The FAR Part 150 Airport Noise Compatibility Planning Program

An Overview

Background

Federal Aviation Regulation, Part 150, Airport Noise Compatibility Planning, is the primary Federal regulation guiding and controlling planning for aviation noise compatibility on and around airports. Part 150 was issued as an interim regulation (46 FR 8316; January 19, 1981) under the authority of the Aviation Safety and Noise Abatement Act of 1979 [49 U.S.C. App. 2104(c)] (ASNA Act). Implementation of noise compatibility planning under the ASNA Act was delegated to the FAA. Part 150 established procedures, standards, and methodologies to be used by airport operators for the preparation of Airport Noise Exposure Maps (NEM's) and Airport Noise Compatibility Programs (NCP's) which they may submit to the FAA under Part 150 and the ASNA Act. The final rule was issued on January 18, 1985 (49 FR 49260) and, on March 16, 1988, was amended to include freestanding heliports (53 FR 8722). The rule has since had several conforming amendments, including one to conform to 14 CFR Part 161. The program has been quite active. One hundred and ninety two NCP's have been approved to date, and more than 230 are currently in the program. Over $1.9 billion has been provided to airports for noise mitigation, with the bulk of these dollars implementing Part 150 NCP'S.

The FAA believes that the Part 150 process is a balanced approach for mitigating the noise impacts of airports upon their neighbors while protecting or increasing both airport access and capacity as well as maintaining the efficiency of the national aviation system. Part 150 provides for the following:

- Establishes standard noise methodologies and units.
- Establishes the Integrated Noise Model (INM) as the standard noise modeling methodology.
- Identifies the land uses which normally are compatible or noncompatible with various levels of airport noise.
- Provides for voluntary development of NEM's and NCP's by airport operators.
- Provides for review of NEM's to insure compliance with the Part 150 regulations.
- Provides for review and approval or disapproval of Part 150 NCP's submitted to the FAA by airport operators.
- Establishes procedures and criteria for making projects eligible for funding as noise projects through the Airport Improvement Program (AIP).

The regulations contained in Part 150 are voluntary and airport operators are not required to participate. However, an approved Part 150 NCP is the primary vehicle for gaining approval of applications for Federal grants for noise abatement projects, and provides the required analyses for evaluating the impacts of any proposed constraints upon an airport's operations. The Part 150 program responds to the principles set forth in the Aviation Noise Abatement Policy Statement of 1976, as well as to the requirements of the ASNA Act.

Noise Methodologies and Metrics

The ASNA Act requires the FAA to designate two noise metrics: a single system for measuring aviation noise in the community; and a single system for determining the exposure of individuals to noise resulting from the operation of an airport:

- The system for measuring aviation noise in the community required a demonstrated relationship between projected noise exposure and the surveyed reactions of people to noise. For these purposes, the A-weighted sound level and its derivatives were selected.
- The system for determining the exposure of individuals to airport noise (i.e., for evaluating the cumulative impacts of multiple noise events) required consolidation of the effects of intensity, duration, frequency, and time of occurrence. The metric selected is the yearly day-night average sound level (DNL or Ldn, the scientific notation), which was derived from the A-weighted sound level.

The Integrated Noise Model

A standard noise forecasting methodology is required to assure uniformity and comparability of the NEM's submitted under the program. The FAA Integrated Noise Model (INM) has been adopted as the program's standard noise modeling methodology. The FAA believes that this is a well proven model and has refined the model to its fifth generation. The INM is available for use on microcomputers, as well as on mainframe computers, thus reducing the costs of running noise contours and permitting more alternatives to be explored in developing NCP'S. For freestanding heliports, the Heliport Noise Model (HNM) is used.

Land Use and Noise Compatibility

A standard table of land uses normally compatible, or noncompatible, with various exposures of individuals to airport-related noise is essential to assure uniform treatment of both airport operations and noise-sensitive land uses or activities. Part 150's Table 1, entitled "Land Use Compatibility With Yearly Day-Night Average Sound Levels," provides a standard reference for land uses compatible with various levels of airport noise, and contains the basic criteria used in preparing Part 150 programs. This is the only noise and land use compatibility table currently in the Code of Federal Regulations.

Noise Exposure Map

The Part 150 Noise Exposure Map (NEM) is designed to identify clearly an airport's present and future noise patterns and the land uses which are not compatible with those noise patterns. When reviewed and found in compliance with applicable rules and regulations, an airport's NEM serves as a standard reference to the airport's existing and future noise impacts for anyone proposing noise sensitive development in the vicinity of the airport. An NEM consists of two maps of the airport with noise contours plotted over land uses, plus supporting documentation. The noise contours for the DNL 65, 70, and 75 noise levels are shown on these maps. The first map indicates the current conditions and, in effect, identifies the airport's noise compatibility problems. The second map projects the noise contours which can reasonably be predicted five years in the future taking into account changes in land use and in airport operations, plus any

improvements in compatibility from noise mitigation actions which may be planned for that five-year period. An NEM is prepared in consultation with airport's users, the public, local governments, land use control agencies, and the FAA.

Noise Compatibility Program

The purpose of the Part 150 Noise Compatibility Program (NCP) for an airport is to show what measures the airport operator has taken or proposes to take to reduce noncompatible land uses and for preventing the introduction of additional noncompatible uses within the area covered by the airport's NEM. The NCP serves as the primary vehicle for guiding and coordinating the efforts and actions of all the agencies and individuals whose combined efforts are essential to achieving the maximum degree of noise compatibility between an airport and its neighbors while taking into account the requirements of the national aviation system.

The NCP is also the primary analytical tool for appraising the possible impact of any proposed airport operational constraints on interstate or foreign commerce.

Developing a Part 150 NCP is a multi-step process. It must be carried out in close consultation with the affected local governments, the airport's users, those people impacted by either the noise or the solutions, and the FAA. The airport's NEM is a basic element of the NCP. It gives a clear indication of the nature of the airport's noise problems. Also, the FAA cannot accept an airport's NCP for review until its NEM has been found to be in compliance with all applicable laws and regulations.

A series of alternative measures, or combinations of measures, to mitigate an airport's noise impact is developed by the airport operator. These measures must be reasonably consistent with achieving the goals of reducing, or mitigating the impact on, existing noncompatible land uses around the airport and of preventing the introduction of additional noncompatible land uses. Consideration of the environmental consequences of the proposed noise compatibility actions should be an integral part of this planning process; however, formal environmental assessment is required only in conjunction with the decision to implement an action. Alternatives must not unduly burden interstate commerce, discriminate unjustly, reduce the level of aviation safety, adversely affect efficient use of the navigable airspace, or adversely affect any other powers or responsibilities of the Administrator of the FAA.

Each NCP must include an agreed upon schedule for implementation of the program, including: the period covered by the program; identification of the entity responsible for implementing each of its proposed noise compatibility action; plus identification and sources of the necessary funds. These are intended to be working programs. Finally, the NCP must include specific provision for its own timely revision so that it remains a live and viable program responding to changes in both the aviation and the local environmental components of the plan.

FAA Approval of NCP's

Noise Compatibility Programs submitted by airport operators to the FAA and accepted for Federal review, must be acted upon by the FAA within 180 days or, with the exception of flight procedures, the NCP's mitigation measures are, by statute, automatically approved. Additionally, FAA

has issued a policy which limits approval of remedial mitigation measures, e.g., soundproofing, to noncompatible land uses that were in place as of October 1, 1998. Approval of measures to address proposed new noncompatible development will be limited to preventive measures, such as zoning, subdivision regulation, building codes, and similar land use and/or building controls. This policy effectively limits Federal funding for noise compatibility measures in a similar way when Part 150 approval is a prerequisite for funding. The objective is to strongly encourage preventative actions where there are currently no noncompatible land uses and to limit remedial actions and dollars to those uses which are already noise impacted. Note that 14 CFR Part 161 severely limits the use of restrictions on airport operations for noise purposes.

Federal Funding

Implementation of NCP's depends on two basic things: (1) Enactment and implementation of the local noise compatibility actions, including land use controls, building codes, and disclosure of the noise impact areas to potential residents; and (2) the provision of the funds necessary to carry out the planning, acquisitions, relocations, and construction involved.

The Airport and Airway Safety and Capacity Expansion Act of 1987, and subsequent legislation, provide for continued funding of noise compatibility planning and implementation through 34 percent of

Airport Improvement Program (AIP) discretionary funds. This Federal funding is provided in the form of matching grants obtained from the Aviation Trust Fund, providing a 75 percent to 90 percent Federal share, dependent upon the emplanement level and size of the airport. The Aviation Trust Fund is sustained by an ad valorem plus flight segment tax on tickets, by other taxes on air cargo, and by taxes on fuel and other expendables, such as tires, used by general aviation. Thus, the monetary cost of the program is largely paid for by those who benefit from aviation services. Total Federal grant funds for implementation of Part 150 NCP's through fiscal year 1999 were approximately $2,501,546,814.

Additional Information

For additional information on the Part 150 Program contact your nearest FAA District Office, the Airports Division of your FAA Regional Office, or FAA's Office of Environment and Energy, Noise Division at 202-267-8933, Fax 202-267-5594.