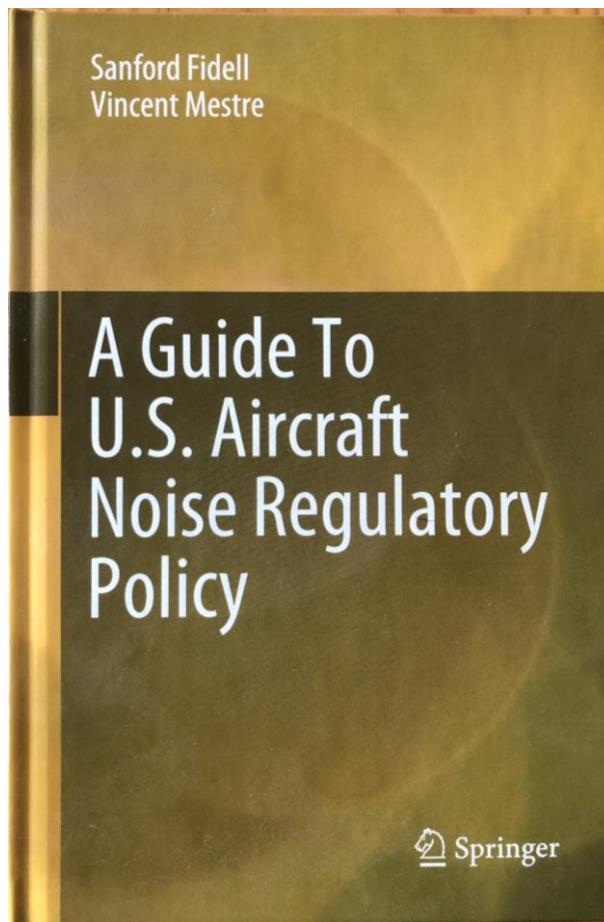


UC DAVIS AVIATION NOISE AND EMISSIONS SYMPOSIUM

LEGISLATION IN THE NEXT CONGRESS: PRIORITIES, PERSPECTIVES, AND PREDICTIONS

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DISCUSSION BASED ON RECENT PUBLICATION



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INTRODUCTION

Current aircraft noise regulatory policies are the product of decades of FAA promotion of U.S. civil aviation, *per* its 1958 - 1996 charter

A century of generous federal aid to civil aviation has provided subsidies intended to socialize the costs of commercial aviation while privatizing its profits

Since civil aviation is no longer an infant industry requiring such fostering, Congress relieved FAA of responsibility for promoting civil aviation in 1996

A quarter of a century later, FAA has yet to make meaningful changes to its regulatory goals

CHRONOLOGY OF US AIRCRAFT NOISE REGULATION

Airlines operated in a highly regulated, price controlled, city-pair environment until deregulation in 1978

Competition changed the face of aviation post-deregulation, converting city-pair routes to hub-and-spoke networks

Deregulation provided little or no incentive to industry to reduce aircraft noise emissions

CHRONOLOGY (CONT.)

HUD was first federal agency to act (to protect values of home mortgages it backed)

The 1972 Noise Control Act named EPA as the lead agency for noise control

The Aviation Safety and Noise Act (ASNA) reassigned EPA's primacy in aviation noise control to FAA later in the decade

FAR Part 150 (the implementing regulation for ASNA) defined a DNL of 65 dB (corresponding to a CNR value of 100) as a "significant" noise impact

CNR = 100 had been intended to keep noise complaints from military base housing to manageable numbers in the early 1950s

CHAPTER 3: AIRCRAFT NOISE EFFECTS ON INDIVIDUALS AND COMMUNITIES

Current regulatory policy is ostensibly based on a 1992 dose-response relationship between long term cumulative exposure to *all* forms of transportation noise and the prevalence of high annoyance

Complaints and adverse health consequences play no role in current aircraft noise regulation

AIRCRAFT NOISE MEASUREMENT AND MODELING

Industry recognized by the early 1960s that jet noise could severely constrain aviation growth

Federal Aviation Regulation Part 36 was formulated to establish certification noise limits by aircraft weight class

Airports began installing permanent noise monitoring systems by the late 1960s

These have developed into sophisticated noise, flight track, and complaint logging systems

AIRCRAFT NOISE MEASUREMENT AND MODELING (CONT.)

Computer-based noise modeling started in the 1960s and developed rapidly in the late 1970s and early 1980s

FAA ported INM to the personal computer in 1982

SAE published best practice guidelines for noise modeling algorithms and databases

FAA incorporated INM in AEDT in 2015

Measurement and modeling uncertainty complicates interpretation of noise exposure predictions, and to remain poorly understood

CHAPTER 5: AIRPORT-VICINITY LAND USE PLANNING

ICAO Balanced Approach

Reduction at source, operational procedures,
operational restrictions, land-use controls

Topic discussion divides airports into two categories

- airports with incompatible land use in place prior to the introduction of jet aircraft
- airports surrounded by mostly undeveloped lands

Land use controls (other than sound insulation and property acquisition) are plausible only for the second category

LAND USE PLANNING (CONT.)

FAR Part 150 (voluntary and guidelines only), State (land-use enabling legislation), Local (planning, zoning, building permits)

No federal authority to control land use

Generally weak incentive for local land-use control (developer has distinct advantage)

Little historical evidence to suggest that stricter land use controls would have reduced encroachment, other than in a few strict control municipalities

CHAPTER 6: AIRPORT NOISE MITIGATION

Control at source: FAR Part 36

Operational controls: thrust cutbacks, flight track alteration, preferential runway use, optimized performance descent

Operational Restrictions: limits on number and time of operations, noise-based landing fees, all effectively prohibited by 1990 ANCA

CURRENT AIRCRAFT NOISE REGULATORY POLICY IS BASED ON OBSOLETE ASSUMPTIONS

Airports are the best and highest use of expensive urban land

National needs for air transportation services are always greater than needs for habitable neighborhoods

Aircraft noise-induced annoyance can be predicted exclusively from long term cumulative noise exposure

All communities respond identically to aircraft noise exposure

CHAPTER 7: POTENTIAL CHANGES TO AIRPORT NOISE POLICY

Establish explicit, systematic rationale for defining significance of noise exposure

Abandon one-size-fits-all approach to disclosure of dose/response-based assessments of noise impacts

Amend or repeal ANCA

De-link policy thresholds for significance of impact, eligibility for acoustic insulation, and land use compatibility

Adopt regional focus on airport capacity

POTENTIAL LEGISLATIVE CHANGES (CONT.)

Revision of revenue diversion restrictions

Closer scrutiny of airport noise contour assumptions for land-use planning purposes

Integrate Airport Master Planning with codified Part 150 guidelines and encourage social surveys as part of local process