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AIRPORT NOISE POLLUTION: IS THERE A SOLUTION IN SIGHT?

*Kristin L. Falzone**

Airport noise pollution is a widespread and growing problem in the United States. Traditionally the regulation of airport noise was left to state and local regulatory efforts as well as judicial actions brought under nuisance and inverse condemnation theories of liability. With the enactment of several pieces of federal legislation beginning in the 1970s, however, Congress has clarified its intent to preempt local control of airport noise. Local governments and airport proprietors have to comply with a complicated scheme of federal regulation and rely on insufficient funds to fully address the airport noise problem in their communities. This Comment suggests changes should be made to the regulatory framework governing the control of aircraft noise through reestablishment of the Office for Noise Abatement and Control within the Environmental Protection Agency, additional funds for noise mitigation projects, and research on the effects of aircraft noise, as well as a shift in the liability structure for noise violations.

The Congress declares that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare.

—*Noise Control Act of 1972, 42 U.S.C. § 4901(b)*

INTRODUCTION

Since the introduction of commercial jets in 1958, the noise problem generated from airport operation has become increasingly widespread, affecting millions of Americans.¹ For some, the noise emitted from aircraft is merely an unwanted nuisance that intrudes on their

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¹ See Donald F. Anthrop, *The Noise Crisis*, in NOISE POLLUTION AND THE LAW 3, 14 (James L. Hildebrand ed., 1970).

everyday life. For others, however, aircraft noise is a factor that has been found to cause psychological and physiological damage to health and well-being.²

In spite of the population's widespread exposure to harm, the United States Congress did not pass a federal act exclusively designed to control noise until 1972.³ Prior to the enactment of the Noise Control Act, inverse condemnation actions, common law nuisance remedies, and sporadic attention by some states were the only constraints on increasing levels of airport noise.⁴ Historically, the private citizen has been able to get little compensation for the proliferation of aircraft noise.⁵ Landuse planning and other noise abatement activities fall within the jurisdiction of local governments, yet these approaches are often very expensive and somewhat ineffective because they aim to ameliorate noise rather than control it at its source.⁶ In addition, U.S. courts have held that insofar as the operation of aircraft is concerned, the federal government has preempted the field; thus, communities afflicted by aircraft noise have no power to regulate the noise at its source.⁷

Currently, the Federal Aviation Administration (FAA) has sole responsibility for the regulation of civil aircraft operations.⁸ In recent years, many commentators have criticized the FAA for being "a good deal more interested in promoting aviation than in protecting the public welfare."⁹ In response to growing criticism of the current regulatory scheme in recent years, members of Congress have introduced bills to address the persistent and increasing noise problem generated by the nation's airports.¹⁰ For instance, in 1997, members in both the House of Representatives and the Senate proposed the Quiet Communities Act.¹¹ This Act would have reestablished the Office of

² See *infra* notes 31-35 and accompanying text.

³ See Noise Control Act of 1972, 42 U.S.C. §§4901-4918 (1994); see also 2 JOHN HENRY DAVIDSON & ORLANDO E. DELOGU, *FEDERAL ENVIRONMENTAL REGULATION* 7-1 (1994). In 1970 Congress did adopt Title IV of the Clean Air Act authorizing EPA to study the noise problem and report to Congress their findings along with recommendations for legislation. See 42 U.S.C. § 7641; DAVIDSON & DELOGU, *supra* this note, at 7-1 n.2.

⁴ See *infra* Part II.

⁵ See Anthrop, *supra* note 1, at 15.

⁶ See *infra* Part V.

⁷ See *infra* Part IV.

⁸ See 49 U.S.C. § 40103 (1994).

⁹ See, e.g., Anthrop, *supra* note 1, at 15.

¹⁰ See, e.g., S. 951, 105th Cong. (1997); H.R. 536, 105th Cong. (1997); H.R. 1971, 104th Cong. (1995).

¹¹ See S. 951, 105th Cong. (1997); H.R. 536, 105th Cong. (1997).

Noise and Abatement Control (ONAC) within the Environmental Protection Agency (EPA).¹² ONAC would have been responsible for coordinating federal noise abatement activities, updating or developing noise standards, providing technical assistance to local communities, and promoting research and education.¹³ Both bills, however, were referred to committee and subsequently died in Congress.¹⁴

As the number of Americans affected by noise pollution increases, citizens disturbed by aircraft noise have begun to be one of the most vocal groups speaking out against noise.¹⁵ Such outcry may be responsible for the creation of the Federal Interagency Committee on Aviation Noise (FICAN), founded in 1993.¹⁶ FICAN brings together representatives of various federal agencies that are involved in research on aviation-related noise.¹⁷ FICAN, however, does not itself conduct research or have regulatory or enforcement powers.¹⁸ Instead, FICAN is limited to conducting conferences, serving as a clearinghouse for research, distributing technical information, and making recommendations.¹⁹ FICAN's lack of power has left citizen groups more frustrated than ever before.²⁰

This Comment assesses the legal framework regulating noise pollution generated by the operation of airports. Part I introduces the concept of noise pollution and provides a background on airport noise pollution in particular. Traditional ways of controlling noise, such as state and local noise ordinances and nuisance and inverse condemnation claims are briefly examined in Part II. Part III discusses the history of major federal legislation and regulations aimed at control-

¹² See *id.*

¹³ See *id.*

¹⁴ In the Senate, the proponents of the Quiet Communities Act attempted to incorporate the Act into Senate Bill 2279, the annual "housekeeping" bill for the FAA. See U.S. Congress, *Bill Summary—Status for the 105th Congress* (visited Feb. 8, 1999) <<http://thomas.loc.gov/home/bdquery.html>>. However, the Amendment (No. 3627) was defeated by a vote of 69–27 to table the amendment indefinitely. See *id.*

¹⁵ See Arline L. Bronzaft, *A Voice to End the Government's Silence on Noise*, 23 HEARING REHABILITATION Q. (1998) (visited Oct. 2, 1998) <<http://www.lhh.org/hrq/23-1/voice.html>>.

¹⁶ See *id.*

¹⁷ See *id.* The Department of Defense (DOD), the FAA, and the National Aeronautics and Space Administration are the primary agencies responsible for addressing aviation noise impacts through general research and development actions. See Federal Interagency Committee on Noise, *Letter of Understanding* (1993) (visited Feb. 21, 1999) <<http://www.fican.org>>. Other agencies, including EPA, have "mission requirements that require cognizance of aviation noise R&D products." *Id.*

¹⁸ See generally Bronzaft, *supra* note 15.

¹⁹ See *id.*

²⁰ See *id.*

ling noise pollution. Part IV describes how the doctrine of preemption relates to noise pollution. A variety of noise abatement activities and their limitations with regard to aircraft noise pollution are explored in Part V. Finally, Part VI argues that with the current mix of federal and local efforts, there is a need for an alternative means of controlling airport noise pollution other than that offered by the FAA alone.

I. NOISE POLLUTION

Noise is often described as unwanted sound.²¹ Sound is the result of small periodic variations in normal atmospheric air pressure, caused by vibration or turbulence.²² The effects of noise are primarily determined by its duration and level, but are also influenced by a sound's frequency.²³ A sound's level, measured in decibels (dB), is the amplitude of the pressure changes occurring.²⁴

Noise is measured by basic sound level meters.²⁵ Most sound level meters use built-in frequency filters or "weighting networks" in the measurement process.²⁶ "A" weighting approximates the equal-loudness response of the ear at moderate sound levels, and correlates with both hearing damage and annoyance from noise.²⁷ Composite measures of noise such as the Equivalent Continuous Sound Level (Leq) and the Day-Night Average Sound Level (DNL) have been used extensively to assess the impact of aircraft noise.²⁸ These levels constitute sound energy averages over given periods of time.²⁹

²¹ See Anthrop, *supra* note 1, at 5; ALICE H. SUTER, NOISE AND ITS EFFECTS 3 (Nov. 1991) (report prepared for the Administrative Conference of the United States).

²² See Anthrop, *supra* note 1, at 5; SUTER, *supra* note 21, at 3.

²³ See SUTER, *supra* note 21, at 3.

²⁴ See *id.* Decibels are logarithmic rather than linear measures of sound and thus a small increase in decibels can represent a large increase in sound energy. See *id.*; DAVID P. CURRIE, POLLUTION: CASES AND MATERIALS 23 (1975). For example, a noise pressure level of 130 dB is ten times greater than one of 120 dB and 100 times as great as a noise pressure of 110 dB. See CURRIE, *supra* this note, at 23.

²⁵ See SUTER, *supra* note 21, at 3.

²⁶ See *id.*

²⁷ See *id.* at 3-4.

²⁸ See *id.* at 4. The DNL incorporates a 10 dB nighttime penalty from 10:00 p.m. to 7:00 a.m., meaning that events occurring during that time are counted as 10 dB higher than they really are. See *id.* A variant of the DNL used in California is the community noise equivalent level (CNEL), which incorporates a five dB penalty for evening noise events, as well as the ten dB nighttime penalty. See *id.* The DNL and Leq measures have recently been criticized as inadequate indicators for gauging noise pollution. See *id.* The sound exposure level (SEL), an event's sound level normalized to one second, is gaining popularity as a supplement to the DNL and the Leq for characterizing single events. See *id.*

²⁹ See *id.* Because they use averaging, the metrics fail to describe the disturbance arising from

Because the effects of noise as an environmental intrusion are often transitory and seldom catastrophic, noise is often thought to be a less significant harm than air or water pollutants.³⁰ Like other environmental problems, however, aircraft noise affects millions of people each day, producing a number of short-term and long-term adverse effects.³¹ Research indicates that excessive noise can cause significant health problems, such as hearing loss, hypertension, cardiovascular disease, gastrointestinal problems, and other disorders.³² In addition, noise may cause interference with communication, sleep deprivation, poor performance at work and in school due to lack of concentration, and general annoyance.³³ It is estimated that more than ten million Americans suffer from noise-induced hearing loss and twenty million are exposed to potentially damaging noise levels.³⁴ Researchers argue that chronic exposure to noise is harmful to human health, causing damage which occurs even in the absence of detectable hearing loss.³⁵

Noise is generated from a large number of sources, a number that dramatically increased in the United States following World War II.³⁶ Increased mechanization, urbanization, and population produced higher noise levels.³⁷ In addition, transportation systems such as subways, air terminals, and interstate highways tend to be sources of concentrated noise-generating equipment and activity.³⁸ The increase

single events, especially low-flying aircraft, unexpected or newly occurring flights, or flights occurring in areas where quiet is a premium. *See id.*

³⁰ See DAVIDSON & DELOGU, *supra* note 3, at 7-1; SUTER, *supra* note 21, at 1.

³¹ See NATIONAL RESOURCE DEFENSE COUNCIL, *FLYING OFF COURSE: ENVIRONMENTAL IMPACTS OF AMERICA'S AIRPORTS* (Oct. 1996) (visited Feb. 28, 1999) <<http://mail.igc.apc.org/nrdc/nrdcpro/foc/airinx.html>> [hereinafter NRDC].

³² *See id.*; SUTER, *supra* note 21, at 15, 20-21, 24-25; Sidney A. Shapiro, *Lessons From A Public Policy Failure: EPA and Noise Abatement*, 19 *ECOLOGY L.Q.* 1, 5 (1992). *See generally* D. DENNIS HANSEN & LEE A. SANDERS, HEALTH SUBCOMMITTEE OF THE ENVIRONMENTAL IMPACT COMMITTEE OF THE REGIONAL COALITION OF AIRPORT AFFAIRS, *THE ADVERSE HEALTH IMPACTS OF AIRPORT EXPANSION WITH PARTICULAR REFERENCE TO SEA-TAC INTERNATIONAL AIRPORT* (May 5, 1992).

³³ *See* SUTER, *supra* note 21, at 22. *See generally* NRDC, *supra* note 31; HANSEN & SANDERS, *supra* note 32. Disturbance of sleep is probably the most widespread source of distress caused by noise. *See generally* HANSEN & SANDERS, *supra* note 32. The indoor threshold for falling asleep is 35 to 40 dBA. *See id.* In addition, researchers recommend that nighttime noise levels not exceed 35 dBA. *See id.*

³⁴ *See* Michael McCabe, *Anti-Noise Crusaders Get Louder and Louder*, S.F. *CHRON.*, Feb. 19, 1998, at A1.

³⁵ *See* Sandra G. Boodman, *Airport Noise Linked to Subtle Signs of Stress*, WASH. *POST*, Feb. 17, 1998, at Z05.

³⁶ *See* DAVIDSON & DELOGU, *supra* note 3, at 7-2.

³⁷ *See id.* at 7-1.

³⁸ *See id.* at 7-2.

in and concentration of noise sources often produces unacceptably high levels of noise—noise which has a durational characteristic that further compounds the harm.³⁹ A 1991 report to the Administrative Conference of the United States (ACUS) explained that:

noise levels are directly related to population density, and the urban population is increasing at twice the pace of the nonurban population The fact that some of these sources have been and continue to be quieted (especially new generations of trucks and aircraft) should mitigate this increase, but the extent of this mitigation will remain unknown⁴⁰

Air traffic in particular appears to be increasing more rapidly than the U.S. population.⁴¹ Some argue that as a result of the increase in air traffic, overall noise levels generated from aircraft have increased as well.⁴² For example, from 1985 to 1995, the total number of aircraft passengers using the fifty largest airports in the United States increased forty-eight percent.⁴³ Each day, over 30,000 flights are completed within the United States, and it is projected that air traffic will double in the next fifteen to twenty years, making the current problems of aircraft noise even more critical.⁴⁴

As the demand for air transportation has increased, along with the overall number of flights, flight corridors to and from airports have become congested.⁴⁵ In response, the FAA has sought to increase the number of routes to enhance system capacity.⁴⁶ These changes have created noise over previously quiet neighborhoods, thus affecting a larger number of residents.⁴⁷ These residents have in turn lodged noise complaints.⁴⁸

³⁹ See *id.*

⁴⁰ SUTER, *supra* note 21, at 11.

⁴¹ See *id.* at 7; see also Shapiro, *supra* note 32, at 4.

⁴² See SUTER, *supra* note 21, at 7; see also Shapiro, *supra* note 32, at 4.

⁴³ See UNITED STATES DEPARTMENT OF TRANSPORTATION, BUREAU OF TRANSPORTATION STATISTICS, NATIONAL TRANSPORTATION STATISTICS (1996) <<http://www.nonoise.org/library/air/number.htm> (visited Feb. 1, 1998) [hereinafter DOT]. Total number of enplaned passengers was 296,740,731 in 1985 and 438,543,552 in 1995, an increase of 47.79%. See *id.* Determination of the fifty largest airports was based on the total number of passengers utilizing the airport. See *id.*

⁴⁴ See *Technology to Reduce Aircraft Noise: Hearings Before the Subcomm. on Technology of the House Comm. on Science*, 105th Cong. 1 (1997) (statement of Constance A. Morella, Chairwoman) [hereinafter Morella].

⁴⁵ See Lyn Loyd Creswell, *Airport Policy in the United States: The Need for Accountability, Planning, and Leadership*, 19 *TRANSP. L.J.* 1, 10 (1990).

⁴⁶ See *id.*

⁴⁷ See *id.*

⁴⁸ See *id.*

High DNL readings caused by aircraft noise have been reported consistently around United States airports.⁴⁹ For example, in 1997, 31% to 53% of noise monitoring stations located near National Airport and Dulles Airport in Washington, D.C., reported DNL readings greater than 65 dB, the current standard approved by the FAA.⁵⁰ Citizens of Reston, Virginia, affected by Dulles Airport, which has no nighttime flight restrictions, live in an environment of noise that remains constant at about 70 DNL.⁵¹ The citizens near Denver International Airport report that their ambient noise level is 20 dBA, yet the noise level rises to 77 dBA when aircraft pass over, as far as fifty miles from the airport.⁵² At Chicago's O'Hare International Airport, which is surrounded by residential communities, eighty-seven percent of the noise monitoring stations report readings over 65 dB with several locations at 80 dB.⁵³

II. TRADITIONAL MEANS OF CONTROLLING AIRPORT NOISE POLLUTION

Under existing law, property owners may seek damages for noise injury under two general causes of action: nuisance or inverse condemnation.⁵⁴ In general, these judicial means of controlling airport noise are retrospective, aimed at ameliorating noise rather than preventing it.⁵⁵ In addition to judicial measures, state and local governments have implemented varying statutes and ordinances designed to alleviate noise pollution.⁵⁶ Understanding the historical regulation of noise is necessary to analyze the current scheme of federal control over airport noise pollution.

⁴⁹ See *Technology to Reduce Aircraft Noise: Hearings Before the Subcomm. on Technology of the House Comm. on Science*, 105th Cong. 55-56 (1997) (statement of Donald W. MacGlashan, Citizens for the Abatement of Aircraft Noise, Inc.) [hereinafter MacGlashan].

⁵⁰ See *id.* at 55. Although the FAA has adopted 65 dB, EPA has set 55 dB as the requisite level to protect against interference with outdoor activities, 45 dB for indoor activities, and 70 dB to protect against hearing loss. See SHAPIRO, *supra* note 32, at 4 n.18. As an example of noise levels, rustling leaves are 20 dB, a two-person conversation is 50 dB, average street noise is 70 dB, and a riveter creates 110 dB. See *id.* at 4 n.17.

⁵¹ See MacGlashan, *supra* note 49, at 56.

⁵² See *id.*

⁵³ See *id.*

⁵⁴ See discussion *infra* Part II.A-B.

⁵⁵ See discussion *infra* Part II.A-B.

⁵⁶ See discussion *infra* Part II.C.

A. Nuisance

Nuisance has been defined as "the substantial and unreasonable interference with the use and enjoyment of land."⁵⁷ Nuisance liability is based on an ancient common law concept that one should not use one's land so as to injure the property of another, expressed in the Latin phrase, "*Sic utere tuo ut alienum non laedas.*"⁵⁸ Although airports are not per se nuisances, they may become nuisances by reason of their construction, operation, or location.⁵⁹ Even though aircraft flights may not directly pass over a landowner's property, flights may still constitute nuisances because of the unreasonable noise they create.⁶⁰

Whether a court finds that noise generated from airport operations constitutes a nuisance often depends on whether the noise is incident to the ordinary and necessary use of the airport or the result of the improper and negligent operation of an airport.⁶¹ Depending on a court's analysis of factors such as excessive noise, vibration, frequency of overflights, altitude of aircraft, and the time of day flights are made, interference with the use and enjoyment of property may or may not be sufficient to establish liability for nuisance.⁶² Many courts also balance what they call the "equities and conveniences."⁶³ These include the social utility of aviation, the legitimacy of aviation as a business, the distance of the airport from the owner's property, and the overall impact of the noise on the property owner.⁶⁴ If the court determines airport noise to be a nuisance, its determination of the appropriate remedy is based on these same equities and considerations.⁶⁵ Courts typically refuse to grant injunctions restricting airport

⁵⁷ Jack L. Litwin, Annotation, *Airport Operations or Flight of Aircraft as Nuisance*, 79 A.L.R. 3d 253, 259 (1977).

⁵⁸ 8 THOMPSON ON REAL PROPERTY, THOMAS EDITION 92 (David A. Thomas ed., 1994).

⁵⁹ See Litwin, *supra* note 57, at 259, 264-65 (citing Warren Tp. School Dist. v. Detroit, 14 N.W.2d 134 (1944); Vanderslice v. Shaw, 27 A.2d 87 (1942)).

⁶⁰ See *id.* at 260.

⁶¹ See *id.* (citing Delta Air Corp. v. Kersey, 20 S.E.2d 245 (1942); Thrasher v. Atlanta, 173 S.E. 817 (1934)).

⁶² See Litwin, *supra* note 57, at 260 (citing Greater Westchester Homeowners Assoc. v. Los Angeles, 603 P.2d 1329 (Cal. 1979); Delta Air Corp., 20 S.E.2d at 245).

⁶³ Litwin, *supra* note 57, at 260.

⁶⁴ See *id.* at 260-61; see also James M. Kramon, *Noise Control: Traditional Remedies and a Proposal for Federal Action*, in NOISE POLLUTION AND THE LAW 77, 84 (James L. Hildebrand ed., 1970).

⁶⁵ See Litwin, *supra* note 57, at 261.

operations.⁶⁶ Instead, courts opt for damages or limited injunctive remedies which allow airports to continue operations with changes to mitigate the nuisance.⁶⁷ A Georgia Court of Appeals emphasized the policy behind state nuisance remedies, declaring that a proprietor of an airport should bear its rightful share of legal liability for damages resulting from its airport.⁶⁸

B. *Inverse Condemnation*

Another traditional means of addressing aircraft noise pollution is judicial action based on the Fifth Amendment of the U.S. Constitution, which requires compensation for the "taking" of private property.⁶⁹ The Amendment provides: "nor shall private property be taken for public use, without just compensation."⁷⁰ This constitutional guarantee also applies to state action through the Fourteenth Amendment.⁷¹ In addition, nearly all state constitutions have similar provisions regarding takings.⁷² Those states without explicit provisions find an implicit prohibition against uncompensated takings in their constitutions.⁷³ Thus, both federal and state courts generally recognize a cause of action to remedy an uncompensated governmental taking.⁷⁴

A landowner has an implied cause of action known as inverse condemnation when a government actor violates the takings provision of the Fifth Amendment.⁷⁵ According to the U.S. Supreme Court, inverse condemnation is a "cause of action against a governmental

⁶⁶ See *id.*

⁶⁷ See *id.* Many courts have held that where an activity is beneficial to the community as a whole, and the property owner's burden is no more severe than that imposed on the community in general, there can be either no remedy or a remedy limited to damages. See Kramon, *supra* note 64, at 84. Damages obtained in a nuisance action may be the loss of the rental or use value of property, or the value of any personal discomfort, inconvenience or injury to health. See Litwin, *supra* note 57, at 262.

⁶⁸ See *Owen v. City of Atlanta*, 277 S.E.2d 338, 340 (1981).

⁶⁹ See U.S. CONST. amend. V.

⁷⁰ *Id.*

⁷¹ See *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 122 (1978).

⁷² See Keith W. Brickleymer & David Smolker, *Inverse Condemnation*, in CURRENT CONDEMNATION LAW 54, 54 (Alan T. Ackerman, ed. 1994); WILLIAM B. STOEBUCK, NONTRESPASSORY TAKINGS IN EMINENT DOMAIN 5 (1977). While virtually all states prohibit the "taking" of property, many states prohibit the "damaging" of public property without just compensation as well. See STOEBUCK, *supra* this note, at 5.

⁷³ See Brickleymer & Smolker, *supra* note 72, at 54.

⁷⁴ See *supra* notes 69-73 and accompanying text. Governmental takings include federal, state and local governments as well as their administrative agencies.

⁷⁵ See *United States v. Clarke*, 445 U.S. 253, 257 (1980).

defendant to recover the value of property which has been taken in fact by the governmental defendant, even though no formal exercise of the power of eminent domain has been attempted by the taking agency.⁷⁶

Takings claims are analyzed differently depending on whether they involve a physical taking or a regulatory taking.⁷⁷ Actual physical takings of property constitute the most obvious types of governmental action that support claims of inverse condemnation.⁷⁸ When the government authorizes either a continuing process of physical events or an isolated event or activity that denies an owner of the use and enjoyment of his or her property, a taking occurs and the owner is entitled to compensation.⁷⁹

The first major judicial treatment of the doctrine of physical invasion as it relates to aircraft noise pollution occurred in 1946 in *United States v. Causby*.⁸⁰ In *Causby*, the U.S. Supreme Court held that frequent and low flights by airplanes over private land that cause direct and immediate interference with the property owner's use and enjoyment of land are akin to physical takings.⁸¹ *Causby* involved damage to a property owner's chicken farming business and his personal health due to noise and bright lights from frequent and regular low altitude flights of military aircraft over his land.⁸² The Court held that the damages sustained by the property owner were a product of a direct, rather than consequential, invasion of his domain, and thus constituted a taking in violation of the Fifth Amendment.⁸³ Since *Causby*, plaintiffs have utilized inverse condemnation frequently to obtain redress for diminution in property values caused by aircraft noise.⁸⁴

In allocating damages in inverse condemnation suits, the U.S. Supreme Court determined that airport proprietors are liable for any excessive noise generated by aircraft utilizing their airports.⁸⁵ In

⁷⁶ *Id.* at 257.

⁷⁷ See *Penn Cent. Transp. Co. v. New York City*, 438 U.S. 104, 124 (1978); *Brown v. United States*, 73 F.3d 1100, 1102 (Fed. Cir. 1996).

⁷⁸ See *Bricklemeyer & Smolker*, *supra* note 72, at 59.

⁷⁹ See *id.* (citing *Kimball Laundry v. United States*, 338 U.S. 1 (1949); *United States v. Dickinson*, 331 U.S. 745 (1947)).

⁸⁰ 328 U.S. 256 (1946).

⁸¹ See *id.* at 267.

⁸² See *id.* at 259.

⁸³ See *id.* at 265-66.

⁸⁴ See James D. Hill, *Liability for Aircraft Noise: The Aftermath of Causby and Griggs*, in *NOISE POLLUTION AND THE LAW* 149, 168 (James L. Hildebrand ed., 1970).

⁸⁵ See *Griggs v. Allegheny County*, 369 U.S. 84, 89-90 (1962). Although aircraft noise may

Griggs v. Allegheny County, the Supreme Court held the County of Allegheny, proprietor of the Greater Pittsburgh Airport, liable for an unconstitutional taking of plaintiffs' property.⁸⁶ The Court held that the noise and vibration caused by the low, frequent overhead flights constituted a compensable taking of property by inverse condemnation.⁸⁷ According to the Court, the local authority was liable because it decided where the airport was built, what runways were needed, the direction and length of the runways, and what land and navigation easements were necessary.⁸⁸ In addition, the local authority held status as promoter, lessor, and operator of the airport.⁸⁹ Although the federal government approved the plans for the airport and established federal regulations concerning airport construction, the Supreme Court held that the "Federal Government [has] take[n] nothing."⁹⁰ Similarly, the Court decided that the airlines utilizing the airport were not responsible for damages due the plaintiffs as the airlines were simply complying with the rules and regulations of the Civil Aeronautics Administration.⁹¹

Liability for damages stemming from noise pollution is placed on airport proprietors, yet responsibility for noise abatement resides among federal, state, and local governments, air carriers, and airport proprietors.⁹² This "single liability/shared responsibility" situation has been criticized because it "promotes, rather than discourages, confusion."⁹³ Therefore, the airport proprietor is often left alone to mitigate noise, negotiate with or educate local landowners, or pay for the increased costs associated with the spillover effects of aviation activity.⁹⁴

constitute a taking of property due to governmental authorization and regulation of air travel, the Supreme Court rejected arguments that the federal government should be liable for damages caused by aircraft noise. See *infra* notes 86-91 and accompanying text.

⁸⁶ 369 U.S. at 89-90.

⁸⁷ See *id.* at 87, 89.

⁸⁸ See *id.* at 89.

⁸⁹ See *id.*

⁹⁰ *Id.*

⁹¹ See *Griggs*, 369 U.S. at 89.

⁹² See *Creswell*, *supra* note 45, at 30.

⁹³ *Id.*

⁹⁴ See *id.* at 31.

C. State and Local Noise Ordinances

Historically, public regulation of noise was based on the enforcement of local anti-noise legislation and ordinances.⁹⁵ Because of the difficulty in setting objective standards, most noise ordinances prohibit "unreasonable" or "unusual" noise.⁹⁶ Due to their subjective nature, ordinances utilizing this language are difficult to enforce.⁹⁷ Once portable noise measuring equipment became available, however, state and local governments began promulgating objective emission standards.⁹⁸ For example, the Noise Ordinance for Boston, Massachusetts, prohibits "any unreasonable or excessive noise in the city."⁹⁹ Yet the ordinance further defines "unreasonable or excessive" utilizing a maximum decibel standard and, in the absence of an applicable noise level standard, a distance standard.¹⁰⁰ Aircraft overflights, like many other sources of noise, are extremely loud and disruptive yet do not last long enough to violate a maximum decibel standard.¹⁰¹

Airport proprietors, whether municipal entities or private owners, responded to the significant increase in airport noise complaints by imposing restrictions on the use of airports.¹⁰² In general, restricting use rather than reducing or eliminating aircraft noise tends to be more politically expedient and cost effective.¹⁰³ Local noise control measures often include curfews which limit the hours of operation, noise limitations, preferential runways, limitations on the types of aircraft allowed to use the airport, and flight path modifications.¹⁰⁴

⁹⁵ See Kramon, *supra* note 64, at 92.

⁹⁶ *Id.*; Shapiro, *supra* note 32, at 7.

⁹⁷ See Shapiro, *supra* note 32, at 7.

⁹⁸ See *id.*

⁹⁹ BOSTON, MASS., NOISE ORDINANCE § 16-26.1 (1997).

¹⁰⁰ *Id.*

Unreasonable or excessive noise shall mean:

1. Noise measured in excess of 50 dBa between the hours of 11:00 p.m. and 7:00 a.m., or in excess of 70 dBa at all other hours; or

2. In the absence of an applicable noise level standard or regulation of the Air Pollution control commission, any noise plainly audible at a distance of three hundred (300) feet

Id.

¹⁰¹ See REBECCA A. NIEDZIELSKI, MINNESOTA POLLUTION CONTROL AGENCY, ENVIRONMENTAL IMPULSE NOISE STUDY 2 (May 1991). Examples of these impulse noise events include: back-up alarms, whistles, bells, horns, sirens, fireworks, riveting, hammering, sonic booms and dogs barking. See *id.*

¹⁰² See Creswell, *supra* note 45, at 24.

¹⁰³ See *id.*

¹⁰⁴ See *id.*; Jeffrey Schoen, Comment, *Airport Noise: How State and Local Governments Can Protect Airports From Urban Encroachment*, 1986 ARIZ. ST. L.J. 309, 315 (1986).

Airports are largely dependent on air carriers as well as their neighbors and local governments in implementing noise abatement policies.¹⁰⁵ With the deregulation of the airline industry, air carriers have greater latitude in selecting airports and routes to serve.¹⁰⁶ This gives air carriers greater leverage in bargaining with airport proprietors about noise abatement activities, often disrupting a proprietor's intentions to reduce noise.¹⁰⁷

III. LEGISLATIVE REGULATION OF AIRCRAFT NOISE POLLUTION

Today, regulation of aircraft noise is primarily achieved through federal legislation.¹⁰⁸ Congress has historically struggled with the proper balance between the interests of individuals owning land near airports and society's interest in the existence and expansion of airports.¹⁰⁹ In addition, Congress has repeatedly emphasized the local nature of noise abatement policy while simultaneously enunciating greater federal involvement in such issues.¹¹⁰ An examination of the major federal legislation designed to regulate airport noise demonstrates the difficulty of balancing these competing interests.

A. *Federal Aviation Act of 1958*

Early federal statutes made clear Congress' intent to leave the responsibility for the ownership and development of airports to state and municipal governments.¹¹¹ The Air Commerce Act of 1926 provided that airports are under the "jurisdiction and control of municipalities concerned."¹¹² This policy of encouraging local control of airports was further enunciated in the Civil Aeronautics Act of 1938 (CAA), which prohibited the Administrator of Civil Aeronautics from

¹⁰⁵ See Creswell, *supra* note 45, at 38.

¹⁰⁶ See *id.*

¹⁰⁷ See *id.* This author argues that there are many reasons why air carriers are not very interested in finding necessary solutions concerning noise impacts including: landowners are not "customers" of airlines and thus are unable to influence the market; homeowners have historically lacked political support sufficient to challenge aviation industry decisions relating to noise abatement; and the airports, not the air carriers, are liable for noise injuries. See Creswell, *supra* note 45, at 39 n.92.

¹⁰⁸ See discussion *infra* Part III.A-D.

¹⁰⁹ See discussion *infra* Part III.A-D.

¹¹⁰ See discussion *infra* Part III.A-D.

¹¹¹ See JOHN E. STEPHEN, *LEGAL AND RELATED ASPECTS OF AIRCRAFT NOISE REGULATION* 29 (U.S. Government Printing Office 1967).

¹¹² *Id.* at 29-30.

acquiring any airport.¹¹³ With the advent of commercial air traffic in 1958, Congress enacted the Federal Aviation Act of 1958 (Federal Aviation Act or the Act) as a substitute for the CAA.¹¹⁴

Under these early statutes, local governments were given responsibility for setting and enforcing rules and regulations governing airports, yet the federal government was given dominion over the air space.¹¹⁵ Utilizing its commerce power, Congress gave the federal government "complete and exclusive national sovereignty in the air space" over the United States.¹¹⁶ To accommodate increased air travel, Congress granted citizens of the United States "a public right of freedom of transit in air commerce through the navigable air space of the United States."¹¹⁷

The Federal Aviation Act created the FAA, subsequently replacing local governments as the primary authority for aviation safety.¹¹⁸ The Act contemplated a unified and coordinated air transportation system, although most airports in the United States at the time of the Act's passage were owned and operated by local governments.¹¹⁹

The Federal Aviation Act gave the FAA broad authority to control and regulate the use of navigable airspace and aircraft operations.¹²⁰ It focused on safety and economic issues, and did not directly address the increasing aircraft noise problem.¹²¹ Only a few of its provi-

¹¹³ See Civil Aeronautics Act of 1938, 49 U.S.C. app. §§ 401-722, *repealed by* Federal Aviation Administration Act of 1958, 49 U.S.C. §§ 40101-40120 (1994). With the CAA, Congress created the Civil Aeronautics Board as an independent regulatory agency, bringing airlines into the family of regulatory agencies it had first established with railroads and motor carriers. See Suzanne Imes, Comment, *Airline Passenger Facility Charges: What do they Mean for an Ailing Industry?*, 60 J. AIR L. & COM. 1039, 1042 (1995). The airline industry remained regulated for forty years until Congress passed the Airline Deregulation Act of 1978. See *id.* at 1043, 1044.

¹¹⁴ 49 U.S.C. §§ 40101-40120.

¹¹⁵ *Id.* § 40103(a).

¹¹⁶ *United States v. Causby*, 328 U.S. 256, 260 (1945) (citing 49 U.S.C. § 176(a), which was replaced by 49 U.S.C. § 40103(a)(1), which currently grants the U.S. government "exclusive sovereignty of airspace of the United States").

¹¹⁷ *Id.* (citing 49 U.S.C. § 403, which was replaced by 49 U.S.C. § 40103(a)(2), which currently grants a "public right of transit through the navigable air space"). Navigable air space was defined as "airspace above the minimum safe altitudes of flight prescribed by the Civil Aeronautics Authority." *Id.* (citing 49 U.S.C. § 180, which was replaced by 49 U.S.C. § 40102(a)(30), which now defines navigable air space as the "airspace above minimum safe altitudes of flight prescribed by regulations . . . including airspace needed to ensure safety in the takeoff and landing of aircraft").

¹¹⁸ See 49 U.S.C. § 106 (1994); see also Gale Schlesinger, *Airport Noise: The Proprietor's Dilemma*, 16 TRANSP. L.J. 333, 334 (1988).

¹¹⁹ See 49 U.S.C. § 40101; STEPHEN, *supra* note 111, at 31.

¹²⁰ See 49 U.S.C. § 40103.

¹²¹ See *id.*; see also John J. Jenkins, Jr., Comment, *The Airport Noise and Capacity Act of*

sions dealt with environmental issues, and very few of these implicated state or local governmental powers to any significant degree.¹²² The FAA relied on voluntary cooperation among aircraft and engine manufacturers, the airlines, and airport operators to handle aircraft noise problems.¹²³

In 1968, Congress amended the Federal Aviation Act, authorizing the FAA to include noise considerations as a factor in approving jet aircraft and engine design.¹²⁴ The Control and Abatement of Aircraft Noise and Sonic Boom Amendment directed the FAA to develop standards for measuring aircraft noise and to provide for the control and abatement of aircraft noise at the source.¹²⁵ In doing so, the FAA had to ensure that its standards were "consistent with the highest degree of safety" and "economically reasonable, technologically practicable, and appropriate for the applicable aircraft, aircraft engine, appliance, or certificate."¹²⁶

With statutory authority under the 1968 amendment, the FAA issued Federal Aviation Regulation (FAR) Part 36.¹²⁷ Part 36 created a system for measuring aircraft noise and established maximum levels of noise output for both newly certified aircraft and existing older aircraft.¹²⁸ Part 36 breaks noise emissions into three different levels or "stages," based on an aircraft's size and number of engines.¹²⁹ Many

1990: *Has Congress Finally Solved the Aircraft Noise Problem?*, 59 J. AIR L. & COM. 1023, 1030 (1994); Schlesinger, *supra* note 118, at 334. The Administrator of the FAA is given broad authority to regulate the use of navigable airspace in order to "ensure the safety of aircraft and the efficient use of airspace" and for "protecting individuals and property on the ground." 49 U.S.C. § 40103(b).

¹²² See DAVIDSON & DELOGU, *supra* note 3, at 12-6.

¹²³ See Jenkins, *supra* note 121, at 1031.

¹²⁴ See 49 U.S.C. § 44715.

¹²⁵ See *id.*

¹²⁶ See *id.* § 44715(b); Creswell, *supra* note 45, at 54-55.

¹²⁷ 14 C.F.R. § 36 (1997).

¹²⁸ See *id.*; Jenkins, *supra* note 121, at 1032; Schoen, *supra* note 104, at 312.

¹²⁹ 14 C.F.R. § 36. Aircraft which were certified prior to the publication of Part 36, and which were not thereafter modified to satisfy the new standard, became known as "stage one" aircraft. See Creswell, *supra* note 45, at 55. Aircraft meeting the 1969 standard are now referred to as "stage two" aircraft. *Id.* Stage two airplanes include Boeing models 727-200, 737-200 and McDonnell Douglas model DC-9. See FAA: *Aircraft noise levels continue to decline*, Secretary Slater announces, M2 Presswire, Oct. 1, 1997, available in 1997 WL 14464753 [hereinafter M2 Presswire]. In 1977, the FAA adopted a stricter standard for aircraft noise emissions for all aircraft certified after that date. See Creswell, *supra* note 45, at 55. These aircraft, known as "stage three" aircraft, are subject to the strictest noise restrictions. 14 C.F.R. § C36.5. Stage three airplanes include Boeing models 737-300, 757, 777, and McDonnell Douglas model MD-90. See M2 Presswire, *supra* this note.

anti-noise groups criticized the regulation, however, because it only applied to those aircraft designs with submitted certification applications after December 1, 1969.¹³⁰

B. Noise Control Act of 1972

In 1970, Congress directed EPA to establish the Office of Noise Abatement and Control (ONAC).¹³¹ Congress ordered ONAC to complete a one-year investigation and study of the effects of noise on public health and welfare.¹³² Based on its findings, EPA convinced Congress that noise pollution was a serious problem.¹³³ EPA reported that in the United States, forty million people were exposed to noise capable of inducing hearing loss, and that transportation and aircraft noise had reduced the property values of forty-four million people.¹³⁴

In 1972, in response to ONAC's report, Congress enacted the Noise Control Act (NCA).¹³⁵ Recognizing that "inadequately controlled noise presents a growing danger to the health and welfare of the Nation's population," the NCA ordered the establishment of a "means for effective coordination of Federal research and activities in noise control."¹³⁶ Congress asserted that while primary responsibility for noise control rests with state and local governments, "[f]ederal action is essential to deal with major noise sources in commerce control of which require national uniformity of treatment."¹³⁷ The stated purposes of the NCA were to establish a means for effectively coordinating federal research and activities in noise control, to authorize the

¹³⁰ See Jenkins, *supra* note 121, at 1032. The FAA amended FAR 36 in 1973, making it applicable to older aircraft designs, manufactured after December 1, 1973, but these regulations became effective in 1977. See Jenkins, *supra* note 121, at 1032 n.59.

¹³¹ See 42 U.S.C. § 7641 (1994).

¹³² See *id.* § 7641(a)-(b).

¹³³ See Shapiro, *supra* note 32, at 8.

¹³⁴ See *id.*

¹³⁵ 42 U.S.C. §§ 4901-4918 (1994). The Noise Control Act of 1972 amended portions of the 1968 Amendment of the 1958 Federal Aviation Act. See *id.*

¹³⁶ 42 U.S.C. § 4901(a)-(b). While the Noise Control Act delegated much jurisdiction over noise abatement to the federal government, Congress intended to leave some aspects of noise control to state and local governments. See DAVIDSON & DELOGU, *supra* note 3, at 7-3. In 1978, Congress enacted the Quiet Communities Act which amended the Noise Control Act of 1972 to emphasize the significance of state and local control of noise, particularly with respect to nonproduct sources of noise. See *id.*; 42 U.S.C. § 4913. Nonproduct sources are "amenable to control by traditional planning, siting, and landuse control tools, the adoption of point-source noise emission standards or ambient-noise standards, and time-of-day or other operational limitations." DAVIDSON & DELOGU, *supra* note 3, at 7-4.

¹³⁷ 42 U.S.C. § 4901(a)(3).

establishment of federal noise emission standards, and to provide information to the public concerning the noise emission and noise reduction characteristics of low-noise emission products.¹³⁸

The NCA drew EPA into the comprehensive scheme of federal control of aircraft noise.¹³⁹ It directed ONAC to conduct a study of the adequacy of the FAA noise regulations, and to propose regulations for the control and abatement of noise which EPA considered necessary to protect the public health and welfare.¹⁴⁰ Even with the introduction of EPA to the regulatory scheme, however, the FAA retained its primary responsibility for regulation of aircraft noise under the NCA.¹⁴¹ The FAA failed to implement many of EPA's recommendations, straining the relationship between the two agencies.¹⁴² EPA consistently disagreed with the FAA on the selection of noise measurement methodologies, the threshold of noise at which health impacts are felt, and the implementation of noise abatement programs at airports around the United States.¹⁴³

In 1978, Congress enacted the Quiet Communities Act, authorizing ONAC to create a grants program and offer technical assistance to state and local governments in order to stimulate noise abatement.¹⁴⁴ ONAC assisted communities by hosting training programs, writing and distributing model state and local noise ordinances, and establishing a program designed to help localities purchase low-noise emission products.¹⁴⁵ In 1981, the Reagan Administration's Office of Management and Budget ceased funding for ONAC.¹⁴⁶ As a result, it was estimated that more than a thousand community noise abatement programs, dependent upon federal funding and expertise, were virtu-

¹³⁸ See 61A AM. JUR. 2D *Pollution Control* § 268 (1981).

¹³⁹ See 42 U.S.C. § 4903.

¹⁴⁰ See *id.*; 49 U.S.C. § 44715(c) (1994).

¹⁴¹ See 49 U.S.C. § 44715. The FAA retained the right to reject any of the EPA-recommended regulations if the FAA determined that the regulations were not "economically reasonable, technologically practicable, [nor] appropriate for the applicable aircraft, aircraft engine, appliance, or certificate." *Id.* § 44715(b).

¹⁴² See Creswell, *supra* note 45, at 55-56 n.151; Jenkins, *supra* note 121, at 1033. In two reports to Congress, EPA stated that the problem of aircraft noise was primarily "institutional rather than technical." Creswell, *supra* note 45, at 55-56 n.151.

¹⁴³ See 143 CONG. REC. S6186 (1997); see also Shapiro, *supra* note 32, at 16. From December 1974 to October 1976, EPA submitted eleven proposals to the FAA concerning aircraft noise. See Shapiro, *supra* note 32, at 16. The FAA adopted one proposal in full and parts of two others. See *id.* at 16 n.107.

¹⁴⁴ 42 U.S.C. § 4913 (1994); see also Shapiro, *supra* note 32, at 17.

¹⁴⁵ See Shapiro, *supra* note 32, at 17-18.

¹⁴⁶ See *id.* at 1; 143 CONG. REC. S6186.

ally shut down.¹⁴⁷ This forced EPA to end most of its noise abatement activities.¹⁴⁸ EPA still remains responsible for enforcing regulations issued under the NCA even though its funding has been terminated.¹⁴⁹

C. *Aviation Safety and Noise Abatement Act of 1979*

In 1976, in response to problems occurring under FAR Part 36, the FAA enacted FAR Part 91.¹⁵⁰ Part 91 limits the noise emissions of existing aircraft by applying stricter standards retroactively to all aircraft.¹⁵¹ Because Part 36 implemented prospective noise standards only, aircraft owners could avoid stricter noise regulations by purchasing planes manufactured prior to 1974 using pre-1969 designs.¹⁵² The newly enacted Part 91 retroactive standards created much controversy in the aircraft industry due to the high costs associated with their implementation.¹⁵³ In response to the new financial burden on U.S. air carriers and the continuing need for a comprehensive noise abatement program, Congress enacted the Aviation Safety and Noise Abatement Act of 1979 (ASNAA).¹⁵⁴

ASNAA directed the Department of Transportation (DOT), after consultation with EPA¹⁵⁵ and other federal, state, and interstate agencies, to establish a comprehensive single program for measuring airport noise and compatibility.¹⁵⁶ ASNAA extended the technology im-

¹⁴⁷ See Alice H. Suter, *Noise Abatement: Quiet!!! Save a Nation's Eardrums*, WASH. POST, Nov. 12, 1989, at D3.

¹⁴⁸ See Shapiro, *supra* note 32, at 2.

¹⁴⁹ See *id.* "Of the twenty-eight environmental and health and safety statutes passed between 1958 and 1989, the Noise Control Act of 1972 . . . stands alone in having been stripped of budgetary support. Congress, however, did not repeal the Noise Act when it eliminated ONAC's funding, so EPA continues to have a statutory responsibility to implement it." *Id.*

¹⁵⁰ See 14 C.F.R. § 91.801-877 (1997); Vicky Tsilas, Note, *An Analysis of the Phase-Out Provisions of the Airport Noise and Capacity Act of 1990*, 4 FORDHAM ENVTL. L. J. 83, 86 (1992).

¹⁵¹ See 14 C.F.R. § 91.803.

¹⁵² See Tsilas, *supra* note 150, at 86.

¹⁵³ See *id.* at 87.

¹⁵⁴ 49 U.S.C. § 47501-47510 (1994); see also Jenkins, *supra* note 121, at 1034; Tsilas, *supra* note 150, at 87.

¹⁵⁵ Implementation of ASNAA and its policies occurred two years prior to the elimination of ONAC's funding.

¹⁵⁶ See 49 U.S.C. § 47502. The Secretary of Transportation is directed to:

- (1) establish a single system of measuring noise that—
 - (A) has a highly reliable relationship between projected noise exposure and surveyed reactions of individuals to noise; and
 - (B) is applied uniformly in measuring noise at airports and the surrounding area;
- (2) establish a single system for determining the exposure of individuals to noise

plementation deadlines for compliance with Part 91.¹⁵⁷ In addition, it established a noise compatibility planning system, comprised of financial incentives to induce both airport and aircraft operators to adopt anti-noise pollution policies.¹⁵⁸ Planning is only mandatory if the airport desires federal aid for development.¹⁵⁹

Under ASNAA's planning system, DOT developed a uniform system for measuring aircraft noise levels and determined compatible land uses for areas with various noise levels.¹⁶⁰ Based on this information, airport proprietors may develop noise exposure maps for their airports, pointing out problem noise areas and any incompatible uses in those areas.¹⁶¹ After completion of approved noise compatibility maps, airport operators qualify for federal grants to develop their proposed noise compatibility programs.¹⁶²

In addition to its financial incentives, ASNAA provides airport proprietors with other inducements for submitting noise compatibility programs.¹⁶³ First, the noise exposure maps enable airport operators to limit potential liability for noise pollution by notifying potential purchasers of property near the airport of the possibly high noise levels.¹⁶⁴ Purchasers of property near an airport with a noise exposure map are limited in recovering damages because they are presumed to have had actual or constructive knowledge of the noise exposure map.¹⁶⁵ The only way a purchaser can overcome this presumption is to show that there has been a significant change in the type or frequency of aircraft operations at the airport, airport layout, flight patterns, or an increase in night operations, and that the damages resulted from this change or increase.¹⁶⁶ In addition, ASNAA offers airport proprietors further protection by prohibiting private litigants

resulting from airport operations, including noise intensity, duration, frequency, and time of occurrence; and

(3) identify land uses normally compatible with various exposures of individuals to noise.

Id.

¹⁵⁷ See *id.* § 47508.

¹⁵⁸ See *id.* § 47503-47505.

¹⁵⁹ See Schoen, *supra* note 104, at 314.

¹⁶⁰ See 49 U.S.C. § 47502.

¹⁶¹ See *id.* § 47503.

¹⁶² See *id.* § 47504(c). For a full discussion of the components and funding of noise compatibility programs, see Part V.

¹⁶³ See generally 49 U.S.C. §§ 47506, 47507.

¹⁶⁴ See *id.* § 47506.

¹⁶⁵ See *id.*

¹⁶⁶ See *id.* § 47506(a)(1).

from using the noise exposure map against an airport in a civil suit seeking relief from airport noise.¹⁶⁷

Noise compatibility planning is based on localized fact-specific circumstances.¹⁶⁸ A plan is based on an examination of areas within and beyond an airport's borders to ensure the noise compatibility of an airport with its surrounding community.¹⁶⁹ Localized planning prompted the airline and air cargo industries to lobby Congress for legislation to counteract the proliferation of noise restrictions that were adopted by airports around the country.¹⁷⁰

D. *Airport Noise and Capacity Act of 1990*

In response to the air industry's lobbying efforts, Congress passed the Airport Noise and Capacity Act of 1990 (ANCA), in an attempt to integrate the increasing number of individualized noise restrictions imposed on airports by local operators.¹⁷¹ In enacting ANCA, Congress emphasized a national noise policy that considers local interests in aviation noise management through the use of new technologies, use of revenue from passenger facility fees, and review of current operations.¹⁷² ANCA's opponents, primarily citizens groups, argued that the legislation gave FAA unlimited discretion to strike down local noise abatement efforts and would actually increase the noise problem by allowing carriers to keep their noisiest aircraft in the sky and by increasing the total number of aircraft in service.¹⁷³

ANCA, another attempt to balance the competing interests of the airline industry and citizens residing near airports, consists of two separate programs.¹⁷⁴ First, ANCA directs the DOT to establish a

¹⁶⁷ See *id.* § 47507.

¹⁶⁸ See Schoen, *supra* note 104, at 326–27.

¹⁶⁹ See *id.*

¹⁷⁰ See Shapiro, *supra* note 32, at 59.

¹⁷¹ 49 U.S.C. §§ 47521–47533; see also Jenkins, *supra* note 121, at 1036; Shapiro, *supra* note 32, at 59; Tsilas, *supra* note 150, at 87. Congress enacted ANCA in the waning moments of the 1990 legislative session. See Shapiro, *supra* note 32, at 58. Citizens groups that opposed the passage of ANCA claim that the sponsors of the legislation were able to get it passed by Congress during the chaos of the last few days of the session. See *id.* at 59 n.350. Opponents argue that no public hearings were held, and although committee staffers consulted industry lobbyists during the bill's markup, representatives of airport operators were not consulted. See *id.*

¹⁷² See 49 U.S.C. § 47521.

¹⁷³ See Shapiro, *supra* note 32, at 59 n.350.

¹⁷⁴ See 49 U.S.C. §§ 47524, 47528; see also Jenkins, *supra* note 121, at 1037; Tsilas, *supra* note 150, at 90.

national aviation noise policy and program for reviewing airport noise and access restrictions on the operation of stage two and stage three aircraft.¹⁷⁵ Second, ANCA provides for a national phase-out of stage two aircraft operating in or out of U.S. airports and requires the airline industry to achieve a 100% stage three fleet of quieter aircraft by the year 2000.¹⁷⁶

In 1991, the FAA began administering new Federal Aviation Regulations (FAR) Part 161.¹⁷⁷ Part 161 implements provisions of ANCA by establishing a national program for reviewing airport noise and access restrictions on stage two and stage three aircraft operations.¹⁷⁸

IV. PREEMPTION ISSUES IN COMBATTING NOISE POLLUTION

Much of the confusion surrounding the regulation of airport noise pollution is the product of a difficult balance between state and federal powers. The U.S. Constitution expressly gives Congress the power to regulate the interstate and foreign commerce of the United States.¹⁷⁹ Under the commerce power and, to some extent, the postal and military powers, Congress may control air traffic in the United States.¹⁸⁰

The Supremacy Clause of the U.S. Constitution invalidates state laws regarding air commerce which "interfere with, or are contrary to" federal laws regarding air commerce.¹⁸¹ It states that "[the] Constitution, and the Laws of the United States which shall be made in Pursuance thereof . . . shall be the supreme Law of the Land."¹⁸² Preemption is largely dependent on congressional intent rather than the plain meaning of the Constitution.¹⁸³ The will of Congress to mon-

¹⁷⁵ See 49 U.S.C. § 47524; see also Jenkins, *supra* note 121, at 1037; Tsilas, *supra* note 150, at 90. For a discussion of aircraft noise levels, see *supra* notes 128-30 and accompanying text.

¹⁷⁶ See 49 U.S.C. § 47528; see also Jenkins, *supra* note 121, at 1037; Tsilas, *supra* note 150, at 90. Some airlines are complying with the stage two airplane phaseout by installing FAA certified stage three noise level hushkits to their stage two fleet. See M2 Presswire, *supra* note 129. As of December 1996, a report submitted to Congress by DOT stated that 75.5% of the airplanes operating in the U.S. met stage three noise requirements. See *id.*

¹⁷⁷ U.S. DEPT' OF TRANSP., FEDERAL AVIATION ADMIN., REPORT TO CONGRESS—SIXTEENTH ANNUAL REPORT OF ACCOMPLISHMENTS UNDER THE AIRPORT IMPROVEMENT PROGRAM 36 (1998) [hereinafter SIXTEENTH ANNUAL REPORT].

¹⁷⁸ See *id.*

¹⁷⁹ See U.S. CONST. art. I, § 8, cl. 3.

¹⁸⁰ See STEPHEN, *supra* note 111, at 28.

¹⁸¹ Gibbons v. Ogden, 22 U.S. 1, 211 (1824); see also STEPHEN, *supra* note 111, at 28; Schlesinger, *supra* note 118, at 334.

¹⁸² U.S. CONST., art. VI, cl. 2.

¹⁸³ See Rice v. Santa Fe Elevator Corp., 331 U.S. 218, 230, *rev'd*, 331 U.S. 247 (1947); see also Ann Thornton Field & Frances K. Davis, *Can the Legal Eagles Use the Ageless Preemption*

opolize an area of legislation may be expressed in an authorizing statute or in regulations enacted pursuant to the statute.¹⁸⁴

There are three basic circumstances in which a state or local statute may be preempted by a federal statute or regulation.¹⁸⁵ First, in enacting a federal statute within its constitutional limits, Congress may expressly state an intention to preempt state law.¹⁸⁶ Second, Congress' intent to preempt state law in a particular area may be implied where Congress has "occupied the field" of regulation by leaving no room for supplementary state regulation.¹⁸⁷ Courts infer preemption when the "federal interest is so dominant that the federal system will be assumed to preclude enforcement of state laws on the same subject."¹⁸⁸ Third, preemption exists when a state law directly conflicts with federal law.¹⁸⁹ Such conflict occurs when "compliance with both federal and state regulations is a physical impossibility,"¹⁹⁰ or when state law "stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress."¹⁹¹

In determining whether Congress intended to preempt state law on a subject, the U.S. Supreme Court relies on the concept of uniformity, often present in legislative histories.¹⁹² The Court balances the need for uniform control in order to protect national interests against the rights of individual property owners in applying the preemption doctrine to aviation-related cases.¹⁹³ After the 1968 amendment to the Federal Aviation Act, the Court mandated federal control over matters concerning aircraft in flight, and control by other entities, including federal, state, and local governments, for matters regarding aircraft on the ground.¹⁹⁴ States' rights to enact statutes to control noise

Doctrine to Keep American Aviators Soaring Above the Clouds and Into the Twenty-First Century?, 62 J. AIR L. & COM. 315, 325 (1996).

¹⁸⁴ See *Hillsborough County v. Automated Med. Labs*, 471 U.S. 707, 713 (1985).

¹⁸⁵ See *id.* For purposes of the Supremacy Clause, constitutionality of local ordinances is analyzed in the same way as that of state laws. See, e.g., *id.*; *City of Burbank v. Lockheed Air Terminal*, 411 U.S. 624 (1973).

¹⁸⁶ See *Hillsborough*, 471 U.S. at 713.

¹⁸⁷ *Id.*; *Silkwood v. Kerr-McGee*, 464 U.S. 238, 248 (1984).

¹⁸⁸ *Hillsborough*, 471 U.S. at 713.

¹⁸⁹ See *id.*

¹⁹⁰ *Id.*

¹⁹¹ *Id.* (citing *Hines v. Davidowitz*, 312 U.S. 52, 67 (1941)).

¹⁹² See *Field & Davis*, *supra* note 183, at 333.

¹⁹³ See *id.*

¹⁹⁴ See *id.* at 334 (citing *Evansville-Vanderburgh Airport Auth. Dist. v. Delta Airlines, Inc.*, 405 U.S. 707 (1972); *Pan Am. World Airways, Inc. v. United States*, 371 U.S. 296 (1963)).

generated by aircraft during descent and takeoff was not addressed by the U.S. Supreme Court until 1972.¹⁹⁵

A. Federal Preemption of State and Local Regulation of Aircraft Noise Pollution

The Supreme Court first addressed the issue of preemption as it pertained to aircraft noise in *City of Burbank v. Lockheed Air Terminal, Inc.*¹⁹⁶ In *Burbank*, the Court invalidated a local noise regulation restricting the permissible times of flights in and out of the Burbank airport.¹⁹⁷ Recognizing that noise control is vested historically in the police power of the states, the Court held that the control vested in the FAA and EPA under the Noise Control Act of 1972 left no room for local control.¹⁹⁸ The Court noted that imposition of curfew ordinances on a nationwide basis would impair the efficient use of navigable airspace by limiting the flexibility of the FAA in controlling the flow of aircraft.¹⁹⁹ Instead, "a uniform and exclusive system of federal regulation" was required if "the congressional objectives underlying the Federal Aviation Act [were] to be fulfilled."²⁰⁰ Further, the Court stated that any diffusion of the FAA's and EPA's administrative powers must be left to Congress.²⁰¹

The Supreme Court's pronouncements in *Burbank* regarding preemption have since been understood to extend well beyond curfews.²⁰² Based on *Burbank*, courts have found a variety of local restrictions on aircraft operations unconstitutional under the Supremacy Clause.²⁰³

¹⁹⁵ See Noise Control Act of 1972, 42 U.S.C. §§ 4901-4918 (1994); see also Part IV.A and accompanying notes.

¹⁹⁶ 411 U.S. 624, 638 (1973).

¹⁹⁷ See *id.* at 625-26.

¹⁹⁸ See *id.* at 638. Justice Rehnquist wrote the dissenting opinion in *Burbank*, a 5-4 decision. He criticized the majority's examination of the existing legislation concerning control over aviation. See *id.* at 652 (Rehnquist, J., dissenting). Because the FAA and EPA "have exclusive authority to reduce noise by promulgating regulations and implementing standards directed at one or several of the causes of the level of noise, local governmental bodies are not thereby foreclosed from dealing with the noise problem by every other conceivable method." *Id.*

¹⁹⁹ See *Burbank*, 411 U.S. at 628.

²⁰⁰ *Id.* at 639.

²⁰¹ See *id.* at 640.

²⁰² See *National Helicopter Corp. of Am. v. City of New York*, 952 F. Supp. 1011, 1023 (S.D.N.Y. 1997).

²⁰³ See, e.g., *British Airways Bd. v. Port Auth. of N.Y. and N.J.*, 564 F.2d 1002 (2d Cir. 1977) (preempting prohibition on airport use by particular aircraft); *United States v. City of Blue Ash*, 487 F. Supp. 135 (S.D. Ohio 1978) (preempting route restrictions), *aff'd*, 621 F.2d 227 (6th Cir. 1980) cited in *National Helicopter*, 952 F. Supp. at 1023.

While federal law preempts local law in regard to aircraft safety, navigable airspace, and noise control, courts have refrained from applying *Burbank* when land and water use zoning issues are involved.²⁰⁴ In several cases, the FAA has indicated that it does not believe Congress expressly or impliedly meant to preempt regulation of local land or water use in regard to locating airports or plane landing sites.²⁰⁵ FAA regulations governing the establishment of airports typically defer to local laws, ordinances, and regulations, thus manifesting FAA's lack of intent to regulate airport location as pervasively as it regulates airport noise.²⁰⁶ In *Gustafson v. City of Lake Angelus*, the U.S. Court of Appeals for the Sixth Circuit stated that concerns of environmental impact and landuse compatibility were matters of local concern and therefore should not be determined by the FAA.²⁰⁷

B. *The Proprietor's Exemption*

The *Burbank* Court made it clear that in most circumstances regulation of aircraft noise under NCA is primarily a concern of the federal government.²⁰⁸ In a footnote, however, the Court suggested that different logic might apply with respect to regulations imposed by a municipality acting in its capacity as an airport proprietor.²⁰⁹ Concerned with preemption of fundamental rights of property ownership, it appears that the *Burbank* majority limited preemption of state or local regulation of noise control to exercises of police power.²¹⁰ Sub-

²⁰⁴ See *Gustafson v. City of Lake Angelus*, 76 F.3d 778, 786 (6th Cir. 1996).

²⁰⁵ See *Blue Sky Entertainment, Inc. v. Town of Gardiner*, 711 F. Supp. 678, 683 (N.D.N.Y. 1989) (FAA stated: "To the extent the ordinance regulates land use in the Town of Gardiner, it is not preempted by federal regulation of aviation"); *Citizens Against Burlington, Inc. v. Busey*, 938 F.2d 190, 197 (D.C. Cir. 1991). In an Environmental Impact Statement, the FAA wrote: "In the present system of federalism, the FAA does not determine where to build and develop civilian airports, as an owner/operator. Rather, the FAA facilitates airport development by providing Federal financial assistance, and reviews and approves or disapproves revisions to Airport Layout Plans at Federally funded airports." *Busey*, 938 F.2d at 197, quoted in *Gustafson*, 76 F.3d at 785.

²⁰⁶ See 14 C.F.R. § 157.7 (1997), cited in *Gustafson*, 76 F.3d at 785. "[An FAA] determination does not relieve the proponent of responsibility for compliance with any local law, ordinance or regulation, or state or Federal regulation." *Gustafson*, 76 F.3d at 785.

²⁰⁷ See 14 C.F.R. § 157.7.

²⁰⁸ See discussion *supra* Part IV.A.

²⁰⁹ See *City of Burbank v. Lockheed Air Terminal, Inc.*, 411 U.S. 624, 635-36 n.14 (1973).

²¹⁰ See *id.* The Supreme Court emphasized the distinction between an entity's proprietary and police powers: "[We] are concerned here not with an ordinance imposed by the City of Burbank as 'proprietor' of the airport, but with the exercise of police power." *Id.*

sequently, courts have found that in *Burbank* the Supreme Court recognized that Congress "singled out airport proprietors and gave them special, although undefined, leeway in controlling the sources of aircraft noise directly."²¹¹ This exclusion, now known as the "Proprietor's Exemption," has been the subject of extensive litigation.²¹²

Federal courts have recognized complete federal preemption over the regulation of aircraft and airspace, with a "limited role for local airport proprietors in regulating noise levels at their airports."²¹³ That limited role is one in which municipalities can regulate aircraft operations in a "fair, reasonable and nondiscriminatory" manner.²¹⁴ The origin of this exception exists in a letter from the Secretary of Transportation submitted to the Senate Commerce Committee regarding the 1968 amendments to the Federal Aviation Act.²¹⁵ The Secretary of Transportation, in a letter dated June 22, 1968, wrote:

The proposed legislation will not affect the rights of a State or local public agency, as the proprietor of an airport, from issuing regulations or establishing requirements as to the permissible level of noise which can be created by aircraft using the airport. Airport owners acting as proprietors can presently deny the use of their airports to aircraft on the basis of noise considerations as long as such exclusion is nondiscriminatory.²¹⁶

Neither Congress nor the Supreme Court has delineated the precise nature of the "powers and rights" reserved to proprietors.²¹⁷ The rationale for the exception, however, resides in the Supreme Court's determination in *Griggs* that airport proprietors are liable for excessive aircraft noise.²¹⁸ Courts recognizing the exception have argued that an airport proprietor should be able to promulgate reasonable noise regulations in order to properly insulate itself from potential liability.²¹⁹

²¹¹ *San Diego Unified Port Dist. v. Gianturco*, 651 F.2d 1306, 1316 (9th Cir. 1981).

²¹² *See, e.g., id.*; *Pirola v. City of Clearwater*, 711 F.2d 1006, 1009 (11th Cir. 1983).

²¹³ *See City & County of San Francisco v. F.A.A.*, 942 F.2d 1391, 1394 (9th Cir. 1991).

²¹⁴ *National Helicopter Corp. of Am. v. City of New York*, 952 F. Supp. 1011, 1024 (S.D.N.Y. 1997).

²¹⁵ *See City of Burbank v. Lockheed Air Terminal, Inc.*, 411 U.S. 624, 635-36 (1973); *Gianturco*, 651 F.2d at 1316.

²¹⁶ S. REP. NO. 90-1353, at 6 (1968), *quoted in Burbank*, 411 U.S. at 635-36 n.14.

²¹⁷ *See Burbank*, 411 U.S. at 635-36 n.14; *Gianturco*, 651 F.2d at 1316-17.

²¹⁸ *See Griggs v. County of Allegheny*, 369 U.S. 84, 89 (1962); *see also Gianturco*, 651 F.2d at 1316; *Harrison v. Schwartz*, 572 A.2d 528, 533 (Md. 1990).

²¹⁹ *See Gianturco*, 651 F.2d at 1316-17; *Harrison*, 572 A.2d at 533.

Following *Burbank*, federal and state courts generally have accepted the premise that “a municipal ordinance *resting on police power*, which manages or dictates action by aircraft in navigable airspace for the purpose of noise control, is invalid under the preemption doctrine.”²²⁰ Some courts, however, refused to relinquish complete control over flight by seizing on *Burbank*’s proprietor exemption.²²¹ For example, in *Santa Monica Airport Ass’n v. City of Santa Monica*, the U.S. Court of Appeals for the Ninth Circuit concluded that a municipal proprietor’s power to regulate the use of its airport was not preempted by federal legislation.²²² The court stated, “[t]he legislative history shows that Congress intended that municipal proprietors enact reasonable regulations to establish acceptable noise levels for airfields and their environs.”²²³

Since the *Burbank* decision, Congress has clarified its intent to preempt local control of noise through the implementation of legislation such as ANCA.²²⁴ Congress declared that “noise policy must be carried out at the national level” and “local interest in aviation noise management shall be *considered* in determining the national interest.”²²⁵

C. Federal Preemption of Tortious Liability for Airport Noise

While federal legislation such as ANCA preempts state and local regulation of aircraft noise, an individual’s judicial remedies for damages caused by aircraft noise are not similarly affected. The comprehensive scheme of federal legislation regulating airport noise contemplates considerable federal involvement in the planning and operation of airports.²²⁶ Courts, however, have given protected status to a citizen’s rights to the full use, possession, and enjoyment of his or her property.²²⁷ It is well recognized that a property owner has a constitutionally based inverse condemnation remedy against an airport pro-

²²⁰ United States v. City of Blue Ash, 487 F. Supp. 135, 137 (S.D. Ohio 1978) (emphasis added).

²²¹ See Field & Davis, *supra* note 183, at 340–41 n.94 (citing National Aviation v. City of Hayward, 418 F. Supp 417, 421 (N.D. Cal. 1976); Air Transp. Ass’n of Am. v. Crotti, 389 F. Supp. 58, 63 (N.D. Cal. 1975)).

²²² 659 F.2d 100, 104 (9th Cir. 1981).

²²³ *Id.*

²²⁴ See 49 U.S.C. § 47521 (1994).

²²⁵ *Id.* § 47521(3)-(4) (emphasis added).

²²⁶ See Greater Westchester Homeowners Ass’n v. City of Los Angeles, 603 P.2d 1329, 1336 (Cal. 1979).

²²⁷ See *id.* at 1334.

prietor for property damage or loss caused by airport noise.²²⁸ Courts have held that the common law and statutory remedy of nuisance should protect the interests of property owners under similar circumstances equally.²²⁹

In *Greater Westchester Homeowners Ass'n v. City of Los Angeles*, homeowners sued the city on a nuisance theory for personal injuries sustained as a result of excessive noise from aircraft using the city's airport.²³⁰ The California Supreme Court based its decision on the depth and continuous nature of the city's involvement in the creation and maintenance of the airport.²³¹ Conceding that the city followed federal advice, approval, and perhaps encouragement, the court stated that the city "chose, and was not forced by anyone, to develop LAX [Los Angeles International Airport] in its particular location."²³² The court concluded that recognition of a state nuisance remedy would not impermissibly hinder commerce or conflict with federal policy.²³³

Other state courts that have considered this issue have reached the similar conclusion that claims for personal injuries founded upon nuisance theory are not federally preempted.²³⁴ The majority of these opinions rely on the Federal Aviation Act provision that "[n]othing contained in this Chapter shall in any way abridge or alter the remedies now existing at common law or by statute, but the provisions of this Chapter are in addition to such remedies."²³⁵

Yet, because federal law governs much of the conduct of airports and their carriers, individuals are limited in the relief they can seek under common law doctrines such as nuisance.²³⁶ Damages for issues such as failing to control the maximum number of flights per hour or fitting older models of aircraft with newer, quieter engines are not recoverable under state law actions because such issues are governed by federal law.²³⁷ Instead, claimants are limited to issues that do not

²²⁸ See *id.* at 1335; see also discussion *supra* Part II.B.

²²⁹ See *Westchester Homeowners Ass'n*, 603 P.2d at 1335.

²³⁰ *Id.* at 1329.

²³¹ See *id.* at 1335.

²³² *Id.*

²³³ See *id.* at 1336.

²³⁴ See, e.g., *Owen v. City of Atlanta*, 277 S.E.2d 338, 340 (Ga. Ct. App. 1981), *aff'd*, 282 S.E.2d 906 (1981); *Krueger v. Mitchell*, 332 N.W.2d 733, 739 (Wis. Ct. App. 1983).

²³⁵ 49 U.S.C. § 40120(c) (1994); see also *Wood v. City of Huntsville*, 384 So. 2d 1081 (Ala. 1980); *Smart v. City of Los Angeles*, 112 Cal. App. 3d 232 (Cal. Ct. App. 1980).

²³⁶ See *Bieneman v. City of Chicago*, 864 F.2d 463, 472 (7th Cir. 1988).

²³⁷ See *id.* at 473.

offend federal law, such as proprietary liability due to inadequate noise baffles around the perimeter of the airport, or allowing an airport to operate with more runways than federal law requires.²³⁸ According to the U.S. Court of Appeals for the Seventh Circuit, "the essential point is that the state may employ damages remedies only to enforce federal requirements or to regulate aspects of airport operation over which the state has discretionary authority."²³⁹

V. LANDUSE AND NOISE COMPATIBILITY PLANNING

Because of federal preemption of state and local regulatory efforts to curb airport noise pollution, measures designed to make airports noise-compatible with their environments may be the only remaining means local governments have to address the noise problem. State and local governments use a variety of methods to promote the noise compatibility of airports, thus helping to protect a community's interest in its airport.²⁴⁰ Programs often include a combination of the following measures: establishment of a preferential runway system, restriction of airport use based upon aircraft noise levels, soundproofing of public buildings, modification of flight patterns and procedures, and acquisition of land and other interests labeled as incompatible uses.²⁴¹ Funding for noise abatement programs comes from federal and local governments, in addition to those provided by airport proprietors.²⁴² However, the high monetary expenses necessary to establish noise abatement programs often limit their effectiveness due to inadequate funding from all sources.²⁴³

A. Land Use as a Means of Noise Abatement

Land acquisition is a successful but expensive means of controlling airport noise.²⁴⁴ Airport proprietors may acquire land surrounding an airport or an interest in that land through voluntary sales or condemnation proceedings.²⁴⁵ After it has acquired the land, the airport can use the property for airport uses, airport-related uses such as hotels

²³⁸ See *id.*

²³⁹ *Id.*

²⁴⁰ See 49 U.S.C. § 47504 (1994); Schoen, *supra* note 104, at 310.

²⁴¹ See 49 U.S.C. § 47504(a)(2).

²⁴² See discussion *infra* Part V.B.

²⁴³ See discussion *infra* Part V.A.

²⁴⁴ See Creswell, *supra* note 45, at 41; Schoen, *supra* note 104, at 321.

²⁴⁵ See Schoen, *supra* note 104, at 320.

and restaurants, or nonairport-related functions.²⁴⁶ Land acquisition programs for airport noise compatibility often include programs for relocation of residents and businesses and redevelopment of the land for compatible uses.²⁴⁷

Land banking, an alternative form of land acquisition, procures land for future expansion of existing airports or establishment of future airports, rather than immediate construction.²⁴⁸ Purchasing land several years in advance avoids many of the difficult problems associated with establishing or expanding an airport where development already exists.²⁴⁹ Like standard land acquisition, however, land banking requires large expenditures, commonly beyond the reach of local governments.²⁵⁰

Landuse zoning is another means of attempting to make airports noise-compatible with the surrounding community.²⁵¹ Landuse zoning does not prevent development of land, but instead limits development by requiring an airport's uses to be noise-compatible.²⁵² Construction of warehouses, factories, and commercial projects often constitute noise-compatible uses.²⁵³ Landuse zoning is a normal exercise of the local government's zoning authority and requires no specific enabling legislation.²⁵⁴ With regard to airport noise, however, landuse zoning may have practical limitations.²⁵⁵ Land may be subject to multiple zoning jurisdictions because of the large size of airports.²⁵⁶ Addition-

²⁴⁶ See *id.*

²⁴⁷ See *id.* at 323.

²⁴⁸ See *id.* at 329.

²⁴⁹ See *id.*; see also Creswell, *supra* note 45, at 44-45.

²⁵⁰ See Creswell, *supra* note 45, at 45; Schoen, *supra* note 104, at 329.

²⁵¹ See Schoen, *supra* note 104, at 327.

²⁵² See *id.*

²⁵³ See *id.*

²⁵⁴ See *id.*

²⁵⁵ See *id.* Zoning regulations must meet certain constitutional mandates to constitute a valid exercise of a local government's powers:

First, the regulation must be reasonably related to the public health, safety, and welfare; if ruled 'arbitrary and unreasonable,' the regulation becomes a 'taking' which requires payment of just compensation under the fifth amendment. Second, the zoning regulation usually cannot be enforced retroactively without payment of just compensation; preexisting nonconforming uses have the right to remain for a 'reasonable' to indefinite length of time. Third, because a property owner is deemed to have the right to reasonably beneficial use of his property, zoning regulations cannot be used for the purpose of depressing the values of property that the government wishes to acquire.

Id. at 328.

²⁵⁶ See Schoen, *supra* note 104, at 327.

ally, reductions in the property tax base are possible based on the less intensive use of property.²⁵⁷

Another way to attain airport noise compatibility is to soundproof buildings in an airport's vicinity.²⁵⁸ While soundproofing provides immediate relief, there are limitations on its effectiveness.²⁵⁹ First, such projects require large expenditures that, depending upon the age of the building, may not be economically feasible.²⁶⁰ In addition, while the sound level is significantly reduced within a building, it may be ineffective in residential situations especially during the summer months when individuals open windows and spend more time outdoors.²⁶¹

B. *Funding for Noise-Compatible Landuse*

In conjunction with ASNA, the FAA developed and implemented FAR Part 150, which provides detailed guidelines and instructions for obtaining federal funding for noise compatibility programs.²⁶² Part 150 is a voluntary program that allows airport operators to prepare noise exposure maps and to recommend measures in a noise compatibility program to reduce noise and noncompatible land uses.²⁶³ Airport operators may submit airport noise compatibility programs to the FAA for approval under criteria established by ASNA and Part 150.²⁶⁴ The FAA is authorized to provide Airport Improvement Program (AIP) funding for airport noise compatibility planning (i.e., the preparation of the noise exposure maps and the noise compatibility program) and noise projects (i.e., measures approved by the FAA in a noise compatibility program).²⁶⁵ Under the AIP, an airport listed in the National

²⁵⁷ See *id.* at 328-29.

²⁵⁸ The common methods for sound insulating structures include: sealing or weatherstripping windows, doors, vents and external openings; replacing existing hollow-core doors with solid doors; installing central air conditioning, special ceiling and wall panels, and double-glazed windows; eliminating windows and insulating entryways, attics and crawl spaces. See Creswell, *supra* note 45, at 42 n.105; Schoen, *supra* note 104, at 324.

²⁵⁹ See Creswell, *supra* note 45, at 42; Schoen, *supra* note 104, at 324.

²⁶⁰ See Creswell, *supra* note 45, at 42; Schoen, *supra* note 104, at 324. Based on a 1985 study, one author notes that the construction costs associated with sound insulation may run about \$20,000 per residential structure. See Creswell, *supra* note 45, at 42.

²⁶¹ See Creswell, *supra* note 45, at 42; Schoen, *supra* note 104, at 324.

²⁶² 14 C.F.R. § 151 (1997).

²⁶³ See U.S. DEP'T OF TRANSP., FEDERAL AVIATION ADMIN., POLICY ON FUNDING OF COMBINED PART 150 AND PART 161 STUDIES AND ANALYSES, Docket No. 28683 (1996).

²⁶⁴ See *id.*

²⁶⁵ See Airport and Airway Improvement Act of 1982, 49 U.S.C. §§ 47101-47131; Creswell, *supra* note 45, at 62. Under this act, Congress states, "It is in the public interest to recognize the effects of airport capacity expansion projects on aircraft noise. Efforts to increase capacity

Plan of Integrated Airport Systems (NPIAS) published by the FAA²⁶⁶ can apply for federal funds for different types of airport projects including noise abatement.²⁶⁷ As of September 30, 1997, 235 airports were participating in the program, 191 of which had approved programs successfully in place.²⁶⁸ Since an approved noise compatibility program is a prerequisite to receiving funds for most mitigation actions, most airport operators where noise is a significant factor have participated in some level of noise planning.²⁶⁹

Because the federal expenditures for airports are insufficient to satisfy all of the projects recognized and approved in the NPIAS, FAA has much discretionary authority in allocating these funds.²⁷⁰ The level of discretionary funding is a product of the overall AIP funding level.²⁷¹ The availability of diminished discretionary funds does not relieve an airport sponsor of its obligation to fulfill noise mitigation programs included in its Part 150 plan.²⁷² Thus, airport operators may have to use local funds to fulfill these requirements, reducing local funds available for other airport needs.²⁷³

Congress also authorizes airports to collect passenger facility charges (PFCs) to finance an eligible airport-related project.²⁷⁴ Airport-related projects include airport noise compatibility planning and the implementation of noise compatibility measures under ASNA even if a noise compatibility program has not been approved.²⁷⁵ The FAA adopted substantial regulations to clarify the eligibility requirements and application process for airport proprietors to assess PFCs.²⁷⁶ In 1996, \$1.1 billion in PFC funds were collected from some

through any means can have an impact on surrounding communities. Noncompatible land uses around airports must be reduced and efforts to mitigate noise must be given a high priority." 49 U.S.C. § 47101(c).

²⁶⁶ See Creswell, *supra* note 45, at 75. The NPIAS lists all commercial and reliever airports and many general aviation airports. The bulk of the plan is a state by state catalogue of airports, including information about numbers of based aircraft, annual operations, planned projects, and a summary of selected policies and concerns related to airport development. *See id.*

²⁶⁷ *See id.* at 78.

²⁶⁸ See SIXTEENTH ANNUAL REPORT, *supra* note 177, at 36.

²⁶⁹ See Creswell, *supra* note 45, at 78.

²⁷⁰ *See id.* at 78-79.

²⁷¹ *See id.*

²⁷² *See id.*

²⁷³ *See id.*

²⁷⁴ See 49 U.S.C. § 40117(b)(1) (1994). PFCs are essentially head taxes, in which an airport assesses \$1.00, \$2.00, or \$3.00 on all departing passengers. *See id.* § 40117; 14 C.F.R. § 158.5 (1997).

²⁷⁵ See 49 U.S.C. § 40117(a)(3).

²⁷⁶ See Passenger Facility Charges, 14 C.F.R. § 158 (1997).

268 airports and distributed in the following manner: 35% went to projects such as runways, taxi-ways, and safety related projects; 30% was allocated to landside projects, primarily terminal buildings; 17% paid interest on bonds; 11% was used for noise abatement projects; and 6% was used for roads.²⁷⁷ The FAA adopted substantial regulations to clarify the eligibility requirements and application process for airport proprietors to assess PFCs.²⁷⁸

Failure to comply with ANCA allows FAA to terminate an airport operator's eligibility for airport grant funds and its authority to impose or collect PFCs.²⁷⁹ While withholding PFC eligibility may be an effective means of controlling noise control policies, some commentators have argued it also takes away PFC funding crucial to expanding airport capacity.²⁸⁰

VI. ADDRESSING THE GROWING AIRPORT NOISE POLLUTION PROBLEM

Aircraft noise is a serious yet often unappreciated and neglected form of pollution. The current method of regulating airport noise pollution is an unnecessarily complicated web of federal, state, and local legislative and judicial decisions. Lack of accountability among these various entities has produced an inefficient means of controlling airport noise.

Since the enactment of the Federal Aviation Act in 1958, Congress has struggled to attain the proper balance of federal and local involvement in airport noise abatement.²⁸¹ Traditionally, noise control has

²⁷⁷ See *Reauthorization of the FAA and Airport Improvement Program in Light of the Recommendations of the National Civil Aviation Review Commission: Hearings Before the Subcomm. on Aviation of the House Comm. on Transp. and Infrastructure*, 105th Cong. 1 (1998) (statement of John Duncan, Chairman, Subcomm. on Aviation) [hereinafter Duncan].

²⁷⁸ See 14 C.F.R. § 158.

²⁷⁹ See 49 U.S.C. § 47526; Notice and Approval of Airport Noise and Access Restrictions, 14 C.F.R. § 161.501(a). "Under no conditions shall any airport operator receive revenues under the provisions of the Airport and Airway Improvement Act of 1982 or impose or collect a passenger facility charge under section 1113(e) of the Federal Aviation Act of 1958 if the FAA determines that the airport is imposing any noise or access restriction not in compliance with the Airport Noise and Capacity Act of 1990 or this part." 14 C.F.R. § 161.501(b).

²⁸⁰ See *Fiscal 1999 Budget for the Federal Aviation Admin.: Hearing Before the Subcomm. on Transp. of the House Comm. on Appropriations*, 105th Cong. (1998) (statement of Betty Ann Krahnke, National Organization to Insure a Sound-Controlled Environment), available in 1998 WL 42050 [hereinafter Krahnke].

²⁸¹ See Noise Control Act of 1972, 42 U.S.C. §§ 4901-4918 (1994); Quiet Communities Act of 1978, 42 U.S.C. § 4913 (1994); Aviation Safety and Noise Abatement Act of 1979, 49 U.S.C. §§ 47501-47510 (1994); Airport Noise and Capacity Act of 1990, 49 U.S.C. §§ 47521-47533 (1994).

been the prerogative of local governments.²⁸² However, since the advent of commercial air travel in 1958, the unique nature of airport noise as compared to other sources of noise has required special treatment.²⁸³ As air travel increased, uncoordinated and inconsistent methods of addressing noise pollution at the local level motivated Congress to enact legislation ordering federal assistance with implementation of programs.²⁸⁴ This legislation failed to procure benefits and instead caused much confusion in federal and state courts as local municipalities struggled to define their roles in the regulation of airport noise.

Under the current regulatory scheme, local governments and airport proprietors remain responsible for landuse planning and noise abatement activities.²⁸⁵ With the enactment of the Aviation Safety and Noise Abatement Act of 1979 and the Airport Noise and Capacity Act of 1990, however, Congress also mandated the FAA to participate in noise compatibility planning.²⁸⁶ To receive federal funding in the form of discretionary grants or passenger facility charges, airports must comply with the standards set forth by these acts.²⁸⁷ Federal funding makes prior approval from the FAA necessary before airports can make alterations in their noise compatibility programs.²⁸⁸ For example, for several years, Van Nuys Airport in California expressed an interest in extending its nighttime curfew on aircraft flights from 11:00 p.m. to 10:00 p.m.²⁸⁹ The FAA responded to these efforts in September 1996, warning that the airport could lose its federal funding if the curfew was enacted through a "misunderstanding of federal law."²⁹⁰ It took the FAA until August 1997 before the Agency authorized the city to enact the proposed measures.²⁹¹ Thus, while local governments and airport proprietors are given the sole responsibility of implementing noise plans, the inability of airports to operate in

²⁸² See Kramon, *supra* note 64, at 92; Shapiro, *supra* note 32, at 6.

²⁸³ See 49 U.S.C. § 40103.

²⁸⁴ See 49 U.S.C. §§ 47501-47510, 47521-47533.

²⁸⁵ See *id.* § 47504.

²⁸⁶ See 14 C.F.R. § 151 (1997).

²⁸⁷ See 49 U.S.C. § 47526; 14 C.F.R. § 161.501(a).

²⁸⁸ See generally 49 U.S.C. § 47526; 14 C.F.R. § 161.501(a); Dade Hayes, *FAA May Hinder Airport Noise Plan*, L.A. TIMES, Sept. 6, 1996, at B3.

²⁸⁹ See Darrell Satzman, *Expansion of Airport Noise Curfew Ordered*, L.A. TIMES, Sept. 7, 1997, at B3.

²⁹⁰ Hayes, *supra* note 288, at B3.

²⁹¹ See Satzman, *supra* note 289, at B3.

today's economy absent federal funding grants tremendous authoritative power to the FAA.

A. *The Reestablishment of EPA's Office of Noise Abatement and Control*

When Congress eliminated ONAC's funding in 1982, EPA, although far from completing its agenda, had made an important start in implementing Congress' directives under the Noise Control Act of 1972.²⁹² Since the termination of these funds, attempts at federal noise abatement activity have experienced limited effectiveness, while state and local activity has suffered a marked decline as well.²⁹³ Although ANCA, enacted in 1990, is forcing air carriers to comport with stricter noise emission standards by the year 2000, these standards are based on recommendations made by EPA in the 1970s.²⁹⁴

The transition to an all stage three fleet is a necessary step toward limiting aircraft noise, but the overall growth of the air travel industry is already threatening the progress these regulations have had in the United States.²⁹⁵ In addition to the growing number of flights, the size of commercial aircraft has been increasing, requiring the use of larger and more powerful engines.²⁹⁶ This use of larger aircraft has offset some of the noise reduction achieved through the stage three transition.²⁹⁷

These problems require an independent agency, separate from the FAA, to encourage the development and introduction of new aviation technology. New studies repeatedly show detrimental links between high noise levels and health and quality of life issues.²⁹⁸ Aircraft carriers are unlikely to execute changes in their fleets designed to solve these recurring problems without mandatory legislation or substantial financial incentives. The FAA is highly influenced by the interests of the air carrier lobby, as exemplified by the passage of ANCA in 1990.²⁹⁹ In addition to the role of airports and air carriers, the FAA is influenced by competing concerns within the executive and legislative

²⁹² See Shapiro, *supra* note 32, at 19.

²⁹³ See *id.*; Suter, *supra* note 147, at D03.

²⁹⁴ See MacGlashan, *supra* note 49, at 55.

²⁹⁵ See SUTER, *supra* note 21, at 7.

²⁹⁶ See MacGlashan, *supra* note 49, at 57.

²⁹⁷ See *id.*; Morella, *supra* note 44, at 2.

²⁹⁸ See SUTER, *supra* note 21, at 36.

²⁹⁹ See Shapiro, *supra* note 32, at 59.

branches of the federal government.³⁰⁰ The FAA's direct responsibility for and investment in air traffic control equipment and personnel, and the publicity received by aircraft accidents, causes the FAA to dedicate more resources to airspace management and safety over airport problems.³⁰¹ The FAA's primary interest in airports centers on the administration of grants which are linked to FAA's air traffic and safety responsibilities.³⁰² Thus, without an order, or at least encouragement from an independent source, the FAA will continue to address inefficiently the growing airport noise pollution problem.³⁰³

Many commentators recommend the reinstatement of ONAC within EPA to study the impact of aircraft noise on human health and well-being.³⁰⁴ ONAC as it was structured in the 1970s, however, will not adequately serve the needs of today's communities in combating airport noise. ONAC must have a more authoritative role in implementing new guidelines and standards. In the 1970s, ONAC made important contributions which the FAA often disregarded in enacting its regulations.³⁰⁵ An independent commission composed of representatives of ONAC, the FAA, and Congress should also be established to ensure equality among the various federal agencies regulating airport noise pollution.

Some anti-noise advocates oppose the reopening of ONAC because of their beliefs that it will not provide real help to citizens suffering as a result of aircraft noise.³⁰⁶ They argue that the appropriations proposed under the Quiet Communities Act are far less than when ONAC was in operation, the office will still be unable to regulate aircraft noise, and the office will still be guided by an out-of-date Noise Control Act.³⁰⁷ However, the reopening of ONAC, even with a limited budget, constitutes congressional acknowledgement of the continually expanding aircraft noise problem, which may have positive effects on the FAA's regulatory structure.³⁰⁸

³⁰⁰ See Creswell, *supra* note 45, at 53.

³⁰¹ See *id.* at 53-54.

³⁰² See *id.* at 54.

³⁰³ See MacGlashan, *supra* note 49, at 58.

³⁰⁴ See NRDC, *supra* note 31.

³⁰⁵ See Jenkins, *supra* note 121, at 1033; Shapiro, *supra* note 32, at 16.

³⁰⁶ See Bronzaft, *supra* note 15.

³⁰⁷ See *id.*

³⁰⁸ See *id.*

B. *The DNL Measurement of Noise*

In addition, to relieve airport noise pollution, the FAA should reassess its standards for measuring aircraft noise.³⁰⁹ The DNL measurement is criticized because it fails to measure adequately the effects of a particular noise source.³¹⁰ Aircraft noise is considered impulsive noise, yet a DNL registers an averaging of sound over a twenty-four hour period.³¹¹ An averaging does not account for the high noise levels that often accompany single-event noise emissions such as aircraft noise.³¹² Support for research and the implementation of new technology are necessary to measure adequately an airport's overall sound.³¹³ Commentators suggest a metric which takes into account the single noise event by considering the peak noise value and the frequency of single events.³¹⁴

At the minimum, the FAA should reconsider its current limit of 65 Ldn, and lower that standard as necessary.³¹⁵ In the 1970s, ONAC recommended a DNL of 55 Ldn to limit the negative effects of noise on individuals.³¹⁶ The office's original work concerning the Ldn emphasized the limitations of this standard of measurement and the potential need to supplement it in appropriate cases.³¹⁷ However, after ONAC was disbanded, the FAA disregarded ONAC's precautionary warnings and adopted 65 Ldn as its universal measure, and the Agency has maintained that level ever since.³¹⁸ Increasing numbers of studies show the detrimental impact of noise on communities which register high DNLs.³¹⁹ The FAA should authorize independent studies

³⁰⁹ See NRDC, *supra* note 31.

³¹⁰ See Shapiro, *supra* note 32, at 60; SUTER, *supra* note 21, at 4.

³¹¹ See NRDC, *supra* note 31; MacGlashan, *supra* note 49, at 55; SUTER, *supra* note 21, at 4.

³¹² See NRDC, *supra* note 31; MacGlashan, *supra* note 49, at 55. "This averaging process smoothes out the peaks, and it is the peak aircraft noise which is so intrusive. Noise levels at 85 and 95 dBA are not easy to ignore, especially at night when one is trying to sleep." MacGlashan, *supra* note 49, at 55-56.

³¹³ See MacGlashan, *supra* note 49, at 55-56.

³¹⁴ See *id.*

³¹⁵ See *id.*; Shapiro, *supra* note 32, at 60.

³¹⁶ See NRDC, *supra* note 31; Shapiro, *supra* note 32, at 4 n.18. A 1995 study by the National Resource Defense Council concluded that the "threshold of 65 dB significantly underestimates the level at which many people are annoyed or impacted by aircraft noise." NRDC, *supra* note 31.

³¹⁷ See Shapiro, *supra* note 32, at 60 n.355.

³¹⁸ See *id.*

³¹⁹ See generally NRDC, *supra* note 31; HANSEN & SANDERS, *supra* note 32; SUTER, *supra* note 21, at 36.

to evaluate the adequacy of current measurement methods and implement new regulations enacting these findings.³²⁰

C. *Liability for Aircraft Noise*

Another approach to reducing airport noise pollution is to distribute the liability for damages caused by airport noise among the actors involved in its regulation. Because federal law does not preempt inverse condemnation and nuisance causes of action, citizens may have valid claims for damage to their health or property caused by airport noise. In *Griggs v. Allegheny County*, however, the U.S. Supreme Court established the rule that airport proprietors rather than the federal government are responsible for damages resulting from aircraft noise.³²¹ This "single liability/shared responsibility" situation disproportionately places burdens on private property owners.³²² These property owners are supposed to be protected by the "just compensation" clause of the Fifth Amendment, yet they do not receive reimbursement from the federal government for the money paid to plaintiffs in such actions.³²³

The rule of law espoused in *Griggs* is inconsistent with the inherent diversity among decisionmakers associated with the regulation of aircraft noise.³²⁴ The fact that an airport proprietor is solely liable for noise-related injuries limits the concern of airlines, other local governments, the states, and the federal government.³²⁵ Public and private sector interests should strive to compensate noise-afflicted property owners when fairness dictates.³²⁶ Compensation may also reduce the level of political controversy associated with airport development projects and airport operations.³²⁷ Compensation will most likely cause more efficient decisionmaking about airports and airways as well.³²⁸

³²⁰ See Shapiro, *supra* note 32, at 60. "EPA's results are more likely to receive general acceptance since EPA does not share the FAA's institutional conflict of interest." *Id.*

³²¹ See *Griggs v. Allegheny County*, 369 U.S. 84, 89-90 (1962).

³²² See Creswell, *supra* note 45, at 30.

³²³ See *id.* at 88.

³²⁴ See *id.* at 7.

³²⁵ See *id.* at 31.

³²⁶ See *id.* at 88.

³²⁷ See Creswell, *supra* note 45, at 88.

³²⁸ See *id.*

D. *More Funding Under AIP for Noise-Mitigation Projects*

While improved technology and revised metrics for measuring airport noise are necessary to control airport noise pollution, in the short term, more funding for noise compatibility planning is required to ameliorate the current noise situation. State and local governments are largely dependent on FAA approval, and thus federal funds, in order to establish noise abatement programs.³²⁹ Because the FAA has much discretion in allocating its already insufficient AIP funds, airport proprietors are left with the responsibility of enforcing noise mitigation plans without adequate funding.³³⁰ In addition, passenger facility charges used to fund eligible airport-related projects are primarily used for capacity and safety programs rather than noise abatement efforts.³³¹ The cost of landuse control measures used to ameliorate airport noise is not funded adequately by the federal government, nor do state and local governments have the resources to fund such measures.³³²

Prospective noise abatement actions, although not a permanent solution to the problem of airport noise pollution, do more to control the problem than retroactive damage suits and penalties. Although individuals are limited in the relief they can seek under common law doctrines such as nuisance, airport proprietors continue to remain responsible for any liability imposed.³³³ Damages paid by airport proprietors to individual property owners are an unnecessary use of the already limited funds available to proprietors. Noise abatement activities may further diminish the liability imposed on airport proprietors, thus freeing up funds to allocate to control and amelioration techniques.

CONCLUSION

The significant increase in air traffic over the past decades has resulted in a substantial number of noise complaints and consistently high DNL readings around airports located in the United States. Studies show both the psychological and physiological damage aircraft noise causes in individuals. Although federal statutes and regu-

³²⁹ See *id.* at 78.

³³⁰ See *id.* at 78-79.

³³¹ See Duncan, *supra* note 277, at 1.

³³² See discussion *supra* Part V.A.

³³³ See *Bieneman v. City of Chicago*, 864 F.2d 463, 472-73 (7th Cir. 1988).

lations have preempted state and local control over noise pollution, local entities remain responsible for implementing noise compatibility programs and regulating land use. This framework results in a complicated scheme of federal, state, and local legislation and case law, while airports and their surrounding communities are left to decipher their correct role. The FAA, as the implementer of federal noise abatement policy, has failed in many of its objectives. Additional steps such as the reestablishment of ONAC, a change in the DNL measurement of noise, shared liability for damage caused by aircraft noise, and more funding for noise mitigation projects need to be taken to address adequately the growing airport noise pollution problem in the United States.