STATEMENT OF CARL E. BURLESON, DIRECTOR, OFFICE OF ENVIRONMENT AND ENERGY, FEDERAL AVIATION ADMINISTRATION, BEFORE THE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE, SUBCOMMITTEE ON AVIATION, HEARING ON AVIATION AND THE ENVIRONMENT: NOISE. OCTOBER 24, 2007

Chairman Costello, Congressman Petri, Members of the Subcommittee:

I am pleased to appear before you this morning to address an issue that is central to any discussion of aviation and the environment, aviation noise. Today I would like to provide a brief overview of the Federal Aviation Administration's (FAA) activities that help to minimize the environmental impacts associated with aviation noise, and how we are taking into account other environmental concerns as well as we move forward with the transformation to the Next Generation Air Transportation System (NextGen).

As this Committee well knows, in 2003, we celebrated the 100th anniversary of the Wright Brothers flight and the opening of the aviation age. What I suspect many do not know is that 2003 also marked the 92nd anniversary of the first editorial complaining about aircraft noise. An editorial from AERO magazine in 1911 entitled "On the Fitting of Silencers" noted "that the tremendous racket that is present associated with the aero plane plays a considerable part in prejudicing the public against these machines."

The good news is we have overcome enough of the public "prejudice against these machines" to have 2.0 billion people fly each year – more than the number of people that populated the earth in the early 20th century. However, the challenge is that aircraft noise

remains a central environmental concern as it both impacts the quality of life of residents near airports and slows the growth of aviation and the benefits it brings to our nation.

Major strides in lessening the environmental effects of aircraft have been made over the past few decades in the United States. As you can see in the attached Chart 1, in a thirty-year period between 1975 and 2005, passenger enplanements grew from a little over 200 million to more than 700 million. In that same time period, exposure to significant aircraft noise declined more than 90 percent – from over 7 million Americans exposed to significant* aircraft noise in 1975 to about half million today. Few industries can cite this level of improvement in environmental performance while achieving such significant growth.

As you can see in Chart 2, the technology in aircraft has improved substantially over the last few decades. In fact, quieter aircraft and engine technology, supported by national regulatory and legislative actions, changed the nature of the fleet operating today and produced the bulk of gains in reducing aircraft noise. This progress in aircraft technology was made possible by significant federal and industry investments in research and development. Technology has been complemented by enhancements in air traffic procedures, efforts to foster compatible land-use, and a federal airport noise compatibility program.

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* Annual Day-Night Sound level of 65 decibels or higher (DNL 65 dB)

As Chart 3 shows, FAA has supported noise compatibility programs at nearly 300 airports in the U.S. with technical assistance and with financial assistance for noise mitigation measures, such as soundproofing homes and public buildings such as schools and hospitals located near airport property, in addition to land acquisition and relocation assistance. This investment occurs through the Airport Improvement Program (AIP) and the Passenger Facility Charge (PFC) program. In 2007, 35 percent of AIP discretionary funding, or approximately $300 million, was set aside for noise and environmental projects. Since 1982, the FAA has provided about $5 billion in AIP grants and, since 1990, we have approved nearly $3 billion in PFC spending--a total of almost $8 billion in financial assistance to airports for noise projects.

The FAA's noise compatibility program, known as the Part 150 program (after the section of the regulatory code where it is codified), has played a major role in advancing compatible land use near airports by offering federal grants to help reduce noise impacts and non-compatible land uses. FAA has also advanced compatible land use by carrying out noise abatement air traffic procedures and voluntary preferential runway use programs approved under Part 150. This process is a voluntary, comprehensive, balanced approach. It is also an inherently collaborative one, relying on airport operator leadership, stakeholders' involvement, and FAA technical assistance, FAA approval, and AIP or PFC funding or other implementation of approved measures. The basic premise underlying this program is that decisions on airport noise compatibility are ultimately local decisions and there is no "one size fits all approach" or a single solution for all airports, but that one set of tools can be used by all airports.

There are two main products of a Part 150 study: a noise exposure map and a noise compatibility program. The map depicts and quantifies an airport's current noise exposure and forecasts future noise exposure, going out at least five years. This knowledge supports both current and future noise planning efforts. With regard to Part 150 noise compatibility programs, these contain recommendations tailored for that airport and community that can reduce aircraft noise exposure and non-compatible land uses with measures such as noise abatement flight tracks, preferential runway use, land acquisition and relocation, soundproofing, special zoning, enhanced building codes, and disclosure requirements.

Congress has also given FAA the flexibility to fund certain noise projects with AIP funds at airports that do not have a Part 150 program. We can fund sound insulation of public buildings, including schools and hospitals, in an area impacted by airport noise. Schools near airports under the jurisdiction of the Port Authority of New York/New Jersey, near Chicago O'Hare and near Boston Logan airports have benefited from this flexibility. We also provide funding for environmental mitigation for airport development, including noise mitigation that has been included as a commitment in an environmental Record of Decision for an airport development project. Under a pilot provision that was included in Vision 100, we issued two grants, again outside the Part 150 process, to noise-impacted communities located around large and medium hub airports for planning and projects to reduce noncompatible land uses by State and local governments. The communities receiving these grants, Des Plaines, Illinois, near Chicago O'Hare International Airport,

and San Mateo, California, near San Francisco International Airport, were able to use the funds for compatible land use planning. We think this authority has been useful, and although it lapsed at the end of fiscal year 2007, we are pleased that this Committee's reauthorization bill adopted the Administration's proposal to extend it as part of the reauthorization of our programs.

The restructuring of U.S. airline fleets in the aftermath of September 11th, driven by a number of market changes, including the rise in fuel costs in recent years, led to a steep reduction in the national noise exposure between 2002 and 2004 (see Chart 4). You can see in Chart 5 that there has been nearly a 70% reduction of older, hushkitted* aircraft operating since 2000. However, Chart 4 also shows that a resurgence in aircraft operations has begun to reverse the downward trend of noise exposure. So while FAA's targets of absolute reductions in national noise exposure from 2002 have been met to-date, you can see in Chart 4 that we face an increasing challenge in our ability to sustain the current target of 4% reduction per year .,

Despite impressive achievements, aircraft noise still affects people living near airports. It remains the most significant environmental challenge facing airlines and airports as they seek to grow capacity. And I am sure that many citizens in communities around airports in the U.S. will take little solace from a declining national trend. They remain concerned about the need to deal with aircraft noise in their communities. We understand this. Let me share how we're tackling this continuing challenge.

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* "Hushkitted" aircraft means Stage 2 aircraft whose engines were modified sufficiently to meet Stage 3 noise requirements.

We laid out a national vision and strategy for tackling noise, as well as other key environmental impacts with respect to aviation, in a report provided to Congress in 2005. It is important to note the report was not just a government vision of what should happen. Rather, a wide cross section of stakeholders provided input in creating this vision--including a number of community groups living near airports. This report has not collected dust on a shelf. It has become the basis of the environmental strategy at the heart of our NextGen plan.

For NextGen, we are committed to reducing significant noise impacts even as we grow the aviation system. We are committed to continuing to achieve absolute reduction in the number of people exposed to significant noise. This goal requires a robust and multi-faceted environmental program that develops and invests in new technologies, takes advantage of operational advances, and includes effective policies and investments.

We are conducting research to advance our current capabilities to measure and assess the impact of aircraft noise. This includes evaluating metrics to characterize aircraft noise and assessing the health and welfare impacts. We are investigating various noise metrics such as loudness and single event metrics. Research also includes aircraft noise in national parks where a quiet setting is a generally recognized purpose, and low frequency noise around airports. We are also conducting research to attempt to better correlate land use and aircraft noise patterns and potentially identify a land use metric. Based on a recently completed assessment of noise characterization within the Airports Cooperative

Research Program, we are developing a strategic plan for prioritizing investment in NextGen noise research.

It is also important to take into account the relationship between noise and aviation emissions – as there are often trade-offs among environmental factors as you change aircraft design and operations. Maximizing an aircraft engine or an operational procedure for noise may cause unintended increases in emissions, and vice versa. We have made an early substantial investment in advanced computer models to better calculate aviation noise and emissions, their relationships and their health and welfare impacts, to increase our knowledge base and improve future solutions. One of our future challenges is to find solutions not just for noise but simultaneously for local air quality *and* climate effects *and* energy consumption. We won't have the luxury of considering one aviation impact in isolation from others.

In the near term, we want to accelerate the ability to employ operational procedures, such as continuous descent arrivals or CDA, to reduce aviation's environmental impact. CDA allows an airplane to fly a continuous descent path to land at an airport, rather than the traditional "step downs" or intermediate level flight operations. The airplane initiates descent from a high altitude in a near "idle" engine (low power) condition until reaching a stabilization point prior to touch down on the runway. You can see in Chart 6 the results of a demonstration of CDA at Louisville Airport- and significant reduction in areas of exposure to aircraft noise.

CDA is one of those win-win strategies, having environmental and economic benefits, that can reduce noise, emissions, and fuel burn, as well as flight time. Our successful demonstrations at Louisville and Atlanta airports and the integration of a CDA at Los Angeles airport are examples of the ongoing work. We are very pleased that this Committee's aviation reauthorization bill, H.R. 2881, includes a proposal that would help us enhance the development and use of CDA and other operational flight procedures. We also appreciate inclusion of a provision that would expand AIP eligibility to include environmental assessment of noise abatement flight procedures. These offer significant near-term help for reducing noise exposure.

There are also near term environmental benefits to be gained through airspace redesign. As you know from the recent hearing before this Subcommittee, the New York/New Jersey/Philadelphia Airspace Redesign would reconfigure that airspace to make routes and procedures more efficient and less complicated, allowing for improved use of available runways, and more flexibility to manage delays in severe weather. In addition to the benefits for delay reduction, which translates to economic savings, the environmental advantages include reduced fuel consumption over time which translates into reduced aircraft emissions, including greenhouse gas emissions. As the FAA analysis made clear, this redesign is not without impacts on some individuals and communities, especially in the short-term. However, the total number of individuals exposed to a day-night sound level greater than 45 dB will be reduced by more than 600,000. These are impressive gains.

Setting aside this particular redesign effort, it is important to remember there are airspace redesigns ongoing across the U.S., and these efforts are very important from an environmental standpoint in addition to reducing delays. Without the ability to change the structure of airspace across the U.S., we will not be able to take full advantage of the capabilities that advanced aircraft and air navigation procedures offer. This will translate into less ability to manage not only noise, but local air quality and greenhouse gas emissions impacts from aviation.

Advances in technology must play a crucial role if we are to repeat our successful past thirty-year effort at reducing noise while growing the aviation system. We are identifying technology gaps and targets we will need to address to meet the noise challenges in the years ahead. Proposals in the pending aviation reauthorization bill, such as the consortium to develop lower energy, emissions and noise technology (CLEEN) and the pilot program for demonstrating promising technologies, would offer FAA and other partners the ability to pursue research and accelerate the development of new noise and emissions technologies, as well as alternative fuels to reduce noise and emissions of the U.S. fleet. We also have a cooperative working relationship with NASA and broad participation of outside stakeholders through our research advisory committee, the Partnership for AiR Transportation Noise and Emissions Reduction (PARTNER) Center of Excellence advisory board, and our NextGen Environmental Working Group.

Another vital area of effort is FAA's work internationally. FAA represents the U.S. at the International Civil Aviation Organization (ICAO) in developing new noise and

emissions standards, including a pivotal role in the models and data underpinning these decisions. We are pursuing partnerships with other authorities and the international industry in a number of areas to advance improvements in aviation's environmental performance. For example, earlier this year the FAA and European Commission announced the Atlantic Interoperability Initiative to Reduce Emissions, or AIRE. The AIRE initiative is targeted to undertake demonstrations in both the U.S. and Europe to accelerate the ability of airlines and air navigation authorities to employ air traffic procedures that reduce aviation's emissions and noise footprint on either side of the Atlantic.

In closing, it is clear today that aircraft noise impacts the public and remains a key constraint on the future growth of aviation. It is also evident we have no "silver bullets." What we do have is a clear vision of what the Next Generation system needs to achieve in environmental improvements – absolute reduction in significant impacts even while growing the system, and we are working hard toward those goals. We initiated a number of endeavors that will help get us there and have presented proposals in our reauthorization that are vital if we are to be successful in these efforts—proposals that this Committee has supported in large part.

Success will require partnership and shared responsibilities among many stakeholders—with air carriers operating quieter and cleaner aircraft; airports providing good planning and local environmental mitigation measures; air traffic management facilitating environmentally-friendly procedures consistent with safe and efficient operation; federal

programs and investments supporting the necessary technology and operational improvements and environmental mitigation; and local governments ensuring compatible land-use around airports. The FAA is committed to working with all stakeholders to find the right balance to manage capacity growth in a sound environmental manner.

Mr. Chairman, that completes my prepared statement. I would be happy to answer any questions you and the Members may have.

Chart 1: Trends in Aircraft Noise Exposure and Capacity Expansion

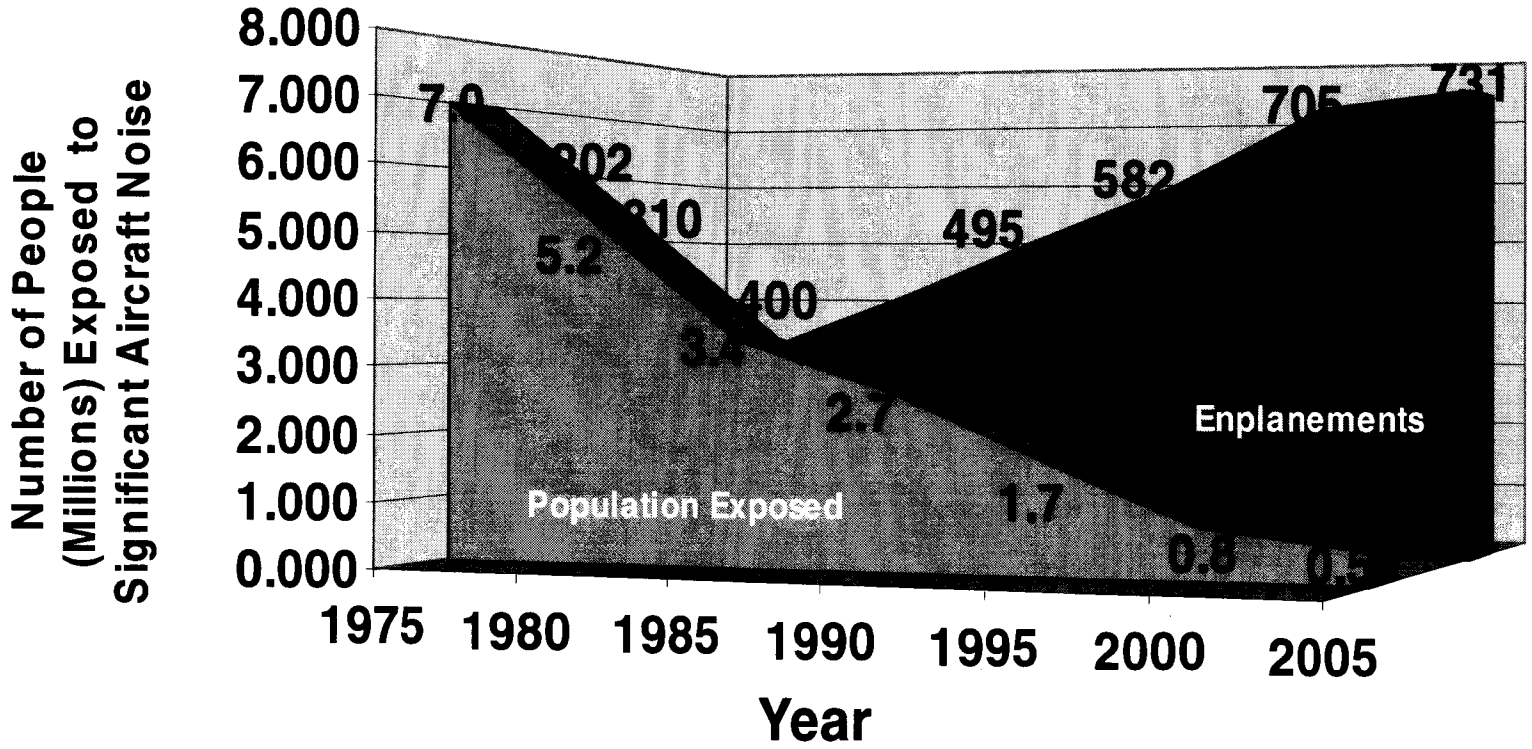


Chart 2: Progress in Noise Reduction

Significant Progress has been made…

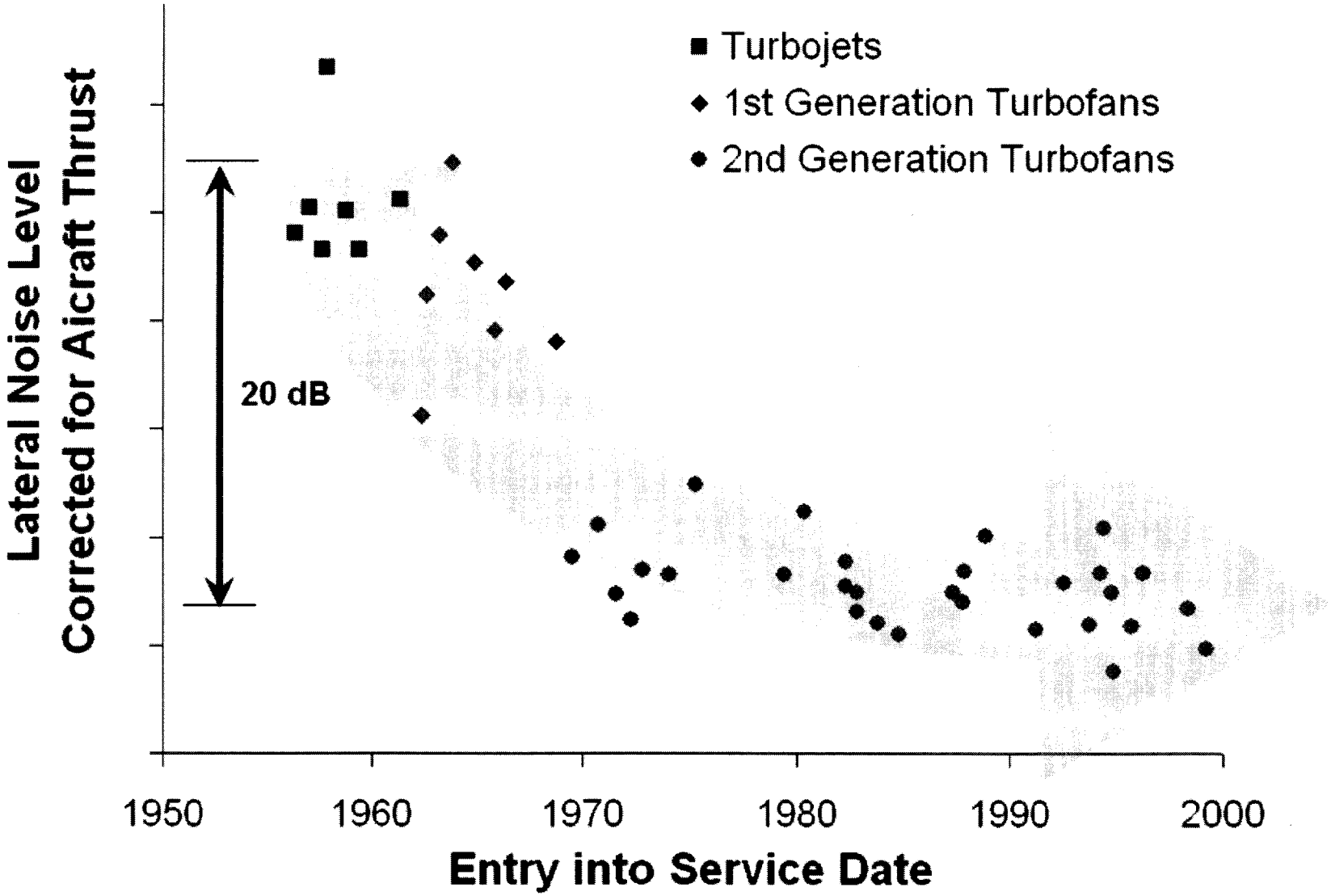


Chart 3: Financing Noise Mitigation: Resources Invested

- Approved Noise Compatibility Programs:

  325 (includes updates)

- AIP Grants Related to Noise:
  - FY 1982-2007: $5.0 billion
- PFC Funding Related to Noise:
  - FY 1992-2007: $2.8 billion

Chart 4: National Noise Exposure Trends vs. FAA Targets

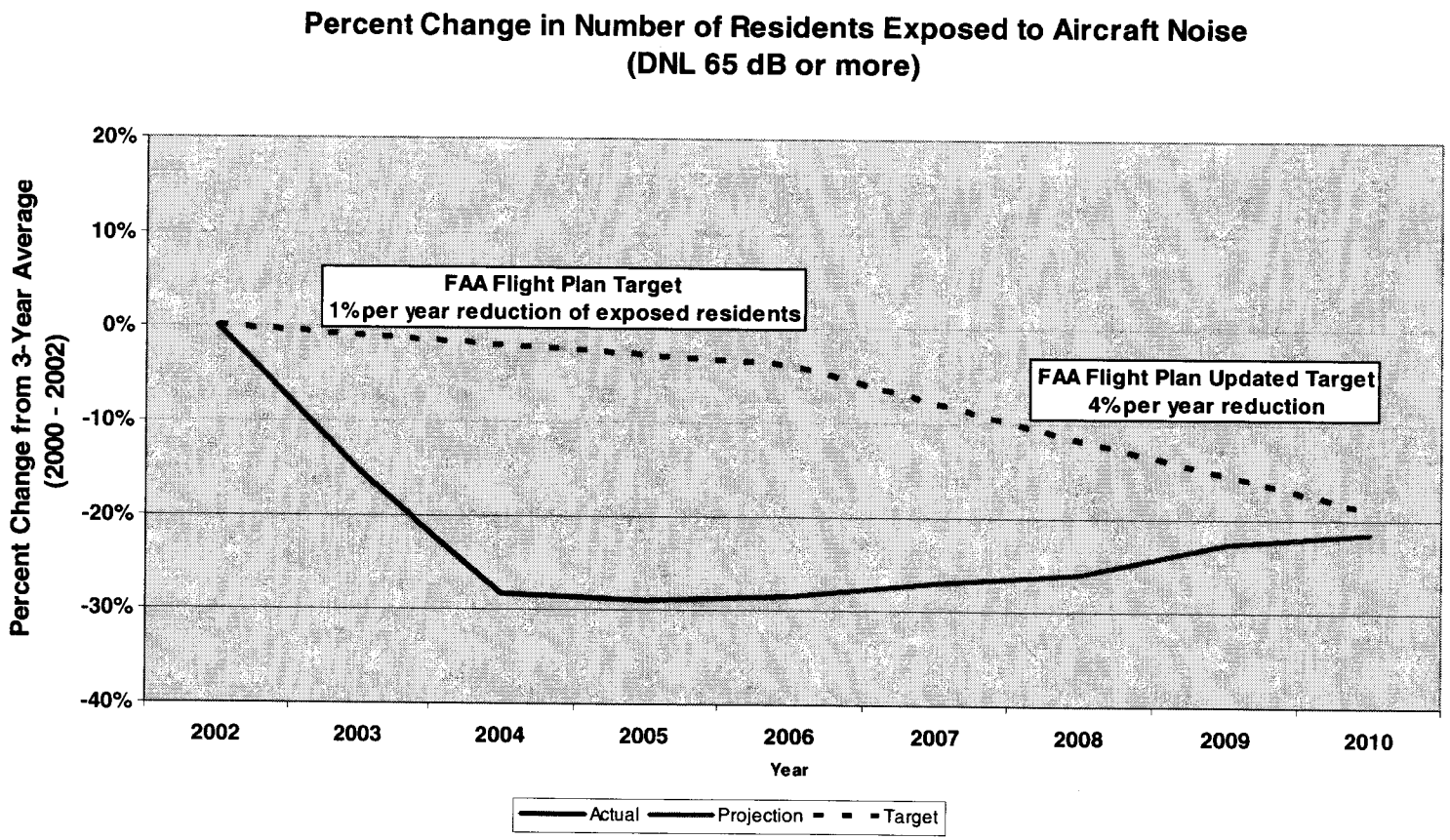


Chart 5: Hushkitted Aircraft in US Fleet

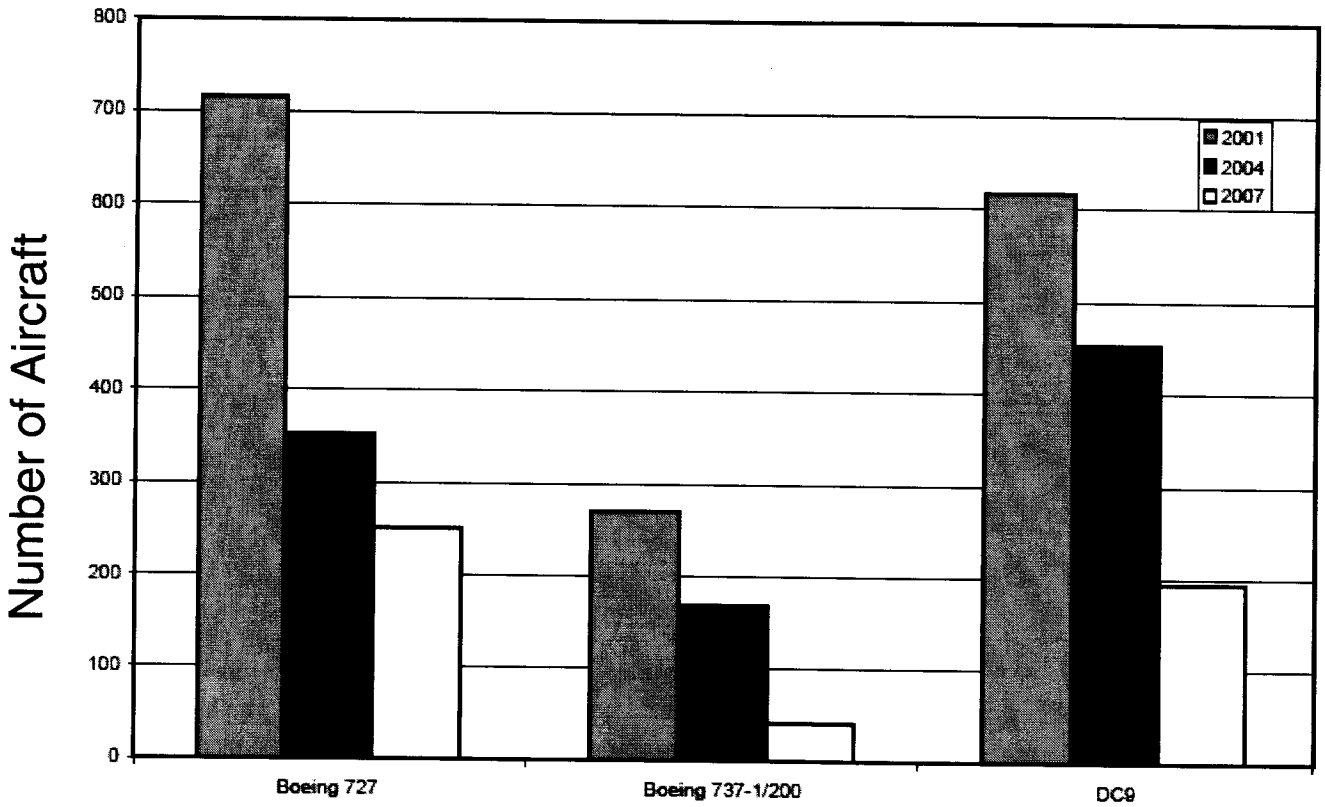
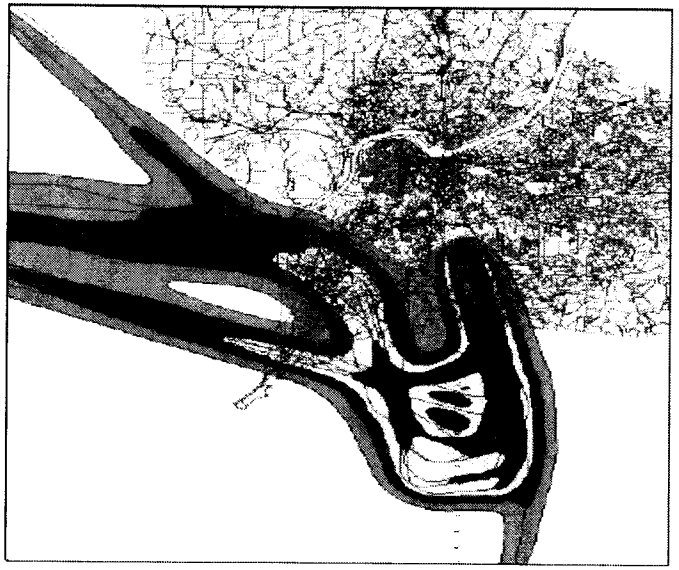
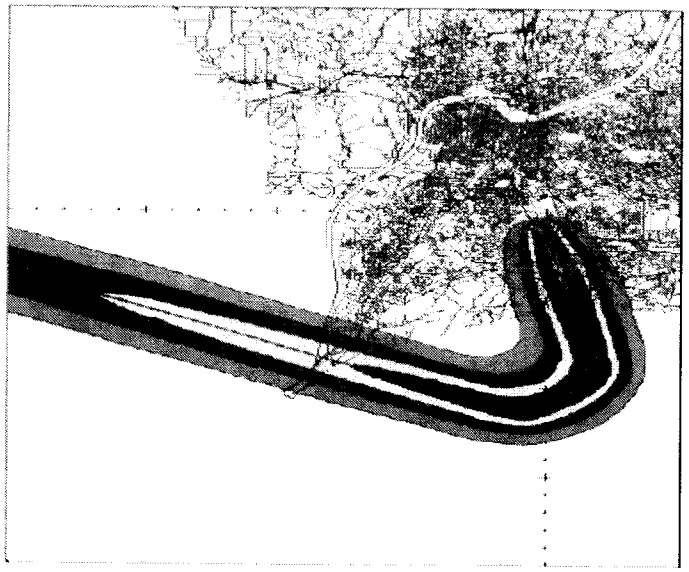


Chart 6: Results of Continuous Descent Arrivals at Louisville

Normal Flight Arrivals



Using CDA



Reduction in Noise Exposure Area

3 Hr. DNL	35.0	40.0	45.0	50.0	55.0	60.0	65.0
Square miles	360.49	208.89	108.08	46.05	19.71	6.32	2.31
Color							