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Aircraft Noise Pollution: Is Land Use Planning the Answer?

By MILAN M. DOSTAL*

INTRODUCTION

The advancement of twentieth century industrial civilization has generated problems of pollution never before encountered by man. While this large scale attack is aimed over a broad spectrum of the human physical senses, one of the most insidious of these pollutants is noise.

The level of noise has been increasing in the urban environment at the rate of 1 dB¹ annually². If the level of sound keeps increasing at the same rate, some authorities believe that by the year 2000 deafness and loss of hearing will be common, if not universal, for those who dwell within the noisiest sections of our cities.³

Apart from the general rise of the sound level, localized "acoustic slums" have been created near airports in recent years. The Environmental Protection Agency has reported that 16 million Americans are exposed to from moderate to very severe aircraft noise levels.⁴ Noise from major airports has made living impossible in areas as far as five miles from an airport.⁵ Within such areas noise disrupts conversation, sleep, education, and the tranquility that most people expect to enjoy with home occupancy.⁶

Noise is usually described as sound that is not wanted by those who are exposed to it.⁷ Aircraft noise is usually less tolerable to

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1. "dB" is the abbreviation for the decibel, the basic unit of measurement of sound.

2. Remarks by Alvin F. Meyer, Jr., Acting Director, Office of Noise Abatement and Control, Environmental Protection Agency to National Organization to Insure a Sound-Controlled Environment (N.O.I.S.E.), May 19, 1971, Washington, D.C.

3. See generally, EPA, PUBLIC HEALTH AND WELFARE CRITERIA FOR NOISE (1973); and EPA, INFORMATION ON LEVELS OF NOISE REQUISITE TO PROTECT PUBLIC HEALTH AND WELFARE WITH ADEQUATE MARGIN OF SAFETY, (1974).

4. EPA, REPORT ON AIRCRAFT-AIRPORT NOISE, at 14 (1973).

5. Berger, *Nobody Loves an Airport*, 43 S. CAL. L. REV. 631, 737 (1970).

6. DOT-NASA, *Civil Aviation Research and Development Policy Study* 5-3 (1971). As an example of the disturbance airport noise can cause, the area affected by excessive noise around J.F.K. Airport in New York includes 35,000 dwellings, 22 public schools, and several dozen churches and clubs.

7. C.M. HARRIS, HANDBOOK OF NOISE CONTROL, 1-11 (1957).

the exposed person because it not only interferes with his tranquility, but he realizes that those who are generating the source of his disturbance are doing so at a profit. Thus, his tolerance of this type of noise can be lower because it is his quality of human life that is being degraded in the name of technological advancement and progress—usually someone else's economic progress.

The available data on the effects of noise on the human body consistently show that a high annoyance factor is exemplified with interference with speech communication, physiological and psychological stress reactions,⁸ and the possibility of hearing loss.⁹

Effective control of aircraft noise has been an extremely difficult problem. Regulation has not kept pace with the attempted control of other pollution problems such as water or air quality. Among the factors causing this delay have been the lack of citizen awareness of the seriousness of the problem, apathy of those not affected, justification based upon "progress", "advancement" or "economic necessity", physiological and psychological differences in the effect of sound on individuals, and the conflict between the various regulating agencies.

THE NATURE OF NOISE POLLUTION

Most complaints about aircraft noise come from citizens who merely hear the noise and are disturbed by it. This type of subjective evaluation is usually an inadequate standard upon which to

8. See SUB-COMMITTEE ON NOISE ON CONSERVATION OF HEARING AND RESEARCH CENTER, SUB-COMMITTEE ON NOISE, GUIDE FOR CONSERVATION OF HEARING IN NOISE (1964); W.J. STEWART, U.S. DEPARTMENT OF HEALTH, EDUCATION AND WELFARE, HEALTH AND THE URBAN ENVIRONMENT (Public Health Service Reprint, Oct. 28, 1966); *Hearings on Noise: Its Effect on Man and Machine, Before Special Investigating Sub-Committee of House Commission on Science Astronautics*, 86th Cong., 2nd Sess., (1960); Dr. J.D. Dougherty and D.O.I. Welsh, *New England Journal of Medicine*, Oct. 6, 1966, See Dr. J. Buchwalr, *Trial* 6 (1966).

Some reactions to noise effects are as follows:

Emotional

anger
annoyance
anxiety
hostility
indignation
tension

Non-Emotional

distraction
fatigue
increased effort
inefficiency

9. See the American Speech and Hearing Association publication, CONFERENCE PROCEEDINGS, NOISE AS A PUBLIC HEALTH HAZARD (1968); EPA, NOISE POLLUTION, 6, (Aug. 1972); Gould and Sullivan, *Noise*, 216 *Annals of the New York Academy of Science* 17, 19 (1973).

base effective legislation, conduct successful litigation, or even give sufficient impetus to spawn voluntary noise abatement action. Thus, a scientific analysis of sound as an acoustic vibration capable of producing an auditory sensation is a more logical and objective basis for attempting to describe and control this unusual type of pollution.

Objective measurements of aircraft sound although serving a bearing on but not necessarily being solely responsible for the sound being "unwanted", are as follows:

1. *Decibel Level.* The relative measure of sound pressure is described in decibels on the logarithmic scale.¹⁰ Hence, when the

10. The scale used under California regulations for the measurement of noise levels is the decibel scale. A practical application of which is described in Hildebrand, *Noise Pollution: An Introduction to the Problem and An Outline for Future Legal Research*, 70 COLUM. L. REV. 652, 670 (1970), as follows:

		Various Sounds in Decibels	
		200	Noise Weapon
		190	
Lethal Level		180	
		170	
		160	
		150	Jet Aircraft at 200'
		140	
Threshold of Pain		130	Pneumatic Riveter; Air Raid Siren
		120	
		110	Power Mower
		100	Food Blender, Motorcycle
Danger Level		90	Sports Car; Heavy Truck
		80	
		70	Busy Street
		60	Normal Conversation
		50	Quiet Street, Average Urban Interior
		40	Quiet Room; Residential Area at Night
		30	Tick of Watch
		20	Whisper
Theshold of Hearing		10	Leaves Rustling in the Wind
		0	

level goes up from a normal conversation (assuming approximately 60dB) to a jet aircraft overflight (assuming only 150dB) the ear suffers not just a little more than doubling of pressure, but a one billion fold increase! It should be noted that the Environmental Protection Agency (EPA) reports that contribution to hearing impairment begins at 70dB exposure.¹¹

2. *Duration.* The amount of time that the sound is heard, commonly measured in seconds or minutes.

3. *Acoustic Frequency.* This is a measure of the pitch, usually designated as "Hertz" or cycles per second. The higher the pitch, the greater number of complete oscillations per second.

4. *Time of Day.* Disturbances during normal sleeping hours are more annoying than if the same sound is heard during a daytime activity.

5. *Number of Occurrences.* An occasional noise is usually less objectionable than a constant repeating noise that does not cease.

6. *Fear Factor—Closeness.* Aircraft accidents reported by the media cause a psychological subconscious fear of bodily harm or injury to others upon the hearing of oncoming aircraft.

Human sensitivity to sound is a function of all 6 of the above factors. Future research will probably isolate additional ones.

Since the usual human ear discriminates against low frequencies, (i.e., is more sensitive to higher frequencies), a low volume of high pitched sound is heard more easily than a low pitched sound of the same volume. In order to compensate for this discrimination, measuring devices have been prepared to differentiate the volume of sound having different wave lengths. Low frequencies are discriminated against most severely in what is known as the commonly used "A" weighting network. Thus, the "A" network more nearly records what the normal ear hears. Accordingly, most ordinances dealing with the sound decibels also specify the weighing system that is used (e.g. 100 dBA).¹²

It is not the purpose of this article to go into technical analysis of noise, nor the measurement thereof. One would be remiss, however, if a mere listing of some of the methods of measurement was

11. EPA, NOISE POLLUTION, *supra* note 9, at 6.

12. See, e.g., TITLE 4, CAL. ADM. CODE § 5000-6080.5 (West 1970).

not mentioned. Authorities in the "noise control industry" have developed measuring techniques of noise exposure and "community response" indexes, euphemistically named in the alphabet soup fashion:¹³

B	Total Noise Load
CNEL	Community Noise Equivalent Level
CNR _A	Composit Noise Ratings for Aircraft
CNR _C	Composite Noise Ratings for Community
L _{dn}	Day-Night Level
L _r	Rating Sound Level
N	Isopsophic Index
NEF	Noise Exposure Forecast
\overline{NI}	Noisiness Index
NNI	Noise and Number Index
NPL	Noise Pollution Level
NR	Noise Rating Curves
\overline{Q}	Mean Annoyance Level
TNI	Traffic Noise Index
WECPNL	Weighted Equivalent Continuous Perceived Noise Level

This article will not attempt to describe the various community response rating formulas. The federal government has until early 1975, been leaning toward the use of the Noise Exposure Forecast (NEF) Formula. This formula is far more complicated than the adopted California formula known as the Community Noise Equivalent Level (CNEL)¹⁴ in that the NEF uses an Effective Perceived

13. K.S. PEARSONS & R.L. BENNETT, HANDBOOK OF NOISE RATINGS, NATIONAL AERONAUTICS AND SPACE ADMINISTRATION, (NASA CR-2376, April, 1974).

14. *Community Noise Exposure*

The total noise exposure for a day is specified by the community noise equivalent level (CNEL) in dB, and may be expressed as:

$$CNEL = \overline{SENEL} + 10 \log N_c - 49.4, \text{ dB}$$

where

$$N_c = (N_d + 3N_e + 10N_n)$$

$$\text{or } = (12\overline{n}_d + 9\overline{n}_e + 90\overline{n}_n)$$

N_b, \overline{n}_b = total number and average number per hour, respectively, of flights during the period 0700 to 1900,

EPNL = arithmetic mean value of EPNL for each single event at the point in question. It is assumed that the range of EPNL, divided by N_r is less than about 1.5 EPNdB. When this is not true, then the NEF value must be computed for each aircraft type separately and the

Noise Level (EPNL) which incorporates frequency band weighing rather than more simple straight-forward sound level measurement measured in dB on the "A" scale.¹⁵ Because of its higher sophistica-

total value determined by a logarithmic sum

$$N_t = (N'_d + 16.7 N_n) \text{ or} \\ = (15\bar{n}_d + 150\bar{n}_n)$$

N'_d, \bar{n}_d = total number and average number per hour, respectively, of flights during the day period 0700 to 2200. (Note: This is not the same day period as for CNEL.)

N_n, \bar{n}_n = the total number and average number per hour, respectively, of flights during the night period 2200 to 0700, as for CNEL.

The constant (-88.0) dB includes an arbitrary -75 scale-changing constant and a reference number of daytime flights of 20. The constant 16.7 accounts for the 10-to-1 weighting factor for flights during the 9-hour night period.

Single Event Noise

This is specified by the single event noise exposure level (SENEL) in dB and can be closely approximated by:

$$\text{SENEL} = \text{NL}_{\text{max}} + 10 \log_{10} t_{\text{ea}} \text{ dB} \quad (1)$$

where

NL_{max} = maximum noise level as observed on the A scale of a standard sound level meter,

and

t_{ea} = effective time duration of the noise level (on A scale) in seconds

The effective duration is equal to the "energy" of the integrated noise level (NL), above a specified threshold noise level divided by the maximum noise level, NL_{max} , when both are expressed in terms of antilogs. It is approximately $\frac{1}{2}$ of the 10 dB down duration, which is the duration for which the noise level is within 10 dB of NL_{max} .

A measure of the average integrated noise level over one hour is also utilized in the proposed standard. This is the hourly noise level (in dB), defined as:

$$\text{HNL} \sim \overline{\text{SENEL}} + 10 \log n - 35.6, \text{ dB} \quad (2)$$

where

$\overline{\text{SENEL}}$ = arithmetic mean value of SENEL for each single event

and

n = number flights per hour.

It is assumed for this approximation that the difference between the maximum and minimum values of SENEL for the hour, divided by n , is less than about 1.5 dB. When this is not the case, the exact integration method specified in the noise standard should be used.

15. *Id.*

tion, NEF methodology costs approximately six to eight times more than measurement in CNEL methodology.

Some agencies of the federal government have adopted or indicated adoption of the NEF¹⁶ while others have opted for CNR.¹⁷ However, recent pronouncements indicate that the EPA will adopt the Day-night level (L_{dn}) technique (which is quite similar to the CNEL) as the recommended uniform measuring system to determine predicted community response. This will have the effect of all federal agencies changing to a uniform standard of measurement. In view of the similarity, it is recommended here that California should change from CNEL to L_{dn} technology for consistency.

In 1969, the California Legislature mandated the Department of Aeronautics to adopt noise standards¹⁸ applying to both public and private airports governing the operation of aircraft and aircraft engines.¹⁹ These noise standards must be complied with before airports receive operating permits from the department. The department was required to base its standards on the following:

1. The level of noise acceptable to a reasonable person residing in the vicinity of an airport;
2. Due consideration of the economic and technological feasibility of complying with the standards; and,
3. Permitting the maximum amount of local control and enforcement.

The acoustical standard adopted is the Community Noise Equivalent Level (CNEL).²⁰ This formula²¹ takes into account the number of fly-bys, the magnitude of noise from each fly-by, the duration of the noise, and how the total number of fly-bys is distributed among three time periods—day, evening or nighttime. The magnitude of the noise is based on the A-weighting circuit on sound level meters which approximates the response of the normal human ear to each frequency.

Each airport generates a noise environment which can be described by drawing CNEL noise contours of equal exposure on a map.²² These noise contours can be predicted by assuming the time

16. Dept. of Housing and Urban Development, Veterans Administration.

17. United States Navy, United States Air Force.

18. Cal. Stats., 1969, Ch. 1585 (Codified at CAL. CODE OF CIV. PROC., § 21661 *et seq.* (West 1965)).

19. TITLE 4, CAL. ADM. CODE, § 5000-5080 (West 1970).

20. TITLE 4, CAL. ADM. CODE, § 5006(f) (West 1970).

21. See *supra*, note 14.

22. Commonly known as the "airport noise footprint".

and number of aircraft using the airport, their flight paths, and their operational techniques.

Like any community response noise exposure formula, the CNEL and L_{dn} are both based on many assumptions. Obviously, the validity of the formula is only as valid as the assumed input. Nevertheless, in spite of attack,²³ the CNEL is still the most widely used procedures developed to date. California's anticipated change from the use of CNEL to L_{dn} should not make any difference in accomplishing the goals of the California noise standards.

SOURCE CONTROL OF AIRCRAFT NOISE

The control of any pollution is generally most effective when imposed upon the generator of source of the pollution. In the area of aircraft noise, a problem arises whether to place the responsibility on the airports or on the airplanes as they can both be termed "sources".

Control of these sources of noise pollution began with litigation and was followed by legislation, but both methods have severe limitations. Probably the most promising method of control is that of voluntary action, but expensive self-policing of pollution by any industry is rare and usually requires successful litigation and stiff legislation to get the leaders of an industry to include pollution control as a necessary cost of doing business.

VOLUNTARY ACTION AS A CONTROL MECHANISM

A recent advancement in the alleviation of unnecessary aircraft noise has been the institution of voluntary noise abatement procedures by some aircraft and airport operators. Voluntary cooperation effecting decreased noise exposure around airports has been recognized by the California Department of Aeronautics. According to Joseph R. Crotti, director California Department of Aeronautics:

There are many ways in which the airport proprietors, airport operators, local government, pilots, and the Department (of Aero-

23. In *A.T.A., et al. v. Crotti, et al.*, C-72-2189-WTS, (N.D. Cal. 1975), a three judge U.S. District Court panel upheld the cumulative noise exposure level formula (CNEL) while declaring enforcement of the Single Event Noise Exposure Level Regulation (SENEL) unconstitutional.

nautics) can work cooperatively to diminish noise. For example, the airport proprietor can establish rules for the use of his airport which would exclude aircraft on the basis of noise, thus encouraging the user airlines to use quieter aircraft as they become available. The airport proprietor can regulate which aircraft use which runways during various times of the day. Through the facilities he provides and the contractual agreements he makes with user airlines, he can effect the rate of increase of flight operations. Although he does not have direct jurisdiction over flight paths at distances from the airport, those paths can be influenced by preferential runway use. With the cooperation of local government and County Airport Land Use Commissions to encourage compatible land use near the airport, it will be possible to preserve the utility of the airport to the community while achieving environmental compatibility.²⁴

Unfortunately, Director Corotti's statements have not yet been taken to heart by most airline operators and airport owners.

While still resisted by most of the air industry, certain airlines have taken a leadership position in this area. Notably, in the forefront have been Air California²⁵ and Northwest Orient Airlines, both of whom have pioneered with airport management to implement quieter aircraft.

The maximum noise reduction effectiveness of any one specific operational procedure is dependent on many technical factors and must be tailored to meet each specific situation.²⁶ Significant reduction in noise is possible by combining operational noise abatement procedures and oftentimes is even more economically attractive to the airline than the "normal" procedure.²⁷

Among the techniques available to airport operators to reduce the noise exposure to sensitive areas are schedule limitations,²⁸ air-

24. STATE OF CALIF. DEP'T AERONAUTICS, DIGEST OF ACTIVITIES AND PROGRAMS, (Aug. 16, 1971).

25. While most airlines have recently begun articulating activity in noise abatement, Captain Jon Tucker of Air California and Captain Paul Soderland, formerly of Northwest Orient Airlines, should be singled out as pioneers in promoting the use of noise abatement operational procedures contrary to the early industry position.

26. Significant factors include, *inter alia*, type of aircraft, type of engines, use of sound abatement material (SAM), weight of aircraft, location of areas of noise sensitivity, timing and amount of thrust application, and reduction flap settings, maximum angle (full power) climbouts, higher initial approach altitudes to intercept glide slopes, steeper glide slopes and limitations on use of thrust reversers.

27. EPA, REPORT ON OPERATIONS ANALYSIS INCLUDING MONITORING ENFORCEMENT, SAFETY, AND COSTS (July, 1973).

28. Orange County Airport, California, limits the air carriers to 38.3 average daily departures (based on the annual average). Hourly quotas on IFR operations have been imposed by the FAA for safety purposes by reducing congestion at John F. Kennedy, La Guardia, Newark, O'Hare, and Washington Airports.

craft type limitations based on noise emission,²⁹ night curfews,³⁰ aircraft weight or trip length limitations,³¹ preferential runway use,³² preferential flight paths,³³ engine run up restrictions, and noise barriers. As more imaginative planning as well as economic and technical resources are brought to bear on this problem, other techniques will become available to the aircraft and airport operators to voluntarily reduce noise pollution.

To date, the only airport that has federally imposed noise abatement regulations is National Airport at Washington, D.C.³⁴ Since this airport is owned and operated by the United States, a long standing precedent has been set to permit airport operators to re-

29. The Port of New York Authority has a single event noise event limit (SENEL) of 112 PNdB at any of its sound monitoring stations. Los Angeles International Airport has a policy which would permit only aircraft which comply with 14 C.F.R., Part 36, Appendix C, Noise Levels.

In late March, 1975, the operator of Santa Monica Airport, California, completely prohibited jet flights imposing both pilots and FAA controller to stiff criminal penalties. A \$15,000 fine could be imposed on the pilot and a misdemeanor charge could be lodged against the controller who authorizes a jet landing—even in an emergency.

30. Night curfews are in effect at least at the following:

- Washington National (10 p.m.-7 a.m.)
- Orange County Airport, California (10 p.m.-7 a.m.)
- Paris (Orly) France
- Stuttgart, Germany
- Osaka, Japan
- Tokyo, Japan
- London (Heathrow), England

Los Angeles International Airport has effected an "over Ocean" night time preferential runway program which creates the same effect.

31. Weight reduction permits more rapid climb and/or permits greater power cut-back thereby reducing thrust noise.

32. 14 C.F.R. § 91.87(g) requires pilots to use, whenever possible, preferential runways as determined by the FAA, after consulting with airport operators and airlines. The effect of this designation is dependent on weather conditions, configuration of the runway structure, and the location of noise sensitive areas.

33. Aircraft are required to follow the Potomac River while approaching Washington National Airport.

34. At Washington National Airport, the air carriers are required to reduce a thrust during climbout from a point 3 nautical miles northbound or 4 nautical miles southbound until reaching an altitude of 6,000 feet or distance of 10 nautical miles, whichever occurs first. Aircraft on approach must follow the Potomac River. A jet curfew is in effect from 10:00 p.m. to 7:00 a.m. Weight and climbout capability are considered in that only certain types of aircraft are permitted to use the airport (the largest being Boeing 727's) and trip lengths are limited to 650 miles (with exceptions for nonstop flights to 7 cities within 1,000 miles).

quire reasonable operating procedures to be followed by the aircraft operators as a condition precedent to the use of the airport.

The best example of voluntarily imposed noise abatement procedures by an airport operator is Orange County Airport in Southern California proving that imaginative and bold approaches to a serious problem can help in part to alleviate, if not entirely solve, the noise problem in "jet alleys". The County of Orange, the owner and operator of the airport has imposed noise abatement procedures to be followed by jet aircraft as conditions contained in leases for terminal space used by airlines.³⁵ This is a highly satisfactory way of accomplishing by agreement and under management powers something which the county could not ordinarily do under its governmental powers as now constituted.

Another example of extremely bold efforts to curb aircraft noise has been the March 1975 action of the City of Santa Monica in utilizing its powers as the owner and operator in eliminating jet traffic.

LITIGATION AS A CONTROL MECHANISM

Litigation has been used somewhat effectively as a noise control device. Perhaps its most noteworthy effect is that it produces voluntary action by those wishing to avoid future law suits. Additionally, it prods responsive action by legislators eager to heed the demands of plaintiff constituents.

The law dealing with noise control as developed by the courts tends to provide relief by granting damages on a case by case basis. Through the years, certain general factors have been listed as being important to recovery including the character and duration of the noise and how each might affect a person of normal sensibilities.³⁶

Until recently, airport noise litigation primarily involved prop-

35. Orange County, California, has imposed several operating restrictions. County Airport and users thereof, including a limit of 38.3 average daily departures hours, a 10:00 p.m. to 2:00 a.m. night curfew, an 10° minimum deck angle for takeoffs, a limit of number of commercial carriers to the 1974 number, instituting a preferential runway use program for the morning hours, imposition of a \$1,000.00 fine pursuant to state regulations exceeding upper SENEL limits, limiting aircraft weight to 95,000 lbs., and officially admonishing noisy aircraft operators.

36. *Smith v. Western Way Company Conservation Association*, 380 Mich. 526, 158 N.W.2d 463 (1968); *Winget v. Winn-Dixie Stores, Inc.*, 242 S.C. 152, 130 S.E.2d 363 (1963) (no relief for incidental noise from supermarket); *Mathewson v. N.Y.S. Thruway Authority*, 11 App. Div. 2d 782, 204 N.Y.S.2d 904 (1960), *aff'd* 9 N.Y.2d 788, 174 N.E.2d 754 (1961) (no relief for night-time incidental noise of trucks and heavy equipment on nearby highway).

erty owners against the federal government, airport operators, and craft owners and operators.³⁷ In an attempt to protect their interest, property owners have typically employed the common law doctrines of trespass, negligence, inverse condemnation, and more recently, nuisance.³⁸

Trespass

Common-law doctrine presumes that he who owns the soil owns everything above to the heavens and below to the center of the earth.³⁹ Thus, anyone who invades the airspace above by flying an aircraft over the land would technically be guilty of a trespass.

In general, however, strict application of old trespass theories has not proved helpful and courts found it necessary to "liberalize" them in order to take into account recent technological advances unforeseen by the common law.

One modern trespass theory divides the air into two zones with the landowner owning that contained in the lower zone, but not that in the upper. The landowner controls only so much of the air above the land as is essential to the complete use and enjoyment of the land beneath.⁴⁰ This test is hard to apply since the amount of space in each zone varies with the facts of each case.⁴¹

Another theory denies any ownership of unused airspace.⁴² The first *Restatement of Torts* recognized a privilege of flight through airspace only under certain circumstances as follows:

An entry above the surface of the earth, in the airspace in the possession of another, by a person who is traveling in an aircraft is privileged if the flight is conducted (a) for the purpose of travel through the airspace or for any other legitimate purpose, (b) in

37. See generally, Harrison, *Use and Enjoyment of Land—Compensation for Noise Damage*, 4 NAT. RES. L. REV. 429 (1971).

38. For an extensive discussion of inverse condemnation and nuisance as airport noise abatement devices, see Fadem and Berger, *A Noisy Airport is a Damned Nuisance*, 3 S.W.U.L. REV. 39 (1971); and Comment, *The Jet Set and the Law: Developments in Aircraft Noise Law in California*, 1 PACIFIC L.J. 581 (1970).

39. See 75 AM. JUR. 2d, *Trespass* § 13 (1974).

40. *Swetland v. Curtiss Airports Corp.*, 55 F.2d 201 (6th Cir. 1931).

41. *Mitland v. Twin City Aviation Corp.*, 254 Wis. 541, 37 N.W.2d 74 (1969).

42. See *Hinman v. Pacific Air Transport*, 84 F.2d 755 (9th Cir. 1936), in which the court denied recovery for flights within five feet of unoccupied land.

a reasonable manner, (c) at such a height as not to interfere unreasonably with the possessor's enjoyment of the surface of the earth and the air space above it, and (d) in conformity with such regulations of the state and federal aeronautical authorities as are in force in the particular state.⁴³

However, in *Restatement Second of Torts*, former section 194 was eliminated, and Section 159 now indicates when flight may be considered a trespass. Section 159 reads in pertinent part as follows:

(1) Except as stated in Subsection (2) a trespass may be committed on, beneath, or above the surface of the earth.

(2) Flight by aircraft in the airspace above the land of another is a trespass if, but only if,

(1) it enters into the immediate reaches of the air space next to the land, and

(b) it interferes substantially with the other's use and enjoyment of his land.⁴⁴

Section 159 eliminates any problem of interpretation by declaring that such intrusions are, by definition, non-trespassory. This distinction removes from the intruder the burden of proving that his trespass was so conducted as to be privileged, and shifts the burden to the landowner to prove substantial interference with his use and enjoyment.

Generally, the law of trespass has proved unsatisfactory as a course of redress for an action based on noise pollution emanating from airplanes. Not only must the flight be unprivileged as determined by one of the above tests, but historically, there has been an insistence by some courts upon the technical requirement of the physical entry of something tangible, with appreciable mass, and visible to the naked eye, before trespass could be found; thus noise and vibrations alone would not be enough. However, now there have been decisions finding a trespass in the entry of invisible gases and microscopic particles where they do harm.⁴⁵ These decisions and the recent scientific acknowledgment that hearing impairment begins at the level of 70dB⁴⁶ suggests the possibility that the entry of noise by itself will be sufficient grounds upon which to base an action for trespass. When enough data is finally collected on the extent of harm inflicted by various amounts and characteristics of noise and the state of the art of monitoring becomes sufficiently exact courts will surely be less hesitant in allowing recovery for

43. RESTATEMENT OF TORTS, § 194 (1938).

44. RESTATEMENT (SECOND) OF TORTS, § 159 (1966).

45. *Gregg v. Delhi-Taylor Oil Corp.*, 162 Tex. 26, 344 S.W.2d 411 (1961); *Martin v. Reynolds Metals Co.*, 211 Ore. 86 P.2d 790, cert. denied, 362 U.S. 918 (1959).

46. See Section Nature of Noise Pollution, at —.

noise damage. Given the accelerated rate of research in the field of noise pollution, it would seem appropriate to say that a cause of action for noise trespass is on the horizon.

Negligence

A natural result of the blossoming of the trespass action, and the understanding of noise pollution generally, will certainly afford a collateral action for negligence. The damage from noise is becoming as obvious as the damage from a broken leg and the monitoring systems are becoming as exact as x-rays. Likewise, the abatement technology is already practicable and economical. Consequently, it can be expected in some future case that it will be held that reasonable airport and aircraft operators should initiate and utilize noise abatement procedures and technology and failure to do so constitutes negligence.

Inverse Condemnation

Based upon the Fifth Amendment to the United States Constitution,⁴⁷ and most state constitutions, the remedy for inverse condemnation is contingent upon a showing of a taking of private property for public use.⁴⁸ In the federal courts and a majority of the state courts, a "taking" exists in either of two situations. One situation involves aircraft flights directly over a person's property which are so low and so frequent as to cause interference so substantial as to deprive the owner of the practical employment of his property and reduce its fair market value.⁴⁹ The other situation deemed a "taking" is that in which the noise and vibrations from lateral flights are so great as to make the property uninhabitable.⁵⁰ Con-

47. "No person shall . . . be deprived of life, liberty, or property, without due process of law; nor shall private property be taken for public use, without just compensation." U.S. Const. amend. V.

48. *Sneed v. County of Riverside*, 218 Cal. App. 2d 205, 32 Cal. Rptr. 318 (1963); *Peacock v. County of Sacramento*, 271 Cal. App. 2d 845, 77 Cal. Rptr. 391 (1969).

49. *United States v. Causby*, 328 U.S. 256 (1946). In this case of first impression, Justice Douglas ruled:

The airplane is part of the modern environment of life, and the inconveniences it causes are normally not compensable under the Fifth Amendment. * * * Flights over private land are not a taking, unless they are so low and so frequent as to be a direct and immediate interference with the enjoyment and the use of the land. (328 U.S. at 645).

50. *Batten v. U.S.*, 306 F.2d 580 (10th Cir. 1962), cert. denied, 371 U.S.

sequently, in an overflight situation a court only determines that the noise diminishes the fair market value of the property while absent the direct overflight, a “taking” will result only when there has been a total impairment of the property’s utility.⁵¹

This inconsistency has resulted in an unjust result in many cases. Recognizing this problem, a California court held in *Nestle v. City of Santa Monica*⁵² that aircraft noise resulting from either direct overflights or near-by lateral will cause a “taking” where the noise diminishes the fair market value of the property.⁵³ The plaintiffs in *Nestle* sought damages from Santa Monica Municipal Airport as a result of the noise produced by aircraft flying over land adjacent to the plaintiff’s property. The federal requirements for a cause of action based upon direct overflights or total impairment of the property’s utility—were noted, but the court rejected this standard and opted to follow the logic of the Supreme Court of Oregon in its opinion in *Thornburg v. Port of Portland*,⁵⁴ where it was stated:⁵⁵

The proper test to determine whether there has been a compensable invasion of the individual’s property rights . . . is whether the interference with use and enjoyment is sufficiently direct, sufficiently peculiar, and of sufficient magnitude to support a conclusion that the interference has reduced the fair market value of the plaintiff’s land by a sum certain of money.

In applying this test as the law to apply in inverse condemnation suits, the *Nestle* Court has now set a precedent for California courts that resolves the prior inconsistency.

Unfortunately, even this liberal approach does not work to abate the problem of noise from airports nor does it prevent airport noise from increasing; rather, this standard only affords individual plaintiffs an easier method of recouping damages when the fair market value of their property is diminished due to noise from airport operations.

Nuisance

A new era of aircraft noise litigation is marked by the recent

955 (1963), *rehearing denied*, 372 U.S. 925; *Avery v. U.S.*, 330 F.2d 640 (Ct. Cl. 1964); *Leavell v. U.S.*, 234 F. Supp. 734 (E.D.S.C. 1964); *Ferguson v. City of Keene*, 108 N.H. 409, 238 A.2d 1 (1968); *Moore v. U.S.*, 167 F. Supp. 399 (N.D. Tex. 1960); *Freeman v. U.S.*, 167 F. Supp. 541 (W.D. Okla. 1958).

51. *Batten v. US.*, at 585.

52. 19 Cal. App. 3d 869, 97 Cal. Rptr. 235 (1971), *aff’d*. 6 Cal. 3d 920, 496 P.2d 480, 101 Cal. Rptr., 568 (1972).

53. *Id.* at 880-82, 97 Cal. Rptr. at 242-44.

54. 244 Ore. 69, 415 P.2d 750 (1966).

55. *Id.* at 72, 415 P.2d at 752.

success of individuals claiming nuisance.⁵⁶ The remedies may be injunctive relief and money damages, but the money damages relate to the personal injuries suffered by the individual, rather than by the landowner. Thus, a new class of plaintiffs is recognized.⁵⁷

At common law, noise is not considered to be a nuisance per se.⁵⁸ Rather, a noise is a nuisance only when it is unreasonable and excessive,⁵⁹ and such noise must actually produce physical discomfort and annoyance to a person of ordinary sensibilities.⁶⁰ But a property owner whose rights are injured, or threatened by injury, by a noise classified as a nuisance,⁶¹ has a remedy in an action for damages or a suit to enjoin a maintenance of the nuisance.

The economic implications of potentially successful litigation have caused a major revision in the thinking of the noise generators. Aircraft operators are now considering changes in operational procedures. Air frame and aircraft engine manufacturers are busily

56. See generally, Spater, *Noise and the Law*, 63 MICH. L. REV. 1373 (1965); Lloyd, *Noise as Nuisance*, 82 U. PA. L. REV. 567 (1933-34); Fadern and Berger, *A Noisy Airport is a Damned Nuisance*, 3 S.W.U.L. REV. 39 (1971).

57. Cases permitting recovery for pain, suffering, discomfort, inconvenience and financial loss caused by noise, include, *Griggs v. Allegheny County*, 369 U.S. 84 (1962); *A.J. Hodges Industries, Inc., v. United States*, 355 F.2d 592 (Ct. of Claims 1966); *Ackerman v. Port of Seattle*, 55 Wash. 2d 400, 348 P.2d 664 (1960); *City of Jacksonville v. Schulmann*, 167 So. 2d 95 (Fla. 1964). Also, adverse psychological consequences including the general detriment to persons, property values and the quality of life, see *City of Jacksonville v. Schulmann*, *supra*. Structural damages to buildings is also compensable, *City of Jacksonville v. Schulmann*, *supra*; *Fireman's Insurance v. Alexander*, 328 S.W.2d (Tex. 1959).

58. *Hobson v. Walker*, 41 So. 2d 789 (La. Ct. App. 1949); *Dube v. City of Chicago*, 7 Ill. 2d 313, 131 N.E.2d 9 (1955); *City of McAlester v. King*, 317 P.2d 265 (1957); *Martin v. Elwood Iunis Steel Tube Works, Inc.*, 73 Montg. 447, 49 Mun. 11; *Caldwell v. Knox Concrete Products, Inc.*, 54 Tenn. App. 393, 391 S.W.2d 5, 10 (1964).

59. *Gardner v. International Shoe Company*, 319 Ill. App. 416, 49 N.E.2d 328 (1943); *AMP Food Stores v. Kornstein*, 121 So. 701 (Fla. Ct. App. 1960); *Bates v. Quality Ready-Mix Company*, 154 N.W.2d 952 (Iowa 1967); *Hunt v. Eschen*, 1936 N.Y.S.2d 136 (S. Ct. 1954).

60. *Vostick v. Smoot Sand and Gravel Corp.*, 154 F. Supp. 744, 762 (D. Md. 1957), *reversed* on other grounds, 260 F.2d 534 (4th Cir. 1958); *Smith v. Western Wayne Company Conservation Association*, 380 Mich. 526, 158 N.W.2d 463 (1968).

61. The law of nuisance, perhaps the oldest form of land use control, evolved from the ancient maxim *sic utere tuo et alium non laedes*—one must so use his rights as not to interfere on the rights of others. See Roberts, *The Right to a Decent Environment: Process Along a Constitutional Avenue*, LAW AND THE ENVIRONMENT 134, 148 (1970).

trying to design quieter equipment; airport operators are beginning to insist on noise abatement procedures; and the general public is becoming more aware that this type of pollution is a social cost which is unfair to impose on one segment of our population to the economic benefit of another.

Ultimately, however, litigation is severely limited in its capacity to control sources of noise pollution. At best, stuffing dollar bills into the ears of acoustic slum-dwellers gives only a fleeting moment of relief. Thus, while successful litigation often has immediate and satisfactory effects for the individual whose property or person is injured, it is all but impotent (save the infrequent and costly injunction) when it comes to aiding communities near airports improve the quality of their environment.

The effect of litigation will more than likely remain in this condition until the fuel of litigation itself is cleaned; the laws must become noise pollution conscious before the courts can strike the balance in favor of the environmental indigents. The administrator of the EPA recently stated:

Assuming that EPA noise exposure levels were adopted by the courts as means for defining a cause of action for noise related damages, the most likely use would come in personal damage suits. If it were determined that a given level of cumulative noise exposure resulted in a potential risk of hearing loss to those exposed for long duration to such levels, a new type of airport litigation might evolve. Such suits would be brought by airport neighbors asserting damages resulting from anticipated hearing and/or substantial diminution of property value in areas made 'unhealthy' by aircraft noise.⁶²

Certainly such adoption by the courts would make the future of litigation as a control mechanism much brighter.

MULTIPLE PLAINTIFF, CLASS ACTION OR REPRESENTATIVE SUITS

The most significant obstacles to the use of private law suits to control noise are the investment of time and the expense of litigation. Those problems are not peculiar to suits for noise damage, but it does render the use of private litigation generally an ineffective means of protecting the environment. Interests which, in the aggregate, may be of overwhelming importance, often do not economically affect any particular individual enough to justify the cost of litigation.⁶³

62. *Report on Aircraft-Airport Noise*, Report of the Administrator of the Environmental Protection Agency to the Committee on Public Works, U.S. Senate, U.S. Government Printing Office, (July, 1973).

63. See *Urban Noise Control*, 4 COLUM. J. LAW & SOC. PROB. 105, 108

One mechanism for the creation of a substantial constituency to represent the diffuse community interests in quietness is the multiple plaintiff approach.⁶⁴ Formation by residents affected by the pollution of an unincorporated committee, a nonprofit corporation, or a corporation allows for the several affected parties to join in one litigation.

Another method is the class action or representative suit which has been suggested as an effective means of protecting the environment while internalizing the costs.⁶⁵ However, this method is not popular with all writers.^{65a} Since class actions are subject to the frailties of private nuisance actions, their use in the field of environmental litigation is limited.^{65b} However, under Rule 23 of the Federal Rules of Civil Procedure and similar state statutes, actions in pollution cases may be maintained for injunctive relief or for damages or both if the requirements are met.^{65c}

Under Federal Rule 23, or a similar state statute, two requirements must be met in order to sustain any class action: (1) There must be an ascertainable class, and (2) there must be a well-defined community of interest in the questions of law and fact involved affecting the parties to be represented.^{65d} An example of the

(1968); Professor Harold Green suggests four reasons why private litigation is insufficient to protect the environment: (1) the plaintiff must bear the burden of proving that he is injured; (2) the plaintiff must show a causal link between his injury and the defendant's conduct; (3) the courts' utilization of cost benefit analysis is hard on plaintiffs; and (4) private litigation is costly and complex. H.P. Green, *The Role of Government in Environmental Conflict* 2-4 (unpublished paper submitted to the Conference on Law and the Environment at Warrenton, Va., Sept. 11-12, 1969); see also, Juergensmeyer, *Control of Air Pollution through the Assertion of Private Rights*, 1967 DUKE L.J. 1126, 1155.

64. *Greater Westchester Homeowners' Assn. v. Los Angeles*, Los Angeles Superior Ct. No. 931989 mem. opinion, April 17, 1970, quoted in 11 A.V.I. 18374 and 18398.

65. See Note, *The Cost Internalization Case for Class Actions*, 21 STAN. L. REV. 383, 384 (1969).

65a. McCarthy, *Recent Developments in Environmental Defense*, 19 BUFFALO L. REV. 195 (Winter, 1970).

65b. *Id.*, wherein, it is said that

"the more promising area of development remains the representative actions formulated in the scenic Hudson case, 354 F.2d 608 (2d Cir. 1965) cert. denied, 384 U.S. 941, which could be expanded to allow for more responsive standing rules in the area of nuisance."

65c. 61 AM. JUR. 2d *Pollution Control* § 130 (1972).

65d. *Gerhard v. Stevens*, 68 Cal. 2d 864, 69 Cal. Rptr. 612, 442 P.2d 692 (1968); *Daar v. Yellow Cab Co.*, 67 Cal. 2d 695, 433 P.2d 732, 63 Cal. Rptr.

failure of the second requirement and its fatal result is the case of *City of San Jose v. Superior Court of Santa Clara County*.⁶⁶ There, the California Supreme Court declared that a class action was inappropriate due to the unique nature of land in an action based upon the theories of nuisance and inverse condemnation. The Court reasoned that as the plaintiffs were seeking recovery for the diminution in the market value of their property, each member's right to recover would be dependent on the *facts peculiar to each member's property*. Consequently, the suit failed in the community of interest requirement for a class action suit.⁶⁷ Thus, the class action device presently appears to be an ineffective device when the damages sought are based on diminution of property values in those jurisdictions where the philosophy of the *San Jose* case is followed.

Distinctions must be made in those suits where class actions are appropriate and the *San Jose* case will, no doubt, be distinguished away in many situations.

In summary, private litigation takes place only after a decision to employ a particular technology has been made. There is inherent waste in such a system which allows construction of expensive facilities prior to actually determining the environmental impact. If it is later decided that the operations are too noisy, the generators of the noise must pay their way in the form of judgments or be enjoined from operation. It is submitted that the judicial forum is not well-suited to decide how much noise is really detrimental to the community and how great will be the price of eliminating it. Nevertheless, the courts seem to be the most popular mechanism to which the public turns to protect their environment.

CONTROL OF NOISE BY LEGISLATION

Local Level Legislation

The earliest known legislative prohibition against noise was the edict of Julius Caesar in ancient Rome forbidding chariot traffic after dark.⁶⁸ As concerned as Caesar have been many state and local governments which have enacted statutes and ordinances addressed toward the control of noise. Such legislation has been predicated upon the local police power to preserve the public peace

724 (1967); *Weaver v. Pasadena Tournament of Roses Association*, 32 Cal. 2d 833, 198 P.2d 514 (1948).

66. 12 Cal. 3d 447, 525 P.2d 701, 115 Cal. Rptr. 797 (1974).

67. *Id.* at 459, 525 P.2d at 703, 115 Cal. Rptr. at 799 (1974).

68. 1974 *ENCYCLOPEDIA BRITANNICA YEARBOOK OF SCIENCE AND THE FUTURE* 369.

and tranquility.⁶⁹ The specific legal tactic taken by most legislators is to base noise control legislation on the grounds of public nuisance.

At common law a public nuisance was defined as an act or omission which obstructs or causes inconvenience or damage to the public in the exercise of rights common to all "her majesty's subjects".⁷⁰ Subject to constitutional barriers against arbitrary, capricious, or unreasonable acts, the legislative body may declare that a specified activity or condition constitutes a public nuisance.⁷¹

It is beyond legal question that environmental legislation regulating public nuisances is a proper exercise of the police power. As Justice Stewart stated in *Huron Portland Cement Co. v. Detroit*:⁷²

Legislation designed to free from pollution the very air that people breathe clearly falls within the exercise of even the most traditional concept of what is compendiously known as the police power.⁷³

This concern about the need for protecting the public against public nuisance in the environmental field is a nation wide concern,⁷⁴ and it has been stated that this type of legislation is but "a sensitizing of and refinement of nuisance law."⁷⁵

At first blush, it would appear as if an enforcement of anti-noise ordinances at the local level should be successful, if properly promulgated and enforced.⁷⁶

However, in two leading examples, cities who have attempted to control aircraft noise pollution were thwarted in their legislative attempts by defenses invoking the Supremacy Clause of the United

69. 440 municipalities in the United States have noise regulations to some extent affecting more than 62 million inhabitants. 8 SOUND AND VIBRATION No. 12, 28-80 (Dec. 1974).

70. PROSSER, TORTS § 88, at 583 (4th ed. 1971); See also CAL. CIV. CODE § 3480, (West 1970) which defines public nuisance as follows:

A public nuisance is one which affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of annoyance or damage inflicted upon individuals may be unequal.

71. *City of Bakersfield v. Miller*, 64 Cal. 2d 93, 48 Cal. Rptr. 889, 410 P.2d 393 (1966); *cert. denied*, 384 U.S. 988 (1966).

72. 362 U.S. 440 (1960).

73. *Id.* at 442.

74. *Bortz Coal Company v. Air Pollution Commission*, 2 Pa. 441, 279 A.2d 388 (1971).

75. CALIF. CONTINUING EDUCATION OF THE BAR, CALIF. ZONING PRACTICE (Supp. 1973).

76. See, *Huron Portland Cement Company v. City of Detroit*, 355 Mich. 277, 93 N.W.2d 888 (1959), *aff'd* 362 U.S. 440, 80 S. Ct. 813 (1960).

States Constitution.⁷⁷ In *Allegheny Airlines v. Village of Cedarhurst*,⁷⁸ the Court found that Congress, by enacting the 1938 Aeronautics Act, adopted a comprehensive and preemptive plan for the regulation of air traffic in the navigable airspace⁷⁹ and voided the city's ordinance.⁸⁰ In *American Airlines v. Town of Hempstead*,⁸¹ the Court ruled that the ordinance⁸² in question would affect existing flight patterns and procedures and a split court affirmed the earlier cases with respect to the federal preemption in the field of control of the aircraft.

From a third and more recent case, there appears to be a small, but significant victory in the form of a specific exception from the preemption doctrine. In the 1973 case of *The City of Burbank v. Lockheed Air Terminal*,⁸³ the majority rested its conclusion of federal preemption on the grounds that the pervasive nature of the system of federal regulation of aircraft noise abatement contained in the Federal Aviation Act of 1958⁸⁴ as amended and the legislative history of the 1968 Aircraft Noise Amendment Act⁸⁵ indicated a Congressional attempt to preempt the field; however an exception was noted that the airport proprietor could place reasonable conditions on the use of the airport. This exception has been used in some airports throughout the United States, notably, Orange County Airport, California.⁸⁶

Subsequent to the *Burbank* case, the Illinois Appellate Court in *The Village of Bensenville, et al., v. City of Chicago*,⁸⁷ found that

77. U.S. Const. art. VI, § 2, provides that the law made in pursuance thereof shall be the supreme law of the land, anything in the constitution or laws of any state to the contrary notwithstanding. An act of Congress constitutionally passed within the limits of its authority becomes a part of the supreme law of the land in connection with the Federal Constitution itself. Federal statutes operate essentially as a part of the law of each state and are as binding on its authorities and people as are its own local constitution and laws in the same manner as if they were actually embodied in the Federal Constitution.

78. 132 F. Supp. 871 (E.D.N.Y. 1955), *aff'd* 238 F.2d 812 (2d Cir. 1956).

79. *Id.* at 881.

80. The Village of Cedarhurst's contested ordinance attempted to control the aircraft noise by requiring a 1,000 foot minimum altitude while over the City which bordered the airport.

81. 272 F. Supp. 226 (E.D.N.Y. 1967), *aff'd* 398 F.2d 369 (2d Cir. 1968), *cert. denied*, 393 U.S. 1017 (1969).

82. The Town of Hempstead's ordinance prohibited planes landing at Kennedy Airport from flying over the town.

83. 411 U.S. 624 (1973).

84. Pub. L. No. 85-726, 72 Stat. 731 (1958).

85. Pub. L. No. 90-411, (1968), 82 Stat. 395.

86. In the County of Orange, California, the proprietor of the airport has voluntarily agreed to noise abatement procedures.

87. 12 Avi. 18,350 (Ill. App. Ct., 1973).

federal preemption precluded the City from passing a valid ordinance declaring that noise generated by jet aircraft was a public nuisance. Bensenville's declaration was therefore an unconstitutional burden on interstate commerce and had been preempted by federal legislation and regulation.⁸⁸

In substance, the plaintiffs in *Bensenville* alleged that:

the air transport carrier using said facilities operate many jet aircraft powered by liquid fueled engines which produce an intensive noise and air pollution over and upon said municipalities and their constituents; that said noise and air pollution are of such intensity to be harmful, dangerous and damaging to the physical and mental health of said constituents.⁸⁹

The plaintiff cities requested that the City of Chicago be enjoined "from expanding its facilities at O'Hare in such a manner as to provide facilities for . . . air polluting aircraft."⁹⁰

The Illinois Appellate Court quoted at length from *Burbank*:

It is the pervasive nature of the scheme of Federal Regulation of aircraft noise that leads us to conclude that there is preemption. As Justice Jackson stated concurring in *Northwest Airlines, Inc. v. Minnesota*, 322 U.S. 292, 303, 1 Avi. 1181 (1944), federal control is intensive and exclusive. Planes do not wander about in the sky like vagrant clouds. They move only by Federal permission, subject to Federal inspection in the hands of Federal certified personnel and under an intricate system of Federal command. The moment a ship taxis onto a runway, it is caught up in an elaborate and detailed system of controls. 322 U.S. at 352 (1944) * * *. As stated by Judge Dooling in *American Airlines v. Hempstead*, 272 F. Supp. 226, 230; 10 Avi. 377 (1967), *aff'd*, 398 F.2d 369, 10 Avi. 18 029 (1967). "The aircraft and its noise are indivisible; the noise of the aircraft extends outward from it with the same inseparability as its wings and tail assembly; to exclude the aircraft noise from the Town is to exclude the aircraft; to set a ground level decibel limit for the aircraft is directly to exclude it from the lower air that it can not use without exceeding the decibel limit."⁹¹

Thus, the Illinois Court concluded that the federal government through the Federal Aviation Act⁹² as supplemented by the Noise Control Act of 1972⁹³ and the regulations issued thereunder so occupied the regulation of aircraft noise and air pollution so as to preempt local regulation.

88. *Id.* at 18,352.

89. *Id.* at 18,351.

90. *Id.* at 18,352.

91. *Id.* at 352.

92. Pub. L. No. 85-726, 72 Stat. 731 (1958).

93. 86 Stat. 1234 (1972), 42 U.S.C.A. § 4901 *et seq.* (Supp. 1973).

The question of Federal preemption was also a determinative factor in an even more recent case entitled *United States v. The City of New Haven*.⁹⁴

In that case, there was a dispute between two Connecticut towns as more fully set forth in the opinion:

The City of New Haven, in order to extend a runway as Tweed, New Haven Airport, a public airport, worked out an agreement with the Federal Aviation Administration for a partial federal funding of the project. The runway was extended entirely within the New Haven city limits. However, New Haven acquired additional land in the Town of East Haven to establish a "clear zone" at the end of the runway. Thereafter, the Town of East Haven sued the City of New Haven in the State courts of Connecticut claiming that New Haven failed to obtain, before acquiring the land from East Haven, the proper approval [required by Connecticut statutes.] The Connecticut Superior Court found a violation of the statute and issued an injunction restraining New Haven from 'performing any acts calculated to expand its airport into, or over any portion of East Haven for expansion or the mere maintenance of clear zones over property located in East Haven.' The Connecticut Supreme Court affirmed the lower court. * * * As New Haven continued to operate the extended runway, the Superior Court issued a contempt order against New Haven.⁹⁵

Thereafter, as a result of the opinion, New Haven closed the runway. The federal government moved in to reopen the closed runway and to enjoin the state courts. The Second Circuit affirmed the lower court which agreed with the government's position. The court, quoting from the lower courts' opinion, stated:⁹⁶

Thus, the order of the New Haven Superior Court was directed to and conflicted squarely with the regulation of navigable air space which Congress has a reserve for exclusive Federal Control. To the extent that it prevents aircraft from using navigable air space, it is enforceable under the Supremacy Clause and may properly be enjoined by a Federal Court, despite the broad sweep of the anti-injunction statute, (20 U.S.C. § 2283).

Thus, the court concluded:

East Haven cannot enforce its rights under Connecticut law by obtaining a state court injunction which infringes on Federal regulation of navigable air space.⁹⁷

Another local level technique of legislative control of the effect of noise has been the use of zoning ordinances.⁹⁸ Although improper use of zoning can lead to city liability for a "taking"⁹⁹ under

94. 496 F.2d 452 (2d Cir. 1974).

95. *Id.* at 453.

96. *Id.* at 454.

97. *Id.* at 454.

98. See discussion under section Land Use Planning, *infra* at S274.

99. See discussion under section Litigation as a Control Mechanism,

the state and federal constitutions, proper application of zoning affords local governments an opportunity to forestall the development of residential zones in areas susceptible to excessive noise or above-average accident hazards.¹⁰⁰

The California courts have ruled that "zoning regulations are presumed to be valid exercises of the police power which further the public safety and the general welfare,"¹⁰¹ and have upheld such ordinances saying any reasonable justification will sustain them.¹⁰² In *Smith v. County of Santa Barbara*,¹⁰³ a case involving a zoning ordinance which rezoned plaintiff's property adjacent to an airport from "Residential" to "Design Industrial", the Court said:

The expressed reason given by the county as alleged by the appellants is implicit with the admission that private citizens residing near the airport would be so harassed and annoyed by the operation of the airport that they would suffer damages. Such a reason, in our opinion justifies that passage of the zoning ordinance.¹⁰⁴

The use of this zoning tactic can effectuate much good with respect to future airport construction and existing airport expansion. But, it cannot remedy the noise pollution problem of residents near existing airports.

Thus the power of local government surrounding airports seems to be limited by the preemption doctrine and the limited impact of zoning ordinances in developed areas.

FEDERAL LEVEL LEGISLATION

Compared to the state and local governments, the federal government is a relative Johnny-come-lately in the regulation of noise. While aviation generally has been regulated by the Air Commerce Act of 1926,¹⁰⁵ the 1938 Aeronautics Act¹⁰⁶ and the Aviation Act

supra at S252; *Peacock v. County of Sacramento*, 271 Cal. App. 2d 845, 77 Cal. Rptr. 391 (1969); *Sneed v. County of Riverside*, 218 Cal. App. 2d 205, 32 Cal. Rptr. 318 (1963); *Kissinger v. City of Los Angeles*, 161 Cal. App. 2d 454, 327 P.2d 10 (1958).

100. *Morse v. County of San Luis Obispo*, 247 Cal. App. 2d 600, 603, 55 Cal. Rptr. 710 (1967).

101. *Id.*

102. *Smith v. County of Santa Barbara*, 243 Cal. App. 2d 126, 129, 52 Cal. Rptr. 292 (1966).

103. *Id.*

104. *Id.* at 129, 52 Cal. Rptr. at 295.

105. Air Commerce Act of 1926, Pub. L. No. 69-254, 44 Stat. 568.

106. 1938 Aeronautics Act, Pub. L. No. 75-706, 52 Stat. 973.

of 1958¹⁰⁷ (which together give a comprehensive and preemptive plan for regulation of air traffic in the navigable airspace) all were silent as to specific noise regulation.

It was not until after the Supreme Court decided the two leading cases of *Cedarhurst*¹⁰⁸ and *Hempstead*¹⁰⁹ that the Federal Aviation Act of 1958 was amended to require the inclusion of aircraft noise as factor in the FAA's aircraft certification process.¹¹⁰ The amendment authorizes the Administrator of the FAA to prescribe standards for the measurement of aircraft noise and sonic boom, and to provide for the control and abatement of such noise.¹¹¹ The administrator has the authority to vary the standards, rules and regulations on noise to the issuance, amendment of qualifications, suspension or revocation of any certificate issued by FAA¹¹² and it allows the FAA to require airlines to retrofit the existing fleet of airplanes with noise suppressors if such action is technologically practicable and economically reasonable.¹¹³ The Administrator has issued some standards pursuant to that authorization.¹¹⁴ However, one can hardly expect the FAA to really put effective noise curbs on an industry over which it has a congressional charge to "promote and foster"¹¹⁵ and to which it has been historically rather subservient.

This first significant federal regulatory legislation dealing directly with noise pollution has been the Noise Control Act of 1972.¹¹⁶ This Act¹¹⁷ required the Administrator of the Environ-

107. Aviation Act of 1958, Pub. L. No. 85-726, 72 Stat. 731.

108. *Allegheny Airlines v. Village of Cedarhurst*, 132 F. Supp. 871 (E.D.N.Y. 1955), *aff'd*, 238 F.2d 812 (2d Cir. 1956), *see* discussion in this section under "Local Level Legislation, at —.

109. *American Airlines v. Hempstead*, 272 F. Supp. 266 (E.D.N.Y.) (1967), *aff'd* 398 F.2d 369 (2d Cir. 1968), *cert. denied*, 393 U.S. 1017 (1969); *see* discussion in section under Local Level Legislation, *supra* at S260.

110. 49 U.S.C.A. § 1431 (Supp. 1973).

111. 49 U.S.C.A. § 1431 (Supp. 1973).

112. 49 U.S.C.A. § 1431 (Supp. 1973).

113. 49 U.S.C.A. § 1431(d) (4) (Supp. 1973).

114. 14 C.F.R. Part 36 (1970).

115. The preamble to the Civil Aeronautics Act of 1938 reads: To create a Civil Aeronautics Authority, and to promote the development and safety and to provide for the regulation of civil aeronautics.

116. Under the Noise Control Act of 1972, EPA was directed to study and report to Congress on the aircraft and airport noise problem, including assessment of: (1) current FAA flight and operational noise controls, and possibilities for retro-fitting or phasing out existing aircraft; (2) control measures available to airport operators and local government; and (3) implications of establishing cumulative noise level limits around airports. In July, 1973, EPA submitted its report, EPA, REPORT ON AIRCRAFT—AIRPORT NOISE (1973).

117. Pub. L. No. 92-574, § 7, 86 Stat. 1234 (1972).

118. Pub. L. No. 92-574, § 7, 86 Stat. 1234 (1972).

mental Protection Agency to study the FAA Noise Standards of new and existing aircraft and to report to Congress.¹¹⁸ On its face, it seemed the heavily "industry-oriented" FAA now had a sharp-toothed watchdog peering over its shoulder to guarantee implementation of noise control measures. But, in reality, the complex system of checks and balances between the FAA and the EPA ultimately has had little effect as the Act leaves the FAA the power to reject, accept or modify the regulation proposals of the EPA before the FAA promulgates them.¹¹⁹

Other legislation on the federal level dealing with aircraft noise can be found in the National Environmental Policy Act.¹²⁰ (NEPA)

In essence, NEPA requires the preparation of environmental impact statements by Federal agencies on any proposed project, indicating the alternatives and irreversible resource commitments involved. The obvious underlying theory behind the NEPA was to require federal agencies to analyze and publically describe the adverse environmental effects of the proposed project.

Critics of NEPA point out weaknesses in the Act which stem from the failure of Congress to recognize the "behaviorial reality that governs the institutions sought to be regulated."¹²¹

NEPA's greatest defect is in the area of Airport expansion in conjunction with the Airport and Airway Development Act.¹²² Any proposed airport development now requires a public hearing on the "social, economic and environmental effects"¹²³ of the project. A preliminary draft environmental impact statement must be made prior to the hearing. Additionally, all of the airport projects must be consistent with a statutorily required National Airport System Plan.¹²⁴

Unfortunately, however, the panacea of a public hearing and the review of an environmental impact statement does not mean that there is really an effective administrative evaluation process prior to the obtaining of permission for the proposed airport development

119. 49 U.S.C.A. § 1431(c) (1), (Supp. 1973).

120. 83 Stat. 852 (1970), 43 U.S.C. §§ 4331-4335 (1970).

121. J.L. Sax, *Environmental Law—The Unhappy Truth About NEPA*, 26 OKLA. L. REV. 239 (1973).

122. 84 Stat. 219 (1970), 49 U.S.C. §§ 1701-1742 (Supp. 1972).

123. 49 U.S.C. § 1716(d) (1) (Supp. 1972).

124. 49 U.S.C. § 1716(a) (Supp. 1972).

and expansion. Sadly, most environmental impact statements are prepared by "experts" hired by the developer or by the agency seeking the development and thus, the objectivity of the reports are somewhat suspect at times.¹²⁵ Furthermore, "Negative Declarations" may be filed in situations that really require a full environmental impact statement.

Congress set up the Environmental Protection Agency basically to set standards and to enforce such standards. Unfortunately, after such standards are determined, much research is necessary to improve and expand the technology of source noise reduction to provide for more healthy standards. The EPA simply is not organized, funded, nor does it appear motivated to undertake such activities. Conversely, the National Aeronautics and Space Administration (NASA) has already demonstrated by developing and test flying "quieted" current production aircraft that it should be the governmental vehicle which could determine the technologically feasible and economically practicable solutions to the problems of aircraft noise pollution.

LOCAL AGENCY POWER ASIDE FROM LEGISLATION

Through all of the arguments about federal preemption and which agency has jurisdiction or power, the airport proprietor has remained on an equal status with the Congress and its power of legislation: namely, the airport owner or operator has property rights which allow it to issue limitations on the use of its airport even though such limitation might bar flights in interstate commerce from using the particular airport facility. According to the Supreme Court's holding in *Griggs v. Allegheny County*¹²⁶ the operator of an airport is liable, under certain circumstances for the taking of an easement of flight over property necessary for the use of airplanes in landing and taking off from the airport. Thus, when the airport operator, public or private, fails to exercise its power to limit noisy airplanes, it may be on the losing side of an expensive law suit. Such was the recent case in *Los Angeles v. Aaron*,¹²⁷ where the city of Los Angeles as proprietor of Los Angeles International Airport was held liable to 550 homeowners around the airport. Judgments of approximately \$650,000 were granted to compensate for the diminution of property values due to increased air-

125. It would seem that the only appropriate remedy is to require such environmental impact statements to be made by an independent agency, possibly the EPA.

126. 369 U.S. 84 (1962).

127. 40 Cal. App. 3d 471, 115 Cal. Rptr. 162 (1974), *hearing denied*, Aug. 28, 1974.

craft noise. The defendant argued unsuccessfully that the authority over jet noise rested exclusively with the federal government, particularly the FAA. The California Court of Appeals affirming said:

The fact that the federal government controls the flight of aircraft does not relieve the airport owner and operator of liability where the operation of the airport is a substantial cause of the property owner's damage.¹²⁸

Based on the authority of *Aaron*, the Board of Airport Commissioners authorized payment of \$1.35 million for air easements over the properties adjacent to the east and south clear zones of Los Angeles International Airport.¹²⁹ Included in this sum is the unprecedented negotiated settlement of \$138,425 for 23 property owners in the East Westchester area which suggest the Board's acceptance of its newly defined legal responsibility.

Consequently, if a municipality, county, or state is the airport proprietor, it may then do by managerial decree what it can not do by legislation as presently interpreted by some courts.¹³⁰

Given this new power and liability of the proprietor, it would appear that a very practical approach would be for the airport operator to coordinate, develop and implement a plan for noise abatement; to impose such a plan as a condition of any lease, license, agreement, or usage of the airport; and then to monitor and enforce the abatement procedures by levying a sliding scale of fees based on the noise generated by the individual aircraft. This would eliminate the problems associated with criminal law enforcement and the recently held unconstitutionality of Single Event Noise Exposure Prohibitions by a Federal Court in Northern California.¹³¹

Furthermore, the schedule of fees could be imposed not only on those that exceed the standards set forth in the noise abatement plan, but also, a schedule could be developed to impose a fee based

128. *Id.*

129. Los Angeles Times, Feb. 11, 1975, at 21, col. 1 & 2.

130. S. REP. NO. 1353, 90th Cong., 2d Sess. 6 (1968). *But* note that this is subject to the argument that such federal policy forces localities to make their decision in a proprietary fashion, rather than in a way which requires the democratic concurrence of the local legislature.

131. A.T.A., et al. v. Crotti, Civ. No. C-72-2189-WTS (N.D. Cal. 1975); Burden of Proof and the Defense of the Supremacy Clause of the U.S. Constitution. *See supra* note 70.

on the amount of noise generated by each aircraft. This would improve the usual system of imposing landing fees based on aircraft weight. This type of fee would be an incentive for aircraft operators to voluntarily reduce noise. A graduated scale with higher fees for noisier aircraft would help encourage usage of quieter planes. A schedule for increased fees in the future would spur the industry to convert to less noisy aircraft. Additionally, airlines should be given authority by the Civil Aeronautics Board to charge lower rates for passengers or freight using quieter aircraft. Of course, this proposal presupposes an effective monitoring system,¹³² which as yet, is not a universal accomplishment.¹³³ But with effective monitoring, violators could be detected and enforcement could take place through the imposition of heavy civil fees and/or the forfeiture to use the airport in the future by the offenders.

FUTURE LEGISLATION

A greater degree of compatibility between airports and their neighbors can be obtained by Federal legislation reorganizing current authority among the federal agencies responsible for controlling unnecessary aircraft noise.

This restructuring of governmental power is necessary because of the inadequate response that has been exhibited to date by the agencies from which relief is sought. For example, the FAA finds itself with an apparent conflict of interest. On the one hand, it is charged by the United States Congress to "foster and promote air commerce."¹³⁴ This is generally directly contrary to the effect of any proposed restriction on air carriers in favor of individuals beneath flight paths of aircraft. The Federal Noise Control Act of 1972,¹³⁵ giving the EPA certain powers, has been a step in the right direction but has proved to be inadequate since the FAA still has veto power over proposed regulatory actions,¹³⁶ and the EPA does not have sufficient capability in research technology.

Accordingly, legislation should be implemented to authorize and direct the EPA to establish standards for environmental noise impact which would protect the public health and welfare while providing an adequate margin of safety. Corollary legislation should

132. See *supra*, note 14, see also textual discussion under section on The Nature of Noise Pollution, *supra* at S243.

133. See State of Calif., Title 4: Subchapter 6: Noise Standards, Calif. Dept. of Aeronautics.

134. Air Commerce Act of 1926, Pub. L. No. 69-254, 44 Stat. 568.

135. Noise Control Act of 1972, 86 Stat. 1234, 42 U.S.C.A. § 4901 *et seq.* (Supp. 1973).

136. 49 U.S.C.A. § 1431(c) (1) (Supp. 1973).

authorize and direct the National Aeronautics and Space Administration to develop, demonstrate and certify an air transportation system which would employ optimum aeronautical technology for safety, economic reasonableness, technical practicability, energy conservation, all-weather flight control capability, and noise and exhaust emissions abatement. This same legislation should authorize and direct the FAA to implement, through regulatory action, the air transportation system plan as designed, developed and certificated by the NASA. An important facet of the charge to NASA should require certification for noise of every airport which affects interstate commerce. This certification should be based on standards established by the EPA utilizing the technology certified by the NASA. Failure of an airport to meet the certification standards could jeopardize its obtaining federal funds for any purpose. Furthermore, this certification could require each such airport to have compatible zoning and land use development within the noise impact zone around the airport as identified by EPA, or, in the alternative have a plan in cooperation with the effected local government unit or units to implement such a land use plan.¹³⁷

Legislation is also urgently needed which would require aircraft not meeting Federal Aviation Regulation (FAR) Part 36/ICAO Annex 16 noise standards to be retrofitted with sound absorption material (SAM) within 5 years and refanned within 6 years.¹³⁸ Additionally, refan technology should be incorporated in all new production aircraft of type designs certified prior to December 1, 1969, the effective date of FAR Part 36. In view of the large initial capital outlay, the funding of this program should be undertaken by the federal government forthwith. This can take the form of government guaranteed loans or direct loans.¹³⁹ Legislation can provide a surcharge of one dollar or less,¹⁴⁰ on each passenger ticket

137. The California Airport Land Use Commission System could serve as a model for cooperative efforts in zoning and land use development.

138. See *Hearings Before the Subcomm. on Aeronautics and Space Technology of the House Comm. on Science and Aeronautics*, 93d Cong., 2d Sess. 66 (testimony of Richard J. Coar, vice-president engineering, Pratt & Whitney Division, United Aircraft Corp.).

139. The author recommended "Pollution Service Charges" by the users of the air transportation system in testimony before the EPA Public Hearings on Noise Abatement and Control, Sept. 27, 1971.

140. It has been estimated that a fund of \$250 million per year could be raised by a one dollar passenger enplanement fee.

and an appropriate small charge on each freight way-bill to repay the initial investment. In this way, the entire air carrier fleet can be modified so as to substantially decrease the noise exposure around airports at a small cost to each of the users. Thus, the monetary cost of polluting is borne by the pollutor rather than the social and monetary cost borne by the unwilling victim.

Legislation is needed to release trust funds now held under the Airport Development Assistance Program (ADAP)¹⁴¹ and to provide other federal funds for noise abatement programs, including, but not limited to, acoustic retrofit, improved instrumentation/control equipment, structural sound attenuation, funding of local land use changes, and reimbursement to local governments for land use planning, land acquisition and for the capitalized tax base losses resulting therefrom.

Additionally, legislation should be implemented to direct the FAA to immediately adjust the FAR Part 36 noise levels and measurement standards to a more acceptable level. The particular standards that are incorporated by FAR Part 36 are archaic in view of modern day technology.¹⁴² Perhaps requiring the FAA to report to Congress semi-annually on its progress in implementing regulatory actions to control aircraft noise, including but not limited to, promoting research in noise reduction technology, energy managements. In addition to noise abatement, the resulting consolidation procedures, would also have a desired effect since it would expose the FAA to public comment on its apparent reluctance to implement noise abatement procedures.¹⁴³

Another very important piece of legislation that would assist in the reduction of unnecessary noise would be to require the Civil Aeronautics Board to initiate and permit airline capacity agreements. In addition to noise abatement, the resulting consolidation and elimination of some flights, aids energy conservation and would have the desirable effect of economically helping the air transportation industry and its consumers.¹⁴⁴ The effectiveness of flight reduction control was dramatically illustrated recently at Minneap-

141. Airport and Airway Development Act, Pub. L. No. 91-258, 84 Stat. 219 (1970).

142. See *supra*, note 138.

143. See EPA REPORT ON AIRCRAFT—AIRPORT NOISE 14 (1973), which states “. . . it appears that existing FAA flight and operational controls do not adequately protect the public health and welfare from noise.”

144. The C.A.B. has experimented in capacity agreements between a few selected airports in the eastern United States. It also reversed its policy on insisting on competition between U.S. airlines on foreign routes by permitting Pan American and TWA to swap routes to eliminate uneconomical direct competition and duplication of services.

olis-St. Paul International Airport. In the airport's Annual Report, activity in the year 1974 was compared against that of 1973. In 1974, there were 17,000 less landings and take-offs showing a 7% decrease below 1973 levels. At the same time, the passenger count went up 378,000 passengers, or a 5.5% increase. Thus, voluntary cut-backs within single airlines, because of fuel shortage and the increasing use of wide-bodied jets, has had a significant effect by lessening the noise impact on communities surrounding that airport. Thus, legislation to provide relief from the anti-trust laws and to require the CAB to actively pursue capacity agreements among competing airlines could have a significantly favorable effect.

The defenses raised against individuals suing on behalf of a class indicates that legislation is necessary which would enable local governmental agencies, whose constituents are directly effected, to serve as party plaintiffs in class actions seeking compensatory damages for the effect and impact of aircraft noise. The class action vehicle is almost absolutely necessary to permit effective litigation. Large expenses necessary to prepare a plaintiff's case against the well organized air transportation industry require the collective efforts of hundreds and sometimes thousands of individuals. There are sufficient issues of fact and law that are identical with respect to the specific situation surrounding each airport which should permit a class action on those issues. Once common findings of fact and conclusions of law are all determined, it is a simple matter for sub-classes and individuals to be then heard on the remaining specific issues.

Perhaps a bill establishing an Airport Noise Curfew Commission to investigate and report on effective means of reducing jet aircraft operation during the evening and nighttime hours would also be useful.¹⁴⁵

An amendment to the National Environmental Protection Act¹⁴⁶ to redefine the word "project" would also be desirable so as to include any change in airport or aircraft operations. This amendment would prevent the elimination of desirable noise abatement procedures without an environmental impact statement with its attendant public hearing. Additionally, if a change was indicated as

145. See H.R. 1180, 94th Cong., 1st Sess. (1975). (Introduced by Congressmen John W. Wydler of New York on Jan. 14, 1975).

146. 42 U.S.C.A. §§ 4321 *et seq.* (1973).

necessary or desirable the procedure could not only be implemented but the review process might even suggest corollary noise abatement procedures.

LAND USE PLANNING

Control of Land Use Surrounding Airports

The basic thrust of the control of aircraft noise has been primarily at the level of the source of generation. The various controls placed on the generation of noise have been the aircraft and airport operators in voluntarily changing operational procedures; the quasi-legislative regulatory action imposed by certain airport operators upon the operators of aircraft through leases and restrictive provisions in operation agreements and licenses; the voluntary action taken by the manufacturers of air frames and power plants in producing quieter aircraft; the conventional indirect control imposed by litigation or threat of litigation under theories of inverse condemnation, trespass, negligence, and nuisance seeking damages and injunctive relief; and legislation imposed by the federal, state and local agencies.

However, control of noise at its source of generation is but one facet of the total problem.

Assuming that classic definition of noise as being unwanted sound,¹⁴⁷ aircraft noise is a function of the amount and character of sound generated, the distance between the source of the sound and the listener, the sound attenuation between the listener and the source, and the physical and psychological makeup of the listener. Thus, it must be observed that effective land use planning and appropriate land use can greatly alleviate the noise problem around airports. Separating the source of noise by greater distances from the listener is, of course, an easy and obvious answer. Implementing such a solution is not so simple.

Traditionally, land use planning and land use control is a function of local government. The agency that has taxing power over property and is responsible for providing services not only to the individual parcel of property, but also to the rest of the community within its jurisdiction, is usually the agency with the power to zone for the public welfare. This theory of government is rapidly eroding in our urbanized society. Special purpose concerns of a regional nature are being addressed by specially created commissions, agencies or coalitions of governments.

147. See *supra*, note 7.

Without commenting on the desirability thereof, it is evident that there is a changing concept of the legal view regarding property rights. Underlying the recent court trends and enforcing environmental protection laws and planning has been a social concern evolving about the use one makes of his property which affects the rights of others.¹⁴⁸

American jurisprudence has long recognized a pragmatic approach to law as a control of society. As far back as in 1921, Mr. Justice Cardozo observed that:

Courts know today that statutes are to be viewed, not in isolation or *in vacuo*, as pronouncements of abstract principles for the guidance of an ideal community, but in the setting and the framework of present-day conditions, as revealed by the labors of economists and students of the social sciences in our country and abroad.¹⁴⁹

Thus, the traditional concepts of governmental regulations of land use are in a state of revolution.¹⁵⁰

The theory of property rights is evolving so as to view land as a resource of the community as well as a commodity of the owner. Traditionally, appropriate zoning based on the local agencies' police power requires no compensation unless a violation of the Fifth Amendment of the Constitution occurs.¹⁵¹ Accordingly, if a taking occurs of private property for public use, then compensation must be made to the owner. The extent to which a restriction on the use of private property amounts to a taking determines the regulation's validity.¹⁵² However, the current trend seems to shift from focusing solely on activities occurring within the physical boundaries of the users property toward the recognition of the interconnectedness between various uses of seemingly unrelated pieces of property. Furthermore, control of land use is being placed into the hands of newly created single purpose governmental agencies whose jurisdiction transcends the borders of local agencies, but

148. The Pacific coastline of the state of California was determined to be an area of critical concern to the entire state in an initiative passed in 1974. This placed certain land use control in critical environmentally impacted zones into several regional commissions and a statewide commission (CAL. PUB. RESOURCES CODE §§ 22,000 *et seq.* (West Supp. 1974).

149. CARDOZO, *THE NATURE OF THE JUDICIAL PROCESS* 81 (1921).

150. *FOURTH ANNUAL REPORT OF THE COUNCIL ON ENVIRONMENTAL QUALITY* (1973) at 121-154.

151. U.S. Const. amend. V, provides: ". . . Nor shall private property be taken for public use without just compensation."

152. *Legislation as a Control Mechanism, supra*, at 30.

which purportedly impose the interests of statewide or regional concerns upon property in "critical" areas. As was recently written by Professor Sax:

Once property is seen as an interdependent network of competing uses, rather than a number of independent and isolated entities, property rights, and the law of taking are open for modification.¹⁵³

The legal foundations of land use planning are in such a state of flux that any discussion thereof, subjects any article on the subject to a high risk of premature obsolescence.¹⁵⁴

Thus, if land use planning is justified for environmental concerns such as the preservation of clean air, clean water, coastlines, and wet lands, certainly the blessing of quiet seclusion is also a protectable social concern.

Early land use planning, prior to the development of an airport can help substantially in reducing the effect of noise generated by aircraft by reserving open space as a buffer zone to absorb what might otherwise be objectionable noise to humans. An example of this advanced planning is the new Dallas-Fort Worth Regional Airport which was recently developed, utilizing 17,400 acres. Compare this with Los Angeles International's 3,000 acres. Only time will tell whether the Dallas-Fort Worth Airport was planned adequately and with sufficient open space and land allocated to compatible uses. Unfortunately, history indicates that airports are generally built in remote areas and, by their very nature, promote such rapid economic growth that uncontrolled development tends to creep into noise affected areas.¹⁵⁵

If the noise affected area is vacant land or is utilized with compatible uses, very little turmoil is created with zoning changes. However, the problem becomes extremely acute when the land is

153. J.L. Sax, *Takings, Private Property and Public Rights*, 81 YALE L.J. 149, 150 (1971).

154. For recent decisions analyzing unique special interest problems, see *Just v. Marinette County*, 56 Wisc. 2d Wisc. 7, 201 N.W.2d 761 (1972); *Village of Belle Terre v. Boraas*, 42 U.S.C.W. 4475 (U.S. April 2, 1974).

155. The problem of developing new airports should be kept separate from the problem created by an established airport which expands to meet the growing needs of the economic community, and in so doing, shifts a portion of the burden of the social and economic costs from the user of the air service to the land occupants in noise affected areas. In particular, the problem is most acute where a small airport serving non-jet general aviation (small aircraft) expands its usage by adding jet traffic over already established residential areas. In its most polite legalistic forms, it is called inverse condemnation, or an unconstitutional taking of rights without compensation. However, the unwilling subjects of this newly added pollution believe a more accurate description of the procedure is an outright theft of the individuals' tranquility.

already committed to a use and then the increased noise makes the use incompatible.

Land use control around airports has been exercised to a certain extent by the federal government by the use of height restrictions.¹⁵⁶ However, these restrictions are aimed only at safety in flight¹⁵⁷ and inadequate consideration has been given by the governmental agencies with respect to noise issues as they relate to land use.

CALIFORNIA AIRPORT LAND USE COMMISSIONS

Although the concept of land use around airports has been discussed for many years, only one state¹⁵⁸ has adopted legislation that deals with the control of the use of land near airports.¹⁵⁹

In 1967, the California legislature created Airport Land Use Commissions (ALUC) in certain counties in the state for the primary purpose of formulating comprehensive land use plans around public airports.¹⁶⁰

Under the California approach, an Airport Land Use Commission was created in each county having a population of 4 million or less in which at least one airport was operating for the benefit of the general public and served by an air carrier certified by the Public Utilities Commission or the Civil Aeronautics Board.

The powers and duties reposed in each Airport Land Use Commission is to:

1. Formulate a comprehensive land use plan around each public airport;
2. To study conditions and make recommendations concerning

156. 14 C.F.R. Part 77 (FAR 77).

157. Although the issue of zoning for crash hazards is not addressed in this article, the issue of safety around airports is a critical one. There is a danger to the occupants of the aircraft, as well as to those on the ground. Research work has been done in this field primarily by the military and the probability of aircraft accidents in any given location is readily ascertainable.

158. See *infra*, note 161.

159. The states of Ohio, Alabama, and perhaps others, have certain legislation dealing with this subject, but utilize a different approach in that airport zoning boards are created to deal with density of use issues. Similar legislation has been introduced in the state of Texas and Arizona during the 1974 sessions, but has not been enacted as of yet.

160. CAL. PUB. UTIL. CODE § 21670 *et seq.* (West Supp. 1974).

the need for height restrictions on buildings near airports; and,

3. To make recommendations for the use of the land surrounding airports to assure safety in air navigation and the promotion of air commerce.

The Commission's comprehensive land use plan must include a long range master plan reflecting the anticipated twenty year growth of the airport. The plan must be consistent with the "State Master Airport Plan".¹⁶¹ The legislation specifically provides that in formulating the land use plan, the Commission "may develop height restrictions on buildings, may specify use of land and may determine building standards, including soundproofing, adjacent to airports, within the planning area."¹⁶²

In response to an Attorney General's opinion that the Airport Land Use Commission does not have any authority to formulate comprehensive land use plans for areas surrounding federal military airports,¹⁶³ the state legislature extended authority to include such areas in 1973.¹⁶⁴

Each Airport Land Use Commission is composed of seven members,¹⁶⁵ two members are representatives from the cities on a constituency unit representation basis.¹⁶⁶ Their appointment is made by a "Mayor's Selection Committee" which is comprised of the mayors of the cities within the specific county. A limitation of their choice is that at least one of the two representatives shall be appointed from a city that is contiguous to a qualifying airport. A selection committee comprised of the managers of all of the public airports within the county appoints two other representatives one of whom must be a representative from an airport operated for the benefit of the general public.¹⁶⁷ Two representatives are

161. CAL. PUB. UTIL. CODE § 21675 (West Supp. 1974).

162. CAL. PUB. UTIL. CODE § 21675 (West Supp. 1974).

163. Ops. Att'y Gen., 284 July 5, 1972 (CU. 72-203).

164. Military aircraft are not designed with noise constraints as are current generation civil aircraft under 14 C.F.R., Part 36. Noise suppression at the source level dissipates some energy and military aircraft must be designed to maximize utilization of power with respect to thrust. As a result, control of land use around military air bases is more important since noisier aircraft are utilized.

165. CAL. PUB. UTIL. CODE § 21670 (West Supp. 1974).

166. "Constituency Unit Representation Basis" is defined by the author to mean that an elected official from a general purpose governmental agency is selected by his governing body to represent not only his agency, but also the entire jurisdiction of the special purpose governmental agency.

167. This situation can create a serious conflict of interest if the owner-operator of the airport is the county and its manager (an employee of the county) is a representative. See CAL. PUB. UTIL. CODE § 21675 (West Supp. 1974) which provides for temporary disqualification of members and the appointment of substitute members in such cases.

appointed by the Board of Supervisors. Finally, one individual "representing the general public" is appointed by the other 6 members of the Commission. Each of the representatives gives a written proxy to an individual to vote in his absence.

The extent of power of an ALUC depends on the adoption or non-adoption of a Comprehensive Land Use Plan. In the formulative stages, typically, an ALUC will adopt a planning area around the subject airport after a public hearing. That area so determined is that land which affects or is affected by aircraft operations. Within this area, the ALUC has advisory power only and assists the city or county which has zoning power by making suggestions relating to land use, sound attenuation or conditioning of use.¹⁶⁸

Once a Comprehensive Land Use Plan is adopted, however, the power of the ALUC is magnified. If any action or regulation of any public agency is inconsistent with the plan, a hearing must be held by the ALUC to determine whether or not the proposed action is in the best interest of the Airport and adjacent area. If the proposed action is denied by the ALUC, the local agency with zoning powers (be it the county Board of Supervisors or a City Council) can only override the Airport Land Use Commission's decision by a four-fifths vote.

In the area where no Comprehensive Land Use Plan has been adopted, the authority of the Commission is merely advisory to the county or city affected with respect to land use in the planning area. The function of the Airport Land Use Commission in areas that are not covered by a Comprehensive Land Use Plan is that a body with expertise in noise control is called upon for recommendations and suggestions to the governing body with zoning power. In many of these instances, the Commission will rule that no objection be interposed to a particular project because the developer has incorporated certain noise attenuation mechanisms in his development plan or the developer is making use of his land that is consistent with the noise expected from the airport operation. On the other hand, in areas that are totally inconsistent with the human

168. *E.g.*, recommending the recording of covenants, conditions, or restrictions or recommending written disclosure to and acknowledgement by all future land occupants that noise or crash hazards exist due to aircraft operations.

169. CAL. PUB. UTIL. CODE § 21670 (West Supp. 1974).

habitation from a noise standpoint (i.e., within a 65 CNEL noise contour), residential units are not only discouraged, but vigorously opposed by the Orange County Airport Land Use Commission.

It should be noted that the powers of the Airport Land Use Commission do not extend to authority over the specific operations of aircraft flying from any of the civilian or military airports, however the operations actually conducted or which are anticipated over the next 20 years must be taken into consideration in establishing the Planning Boundaries and the Comprehensive Land Use Plan.

Public hearings are held by the ALUC prior to the adoption of the Planning Boundaries and the Comprehensive Land Use Plan. At that time any public agency or interested citizen has an opportunity for input. After approval of the Plan, if, in the determination of the Commission, an action or regulation of any public agency is inconsistent with the Commission's Plan, a public hearing must be held by the Commission to determine whether or not the proposed action is in the best interests of the airport and the adjacent area. If the Commission determines that the action is harmful, then the public agency shall be notified and the public agency shall have another hearing to reconsider the action. The public agency proposing the action or regulation, however, may overrule the Commission after hearing by a four-fifths vote of its governing body.

An important factor with respect to the enlargement of any airport is that each public agency with zoning power over an airport within the boundary of the planned area must file any substantive development plan with the Commission for its approval. If this plan is inconsistent with the Comprehensive Land Use Plan, then the public agency shall be notified and shall have another hearing to reconsider its action. Again, this public agency may override the Commission by four-fifths vote of the governing body.

METHODS OF CONTROLLING LAND USE, OTHER THAN ZONING

Local jurisdiction can exercise not only zoning power to control land use, but may also limit use by other means. In most instances, it will mean a cooperative effort between the landowner and the local agency.

Perhaps the easiest method is the purchase and recordation of an easement over the property in question. Obviously, recordation of such an easement serves many practical purposes. Initially, the landowner has a lower investment in the property since he has just received remuneration for the air easement. The property, with

a lower economic base should, through normal economic forces, be used in a manner compatible with the noise generated from overflights. Another important effect is that the recordation of an easement reduces the number of plaintiffs in future litigation. Prior knowledge about the noise problem should limit the purchasers to those who would not be affected by the noise and eliminate those individuals who claim they have no knowledge of the problem prior to their investment in the property.

Provision for the payment of such easements could come from a local governmental agency or the airport itself. The airport can, of course, obtain a grant for the purchase of not only land or interests in land in fee, but also easements and other interests in airspace when applying for federal grants.

An evolving concept of purchasing developmental rights is another possible method to equitably compensate a landowner for the inability to develop his land to its highest and best use. Obviously, compensation would fall in line with the traditional property rights theory of land ownership. On the other hand, the discussion, *supra*, regarding new trends in the concept of property rights may limit usage of this procedure. In fact, it may be held by some courts that a landowner does not have an absolute right to change the natural character of his land where public values are substantially effected.

Another non-zoning method of controlling the effect of noise might be the approval of an environmental impact report subject to the developer restricting any development in such a way that the property would not be developed to cause an increased demand for airport expansion.

An interesting concept has been applied (with the reluctant approval of the developer), by the city of Newport Beach, California, when it required as a condition of approval the recordation of conditions, covenants and restrictions providing that any subsequent transferee or lessee could not resist the city's efforts to control aircraft noise emanating out of Orange County Airport. The developer has a responsibility to require a provision in the lease calling the tenants' attention to the active involvement of the city in restricting jet use at the subject airport. Similar conditions, covenants and restrictions could be recorded which would restrict land

use to uses which would not cause increased demand for airport usage and expansion.

On another occasion, the City of Newport Beach, California, required a developer, as a condition of approval, to disclose to subsequent purchasers the fact that the resident will have a noise exposure from over-flying aircraft or helicopters. This has the effect of placing the initial purchasers on notice of the problem. It does not, however, help the subsequent buyer. A follow-up of that concept would be that an ordinance could require any seller of real estate within noise-affected areas to disclose the fact of noise impact upon the intended purchaser. This would be similar to the "Truth in Real Estate Sales" ordinances that are in effect in some localities requiring a broker to disclose to a prospective buyer authorized uses, occupancy and zoning classification of a parcel of land.¹⁷⁰

CONCLUSION

Noise is one of the few pollutants where technical solutions are available today.

To date, not much success has been obtained from voluntary reduction of noise on a nationwide scale. Few airport operators have really recognized the problem and have attempted to do something about it.¹⁷¹

Substantial changes could be made with appropriate leadership at the federal level requiring retro-fitting of present generation aircraft with the addition of sound absorption material and refanning engines. Such a program is economically feasible and technologically practicable and could be completed within a span of about four years, with minimum impact on the travelling public.

Litigation has been successful in certain areas but has not been an effective tool to totally eliminate the noise problem. The successful case in inverse condemnation only appropriates the rights to keep polluting the air with noise and the land is forevermore burdened with the pollution. Damages for diminution of value of property are a small price to pay for any airport operator if it means that he can continue his operation unencumbered thereafter. Dam-

170. Newport Beach, Calif., Mun. Code § 15.35.010 *et seq.*

171. A notable exception is Orange County Airport, California, although this statement is in great dispute, particularly among the thousands of people who live within the flight path of that Airport. The noise is generated over a highly desirable residential area and has been thrust upon the residents primarily since the advent of jet aircraft. Litigation involving many millions of dollars is pending in spite of the airport management's attempt to help alleviate the problem.

ages recoverable in nuisance suits, however, create a more formidable deterrent in that the cause of action for nuisance arises each time the noise is generated. This provides adequate compensation for the individual and is not limited to merely the landowner or occupier. It seems ludicrous, however, from a social viewpoint, to expose the taxpayer to the claims of nuisance damages and loss of value damages when much less sums of money could be put into constructive elimination of noise rather than just continuing its maintenance and merely pay damages to those suffering from the pollution.

Legislation has not been too successful since, the legislators and the owners of the airport facilities are subject to immense political and financial pressure from the generators of noise.

Land use regulation is, at best, a stop gap measure and is most effective around new airports, but is generally less effective around established airports that have expanded their usage.

Accordingly, the major hope of reduction of noise pollution is in the area of technical advances, improved operational techniques, and land use regulation. However, the blame for the failure to have already eliminated this pollution lies squarely on the shoulders of the aircraft operators, airport owners and operators, and the Federal Agencies and Congress for not insisting on immediate relief.