplate text of [FEIS] Appendix A.1 mis-states and mis-informs readers of the Navy’s EIS about the relationship between aircraft noise exposure and the prevalence of a consequential degree of aircraft noise-induced annoyance.” [Fidell Comments on FEIS, page 1]

Having wisely withdrawn from any outright disagreement with ISO 1996-1:2016, the Navy’s only remaining option for justification was to flag that the FAA uses 65 DNL and that, somehow, that establishes a fair-use precedence, presumably in perpetuity. As the Court notes, the Navy “acknowledged that public comments challenged the use of the 65 dB threshold (*see* GRR 150252–53) but ultimately concluded that it would use the 65 dB threshold, anyway, as that threshold was consistent with federal usage.” [Fidell Analysis of DEIS, page 1; FEIS page 3-25] While the FAA may be struggling with the legitimate complexities related to policy-level application of the 55-DNL significance threshold, FAA policy is not bound to follow the *best available science* constraints required for an EIS under NEPA. The Navy, however, is constrained. And, ISO 1996-1:2016 is the *best available science*.

### **3. Deference to agency choice of metric does not trump best available science.**

The Court concedes that “[A]gencies are permitted to determine a threshold of significance for noise impacts. *Save Strawberry Canyon v. U.S. Dep’t of Energy*, ’ 830 F. Supp. 2d 737, 749 (N.D. Cal. 2011).” That permission, however, does not provide liberty to portray a discredited and invalidated significance threshold (i.e., 65 DNL = 13%) as though it were actually valid. Nor does that permission afford the Navy the liberty to override NEPA requirements that agencies use the best available science, as opposed to inaccurate molded-over science, or whatever science best suits their interests. This did not slip past Dr. Fidell’s keen eye, who noted that the misinformation presented in the EIS “directly contradicts and makes a mockery of the Navy’s claim that ‘...*this EIS uses the best available science as required*

*under NEPA to develop an accurate analysis of potential noise impacts from the Proposed Action.’”*

[Fidell Comments on FEIS, page 2]

The Navy highlights the now-defunct 1992 “updated Schultz curve” as the preferred form in the U.S., and endorsed by FICAN (1997), and goes on to note, “Other forms have been proposed, such as that of Fidell and Silvati (2004), but these have not gained widespread acceptance.” [FEIS, p A1-23] That would have been a perfect segue to challenge the scientifically validated ISO 1996-1:2016 findings. Instead, the Navy shrinks away in silence, too intimidated to even mention the ISO conclusion, lumping it somehow in an “other” category and ignoring the concurrence of the 164 countries’ noise experts validating ISO 1996-1:2016 (Fidell Comments on FEIS, page 1] And the Navy masked that avoidance with its rambling technical discourse, presumably to discourage public comprehension of its charade.

#### **4. Conclusion**

The Navy’s reprehensible subterfuge is cleverly presented, but when unwrapped and exposed, it is fully consistent with the Court’s broad finding that “the Navy selected methods of evaluating the data that supported its goal of increasing Growler operations, [and]...did this at the expense of the public and the environment, turning a blind eye to data that would not support this intended result.” Just so, the Navy cannot be a science denier when that suits its interests and embrace science when it does. The Navy has indeed misrepresented, muddled, and withheld important information the public has a right to know, and as such, has failed to live up to its code of honor and integrity.