

Federal Interagency Committee on Aviation Noise (FICAN) FICAN Recommendation for use of ANSI Standard to Predict Awakenings from Aircraft Noise

December, 2008

In 1997, FICAN recommended a curve for predicting the maximum likelihood of behavioral awakening from a single aircraft noise event¹. That dose-response relationship has been applied in environmental noise studies since that time.

The American National Standards Institute (ANSI) recently published a standard for estimating the likelihood of behavioral awakenings in ANSI S12.9-2008, *Quantities and Procedures for Description and Measurement of Environmental Sound — Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes*². ANSI S12.9-2008 provides a method to predict sleep disturbance in terms of percent awakenings or numbers of people awakened associated with noise levels in terms of indoor A-weighted sound exposure level. In contrast to the earlier FICAN recommendation, the probability of awakening is less for a single noise event, but the Standard enables estimation of awakenings from an entire night of noise events. The Standard was developed from field studies of behavioral awakening primarily in homes near airports subject to routine jet aircraft operations. The database used in derivation of the method consists of about 10,000 subject-nights of observations in a variety of communities in the United States and Europe.

FICAN recommends the use of this new estimation procedure for future analyses of behavioral awakenings from aircraft noise. FICAN recognizes that additional sleep disturbance research is underway by various research organizations, and results of that work may result in additional changes to FICAN's position. Until that time, FICAN recommends the use of ANSI S12.9-2008.

ANSI S.12.9-2008 is available for purchase at: <http://webstore.ansi.org/>.

¹ Federal Interagency Committee on Aviation Noise, *Effects of Aviation Noise on Awakenings from Sleep*, June, 1997, accessed at: <http://www.fican.org/pages/findings.html> (December 4, 2008).

² ANSI S12.9-2008, *Quantities and Procedures for Description and Measurement of Environmental Sound — Part 6: Methods for Estimation of Awakenings Associated with Outdoor Noise Events Heard in Homes*, 2008.

