GAO

United States
General Accounting Office
Washington, D.C. 20548

Resources, Community, and
Economic Development Division

B-275247

December 17, 1996

The Honorable Harold E. Ford
House of Representatives

Dear Mr. Ford:

Airports are responsible for controlling aircraft noise and mitigating its effects in the immediate vicinity of airports. Under federal law, the Federal Aviation Administration (FAA) assists airports in developing noise mitigation programs and provides funding for airport noise compatibility planning and for projects to implement airport noise compatibility programs approved by FAA.[1] To carry out its statutory responsibilities, FAA established the Part 150 program through 14 C.F.R. Part 150 to encourage airports to identify areas of land that are incompatible with airport operations and to propose programs to reduce this incompatibility. Approved Part 150 programs are funded through FAA's Airport Improvement Program (AIP).

Part 150 requires that aircraft noise impacts be measured and depicted in the form of a map consisting of continuous noise contours based on current and projected airport operations. Noise contours are represented as lines or bands of equal noise exposure around the airport, similar to ground contours on topographic maps that represent equal elevations. In February 1988, FAA approved the Memphis airport's Part 150 program subsequent to its acceptance of noise maps in September 1987. The program has been financed primarily by approximately $87 million in AIP funds and $20 million in bonds issued by the airport authority, making it the fourth largest in the country. The Memphis program has emphasized land acquisition in the most severely impacted areas as the primary means to mitigate noise. Memphis is now updating its 1987 study to account for changes in airport operations since its program was approved.

[1]49 U.S.C. 47501-47510, 47117.

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This report addresses questions that you raised about the Memphis airport's Part 150 study and program. Specifically, the report provides information on the following: (1) How accurately did the 1987 Memphis study predict noise impacts? (2) What additional noise mitigation actions does the airport authority plan to take on the basis of the results of its Part 150 update and expected AIP funding? (3) To what extent has the airport followed FAA's guidelines for establishing the fair market value of residences acquired with AIP funds, determining relocation assistance, and establishing an appeals process? (4) To what extent has the airport authority complied with grant assurances for the disposal of land purchased for noise compatibility purposes and the use of revenues for projects concerning airport noise?

In summary, we found the following:

- The 1987 Memphis study was conducted in accordance with the methodology established by FAA for the Part 150 program. Although the airport authority used the best data and tools available at that time, more current data on aircraft operations, fleet mix, and flight tracks suggest that the study probably overestimated the future noise impacts. (See enc. I for further discussion of the study.)

- The airport authority has not yet identified additional actions it will take to further mitigate noise at Memphis airport. The expansion of the Memphis program will be contingent on the results of the Part 150 update which is not expected to be approved by FAA until October 1997. The Memphis program is likely to be limited by several factors, including a reduction in the level of AIP funding available for noise mitigation. (See enc. II for further discussion about plans to mitigate noise at Memphis airport.)

- According to a 1992 Department of Transportation (DOT) Office of Inspector General report of the Memphis airport's property acquisition and relocation assistance program, the airport authority adequately supported the fair market values paid for acquired properties, in accordance with FAA's guidelines. However, the report noted several deficiencies in the documentation of appraisals, and the authority has corrected those deficiencies since that time. With respect to relocation assistance, the report indicated that replacement housing benefits paid to homeowners in 10 of the 13 cases sampled were excessive because payments were based on superior replacement dwellings. These payments were excessive by $2,400 to $10,000. While the airport authority did not agree with this finding, we found that it had revised its market research procedures for selecting and documenting replacement housing benefits. Regarding the process for appealing relocation

assistance benefits, we found the airport authority's procedures to be in compliance with FAA's guidance. (See enc. III for more information about this program.)

- Federal law, as well as AIP grant assurances, require that land acquired under Part 150 be sold at the earliest practicable time. However, the airport authority has not yet sold parcels of land acquired under its Part 150 program. Airport officials cited difficulties they have experienced in assembling small residential lots into larger and more marketable tracts of land because some residents have opted to remain in the buyout areas. The officials also noted difficulties in rezoning the buyout areas for uses that are compatible with airport operations–as industrial and office parks, for instance–but AIP grant assurances do not require rezoning. (See enc. IV for further discussion of the AIP grant assurances.)

You also requested that we identify the (1) federal agency with oversight responsibility for environmental concerns with aircraft emissions, (2) sources of funding for the development of Swinnea Road to the east of the airport, and (3) FAA's statutory responsibilities for reviewing noise maps. (Information on these items is provided in enc. V.)

SCOPE AND METHODOLOGY

To prepare this report, we interviewed officials from FAA's headquarters, southern region, and Memphis Airports District Office; the Memphis-Shelby County Airport Authority; the consulting firms of Greiner, Inc., and Leigh Fisher Associates; and DOT's Office of Inspector General. We reviewed Memphis airport's 1987 Part 150 study and program; drafts of the Part 150 update; evaluation reports of FAA's noise model and noise metrics; FAA's guidelines for property acquisition, relocation assistance, and the appeals process; AIP grant agreements for the Memphis Part 150 program; relevant Office of Inspector General reports; and correspondence between FAA and the Memphis-Shelby County Airport Authority. Our review of the 1987 Part 150 study focused on the noise map that describes future operations (2001-10) underlying the Part 150 program. We also reviewed appropriate laws and regulations. We performed our review from October through December 1996 in accordance with generally accepted government auditing standards.

AGENCY COMMENTS

We provided DOT with a draft of this report for its review and comment. We met with FAA officials, including the Manager, Community and Environmental

Needs Division. FAA generally agreed with the facts as presented but suggested clarifying language, which we incorporated as necessary. We also provided the enclosures in our draft report to the Memphis-Shelby County Airport Authority. Airport officials told us that they agreed with the factual information presented to them but provided technical corrections on how flight tracks were modeled in the 1987 Part 150 study and its update.

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We are sending copies of this report to interested congressional committees, the Secretary of Transportation, and the Administrator of FAA. If you or your staff have any further questions, please call me at (202) 512-2834. Major contributors to this report are listed in enclosure VI.

Sincerely yours,

John H. Anderson, Jr.

John H. Anderson, Jr.
Director, Transportation and
Telecommunications Issues

Enclosures - 6

ACCURACY OF THE 1987 MEMPHIS NOISE STUDY'S PREDICTIONS OF NOISE IMPACTS

PART 150 METHODOLOGY

Memphis airport's study was conducted in accordance with Part 150 regulations, which establish a single system of measuring and determining individuals' exposure to airport noise. Part 150 requires that aircraft noise impacts be measured and depicted in the form of a map showing continuous noise contours based on current and projected airport operations. Part 150 also specifies that the measurements used in the analysis be expressed in terms of the average yearly day-night noise level (DNL).[2] Part 150 requires that noise contours be drawn at noise levels of 65, 70, and 75 DNL and that they be superimposed on land-use maps for comparison with existing or future land-use patterns. To produce the contours, Part 150 specifies the use of a methodology or computer program approved by the Federal Aviation Administration (FAA), such as FAA's integrated noise model. FAA's integrated noise model, which was released in January 1978, is the recommended tool for measuring airport noise impacts and the one used to generate the noise maps for the Memphis airport.

FAA's noise model, which has been substantially updated since its release, uses inputs such as aircraft activity levels, fleet mix, flight tracks, and runway utilization patterns. These data are obtained from historical and projected operating statistics, climate data, and discussions with key airport or air traffic control tower personnel. Additionally, the model relies on aircraft manufacturers' flight profiles, which represent how an aircraft flies under standard atmospheric conditions. FAA's model and the flight profiles have been validated in studies conducted at Seattle-Tacoma, Washington National, and Dulles International airports.

Although the noise model has been updated since the original Part 150 study, officials from FAA's Office of Environment and Energy believe that these improvements will not significantly affect results. These improvements allow for additional data inputs, on such things as engine runup operations, weather, runway headwinds, and slant range based on airport terrain. Noise maps for Memphis airport's Part 150 update were generated by FAA's updated noise model.

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[2]The DNL measures cumulative sound in decibels over a 24-hour period to determine an average annual noise level at a specific location. The 24-hour sound level is adjusted by adding a 10-decibel penalty to nighttime (10:00 p.m. to 7:00 a.m.) noise to account for increased annoyance from the noise during that period.

USE OF DNL METRIC FOR MEASURING AIRCRAFT NOISE

Some citizens and public interest groups have expressed concern that the DNL metric may not completely reflect the human response to an individual event and accurately account for impacts of night flights. According to a 1992 study by the Federal Interagency Committee on Noise (FICON), which was formed to review federal policies that govern the assessment of airport noise impacts, criticisms of the DNL metric are a result of a lack of understanding of the metric and how it accounts for single events and the impacts of night flights. The study explains that the averaging of sound over a 24-hour period does not ignore the louder single events but actually tends to emphasize the sound level and number of those events.

For example, an average noise level over a 2-minute period during which the noise is 100 decibels for 1 minute and 50 decibels for 1 minute results in an average noise level over the 2-minute period of 97 decibels, not 75 decibels as one might expect. This is due to the logarithmic nature of the decibel unit, which causes sound levels of the loudest events to control the 24-hour average. The following example further illustrates how the averaging of noise levels actually emphasizes the higher levels:

- Fifty decibels for 54 hours and 100 decibels for just 60 seconds logarithmically averages to 65 decibels over the entire period.

The FICON study concludes that the DNL is the superior metric to account for variations in the noise environment, including such factors as the number of flights, loudness of individual aircraft, and percentage of night flights. FICON also recommends that the DNL continue to be used as the primary metric for aircraft noise exposure. As a result, all federal agencies have adopted the DNL as the metric for airport noise analysis in environmental impact statements and assessments.

The use of the DNL as the sole metric for determining airport noise impacts has also been upheld in recent court decisions. For example, in a decision rendered in Communities, Inc. v. Busey, 956 F.2d 619 (6th Cir. 1992), the court ruled that FAA, in approving the Louisville airport improvement plan, was not required to go beyond the cumulative noise impact methodology in determining noise contours, despite contentions that single-event noise analysis revealed significant noise problems for areas outside contours. In Seattle Community Council Federation v. FAA, 961 F.2d 829 (9th Cir. 1992), the court upheld FAA's decision to rely solely on cumulative noise data that were not enhanced by single-event noise measurements at Seattle airport.

SINGLE-EVENT ANALYSIS

Although the DNL is strongly influenced by maximum sound levels, some citizens believe it does not convey the loudness of individual flyovers because the DNL is usually much lower than the maximum noise level. Some Memphis residents would like the airport's noise maps to be based on a single-event analysis, which uses sound exposure levels (SEL) as the noise metric. The SEL represents the accumulation of sound over the duration of an aircraft event and is expressed as a level of sound normalized to a 1-second duration, which allows for a comparison of events that have different exposures. As a result, if two aircraft events had the same intensity, the event that had the longest duration would have the higher SEL. Because the SEL is normalized to 1 second, it will almost always be larger than the maximum sound for the aircraft event.

To determine the effect that a single event has on the DNL metric, we asked FAA to identify the SEL value needed to create a significant change in an annualized DNL of 65.2 at Memphis. FAA considers a 1.5-decibel change to be a significant change in the DNL. An analysis by FAA's Office of Environment and Energy showed that it would take a daytime event with an SEL of 110.7 or a nighttime event with an SEL of 100.7 to change a location with 65.2 DNL by 1.5 decibels. Five nighttime events, each with an SEL of 94.0, would also cause the 65.2 DNL to change by 1.5 decibels.

The FICON study concludes that single-event prediction methods do not describe the overall noise environment and have limited application in land-use planning. Specifically, there is no accepted methodology for aggregating the impacts of single events into some form of cumulative impact metric, and single-event metrics do not describe the overall noise environment. The study maintains that it is not possible to infer that an entire residential area is simultaneously exposed to the same single-event level, since noise levels decrease rapidly with increasing distance from the flight track. According to the study, SELs will vary for a variety of reasons, including aircraft weight, temperature, wind speed and direction, precipitation, and ground conditions.

CURRENT DATA ON AIRPORT OPERATIONS SUGGEST THAT THE PART 150 STUDY OVERESTIMATED NOISE IMPACTS

Since the acceptance of Memphis airport's 1987 Part 150 study, changes in aircraft operations and carriers' fleet mix have occurred, and more accurate information about aircraft flight patterns has become available. While the study relied on the best information available at that time, changes in events suggest that the original study probably overestimated the noise impacts at the Memphis airport. The use of more current information by the preliminary update has resulted in projections of lesser future noise impacts than projected by the 1987 study.

For example, our review identified the following major differences in key assumptions between the original study and the update:

Table I.1: Major Differences in the Original Part 150 Study and the Update

Integrated noise model variables	1987 Part 150 study's "future" (2001-10) noise exposure map	Update's noise exposure map for the year 2000 (preliminary)
Annual operations	460,000	414,300
Percentage of Stage 3 jet flights	57	100
Number of jet departure tracks	18	30

Note: The quietest jets currently in use are called Stage 3; the noisiest are called Stage 2. The stages represent standards that are based on different levels of aircraft noise.

The 1987 Part 150 study overestimated the number of annual operations forecast for 2001 by approximately 46,000 operations on the basis of the authority's current activity forecasts for the Memphis airport. According to FAA's terminal area forecast, Memphis airport will not reach a level of 460,000 operations until 2009. Officials from FAA's Memphis Airports District Office and the airport authority attribute the higher estimates to a slower growth in Northwest Airlines' operations than originally anticipated and differences in assumptions of aircraft capacity supporting the estimates. According to FAA's Memphis office, airport operations are traditionally estimated on the basis of the likely level of annual enplanements[3] and cargo activity levels. Additionally, assumptions are made about the average seating capacity of aircraft and percentage of seats filled (load factor) in estimating the number of operations needed to accommodate passengers. Increased aircraft capacity and higher projected load factors have contributed to lower operations estimates than originally forecast.

The most significant difference between the original Part 150 study and current information involves the fleet mix (types of aircraft) using the Memphis airport. After the 1987 noise maps were developed, the Congress enacted the Airport Noise and Capacity Act in 1990 to reduce aviation noise by phasing in quieter engine technology by 2000. The act requires all aircraft operators to convert their fleets from Stage 2 to Stage 3 aircraft by that year. At the time of the Part 150 study, 57 percent of jet

[3]The number of passengers boarding aircraft.

aircraft were assumed to meet Stage 3 requirements by 2000. According to an official of FAA's Memphis office, both of the two major operators at Memphis--Northwest Airlines and Federal Express--meet interim requirements for compliance and are expected to achieve full compliance by 2000.

The results of the 1987 study were also impacted by the way in which jet departures from the airport were modeled in the original study. The original study assumed 18 discrete departure paths or "tracks." According to an official from the Memphis airport authority, this assumption was too simplistic to represent actual operations and resulted in a concentration of the noise impacts around the 18 flight tracks modeled. The preliminary Part 150 update assumes 30 departure flight tracks derived from radar observations that are distributed over a wider area of land. In addition, version 5.0 of FAA's noise model, which was used to generate the noise maps for the update, has the capability to consider dispersion on each flight track. According to the consultant responsible for the update, this dispersion may be more representative of how the airport currently operates.

NOISE MONITORING

According to FAA, one method for enhancing the effectiveness of an airport's Part 150 program is to establish a permanent and continuous noise-monitoring system at the airport. While FAA has confidence in the ability of its noise model to produce accurate results for airport and noise compatibility planning, such a system could be used by airport operators to measure noise levels from actual single events. However, noise monitoring is not required by Part 150 for the development of noise exposure maps or airport noise compatibility programs.

Many of the larger airports in the country have installed noise-monitoring systems, including Los Angeles International, San Francisco International, Baltimore-Washington International, Chicago O'Hare International, and Minneapolis-St. Paul International airports. Airport noise-monitoring systems qualify for funding under the Part 150 program. However, the cost of monitoring equipment and installation starts at $700,000, with annual operating and maintenance costs of $70,000. As systems become more complex and additional equipment is added, the cost of the system could be well over $1 million, and annual operating and maintenance costs could reach $500,000.

The 1987 Part 150 study for the Memphis airport included short-term monitoring of aircraft noise at a limited number of locations. However, according to the Technology Division Manager of FAA's Office of Environment and Energy, this attempt was not sufficient to test the accuracy of the authority's noise maps, as the monitoring results are only representative of noise during the monitoring periods. As a result,

actual noise levels measured by the Part 150 study cannot be compared directly with the noise contours generated by the noise model.

THE AIRPORT AUTHORITY'S PLANS FOR ADDITIONAL NOISE MITIGATION

According to the airport authority, it is too early to tell what additional noise mitigation measures may be proposed under the Part 150 program. However, according to an airport official, future efforts are expected to focus on residential sound insulation projects. Furthermore, additional noise mitigation efforts will be heavily influenced by both the size of the noise-impacted areas resulting from the Part 150 update and the availability of federal funds.

PRELIMINARY RESULTS OF THE PART 150 UPDATE

Although the Memphis airport's Part 150 update is still ongoing, preliminary results predict less noise around the airport. This update, which is based on the latest revisions to FAA's integrated noise model, shows as much as a 7-decibel reduction in some areas of the noise contours for projected operations in the year 2000. The consultant responsible for the update attributes the differences primarily to the conversion of aircraft to Stage 3 aircraft standards. Also, a lower volume of operations than originally assumed and differences in the number and dispersion of flight tracks modeled reduce the contours.

Table II.1 shows the estimated impacts of smaller noise contours and the authority's land acquisition program for housing units exposed to aircraft noise forecast in the original Part 150 study and the update.

Table II.1: Estimated Impacts of Smaller Noise Contours

	Number of housing units exposed to noise	
Contour	1987 Part 150 study's "future" (2001-10) noise exposure map	Update's noise exposure map for the year 2000 (preliminary)
65 to 70 DNL	18,430	6,366
70 to 75 DNL	9,550	1,424
75 DNL and above	1,390	39

Note: The update's estimates assume no growth in the number of housing units within the above contours.

AVAILABILITY OF AIRPORT IMPROVEMENT PROGRAM FUNDS

A recent change involving FAA's Airport Improvement Program (AIP) could also impact the amount of federal funding that the Memphis airport could receive for its noise program in the future. For example, the Federal Aviation Reauthorization Act of 1996 changed the formula for determining the amount of AIP discretionary funds[4] to be set aside for airport noise programs. As a result, FAA's Director of Airport Planning and Programming estimates that $144 million in noise set-aside funds will be available in fiscal year 1997 compared with $181 million in fiscal year 1996. According to the Memphis airport authority, this change is expected to have a significant impact on its Part 150 program, which has been financed almost exclusively by noise set-aside funds since 1993. Beginning in 1993, all of the authority's AIP entitlements, which formerly had funded noise mitigation, were applied to construction of the airport's third runway. Because the airport authority plans to apply all future entitlements to runway improvement projects through the year 2000, it will continue to rely on noise set-asides to pay for its Part 150 program.

The airport authority's reliance on noise set-aside funds will affect its ability to finance future noise mitigation projects. Historically, the Memphis airport authority has received from $2 million to $10 million annually in noise set-aside funds for residential noise mitigation. However, in fiscal year 1996, FAA placed an annual limit on the amount of such set-aside funds that an airport could receive—$5 million for residential noise mitigation efforts and $3 million for the soundproofing of schools. According to the Director of Airport Planning and Programming, this change permits FAA to distribute funds to more airports. The Director said that FAA is considering lowering these ceilings even further because set-asides for noise programs have been reduced in fiscal year 1997. A decision on this matter is expected this month.

Faced with runway projects that consume all of its entitlements and annual funding limits of $5 million or lower, the authority may have difficulty mitigating noise for residents outside the 75-DNL noise contour. For example, on the basis of the preliminary results of the Part 150 update, the airport authority estimates that it will

[4]FAA's discretionary grants fund projects that address goals established by the Congress, such as enhancing capacity, safety, and security or mitigating noise at all types of airports. Set-asides are specific categories established by the Congress and used to direct specified amounts of funding to certain projects, such as noise abatement, or to certain types of airports. Entitlements are formula grants awarded to primary and cargo airports on the basis of passenger boardings or cargo weight and to states for use at general aviation airports on the basis of the population and size of the state.

cost approximately $234 million to soundproof 7,790 homes within the 65- to 75-DNL contours. With a maximum of $5 million a year in AIP noise set-aside funding, it could take many years to soundproof all eligible homes.

AIRPORT AUTHORITY'S COMPLIANCE WITH FAA'S GUIDELINES FOR AIP-FUNDED RESIDENTIAL ACQUISITIONS, RELOCATION ASSISTANCE, AND THE APPEALS PROCESS

RESIDENTIAL ACQUISITIONS AND RELOCATION ASSISTANCE BENEFITS

In 1992, the Department of Transportation Inspector General found that the airport authority's acquisition program complied with FAA's guidance. FAA Order 5100.37A directs that fair market value for a noise-impacted property be supported by comparable sales that are similar to the property being appraised. If comparable sales cannot be found in a similarly impacted neighborhood, the appraiser can select comparable sales outside the noise contours but must make adjustments to reflect the actual market value as affected by noise.

According to the Inspector General, the airport authority adequately supported the fair market values paid for acquired properties, in accordance with FAA's guidelines. This finding was based on a statistical sample of properties being acquired and a review of the airport authority's internal controls for its appraisal and review functions. The Inspector General noted several deficiencies, however, in the documentation of appraisals. For example, the appraisals did not always include all of the information required by FAA's guidelines, such as a 5-year sales history, or fully explain adjustments made to the comparable sales. The report indicated, however, that these deficiencies did not materially impact the fair market value assessments on the parcels reviewed. According to the airport authority and the Inspector General's Office, these deficiencies have since been corrected.

With respect to relocation assistance, the Inspector General determined that replacement housing benefits paid to homeowners in 10 of the 13 cases sampled were excessive by $2,400 to $10,000 per payment because they were based on superior replacement dwellings. FAA's guidelines require that replacement housing benefits be calculated by (1) subtracting the acquisition cost of the acquired dwelling from the cost of a comparable replacement dwelling and (2) including the difference in interest payments and reasonable expenses incurred to purchase the replacement dwelling. A dwelling chosen as comparable cannot be located within the airport's 65-DNL noise contour.

The airport authority did not agree with the Inspector General's finding and provided information that it believed demonstrated that the dwellings selected to compute the 10 cited payments accurately met the definition and minimum requirements for comparable replacement dwellings provided in FAA's guidance. However, the authority agreed to improve documentation of its market research for

the selection of comparable replacement dwellings. We found that the airport authority had developed an evaluation form that better documents and supports its selection of comparable replacement dwellings.

APPEALS PROCESS

Our review showed that the airport authority's appeals process was in compliance with FAA's guidance. FAA's guidance provides that displaced persons have at least 60 days to file a written appeal for reconsideration of the benefits offered. Displaced persons shall be furnished a written notice of their right to appeal and of the airport authority's procedures for hearing such an appeal. FAA's guidance recommends that an appeal be handled by the airport authority through a two-level process. FAA does not have a role in the appeals process.

We found that the airport authority provides the written notifications required by FAA. For example, prior to acquiring a residence, the authority provides the homeowner with a written notice of its appeals process and the procedures for filing an appeal. When the airport authority's written acquisition and replacement housing offer is made, the homeowner is provided an application for filing an appeal and informed that, should he or she be dissatisfied with the offer, an appeal must be filed within 60 days. Our review also showed that, in accordance with FAA's guidance, the authority used a two-level appeals process. In the first level of the appeal, a state-licensed independent appraiser not associated with the original appraisal renders a decision on the appeal. If the appellant is not satisfied with the finding of the first-level appeal, he or she may make a second-level appeal to the airport authority's appeals board, made up of two real estate brokers and another independent real estate appraiser.

AIRPORT AUTHORITY'S COMPLIANCE WITH AIP GRANT ASSURANCES FOR LAND DISPOSAL

An AIP grant assurance, which implements requirements of the Airport and Airway Improvement Act of 1982, requires that the airport authority dispose of acquired land at the earliest practicable time. Furthermore, at FAA's discretion, the federal share of revenues–80 percent for Memphis airport–from the sale of land originally acquired for noise mitigation can be reinvested in other eligible noise projects. However, according to the Director of Airport Planning and Programming, the agency has never defined "earliest practicable time" for the airports. He indicated that it has proved to be a difficult and lengthy process for airports to accumulate sizable tracts of contiguous land, remove people and structures, market the property, and resell it for compatible uses. For these reasons, FAA has worked with individual airport sponsors on land disposal issues, but has not provided a further national delineation of when the "earliest practicable time" occurs.

The Memphis airport has not yet sold any parcels of land that it has acquired under the Part 150 program. According to airport officials, the delay is partially caused by grant assurances that impose land-use restrictions. Specifically, AIP grant assurances require that the airport authority take appropriate action, including seeking the adoption of zoning laws, to restrict the use of land in the immediate vicinity of the airport to purposes compatible with normal airport operations. In complying with these requirements, the airport authority has experienced difficulties in assembling small residential lots into larger and more marketable parcels of land because some residents have opted to remain in the buyout areas.

Also, on the basis of a 1991 regional land-use study, the airport authority is working with the city of Memphis and surrounding counties to rezone the buyout areas before selling land parcels. The study recommends that the buyout areas be rezoned and identifies two new types of land use for the buyout areas, requiring changes in local zoning ordinances. The airport authority's choice of actions in complying with AIP grant assurances has made the airport an active participant in a very lengthy land development process. Currently, the airport authority is reconsidering its approach to the buyout areas' redevelopment and is planning to engage a consultant to prepare a marketing analysis of the resale of property in Tennessee. The authority is also preparing to sell some land parcels in the Point Regency Lakeside Homes area to the city of Southhaven, Mississippi, which would have to agree to rezone the land for nonresidential use.

According to FAA officials, the airport is not required to rezone land in the buyout areas and can pursue other approaches, such as transferring land management responsibility to other units of the local government or extending binding agreements

to the sale of the property. For example, the authority of the Hartsfield-Atlanta International Airport has disposed of land purchased under its noise compatibility program by working in partnership with the surrounding cities and counties. The Atlanta airport authority complied with its AIP grant assurances by entering into binding agreements with the purchasers that the land would be rezoned for uses compatible with airport operations.

ADDITIONAL INFORMATION REQUESTED

We were asked to identify (1) the federal agency with oversight responsibility for environmental concerns with aircraft emissions, (2) sources of funding for the development of Swinnea Road to the east of the airport, and (3) FAA's statutory responsibilities for reviewing noise maps.

FEDERAL OVERSIGHT RESPONSIBILITY FOR ENVIRONMENTAL IMPACTS OF AIRCRAFT EMISSIONS

Under the Clean Air Act, the Administrator for the Environmental Protection Agency (EPA) is required to issue "from time to time" proposed emissions standards for any air pollutant from any class of aircraft engines, which in the agency's judgment may reasonably endanger public health and welfare (42 U.S.C. § 7571). In 40 C.F.R. Part 87, EPA established standards for controlling air pollution from aircraft and aircraft engines. EPA's regulations also include test procedures for engine exhaust emissions and engine smoke emissions.

The Clean Air Act also gives the Secretary of Transportation (through FAA) the responsibility for enforcing the emissions standards set forth by EPA. FAA is directed to prescribe regulations, after consultation with EPA, to ensure compliance under § 7571. The Secretary of Transportation is required to ensure that all the necessary inspections to carry out these regulations are accomplished. FAA has promulgated regulations that basically incorporate EPA's standards under 14 C.F.R. § 34.

While regulatory authority over the emissions from individual aircraft is clearly addressed in the Clean Air Act, and EPA is clearly given responsibility for regulating air pollution overall, the act does not explicitly address how the effects of aircraft emissions on the environment should be dealt with as a whole. Moreover, regulations controlling aircraft may be disapproved by the Secretary of Transportation if such regulations would create a hazard to aircraft safety.[5]

Furthermore, it is unlikely that local authorities, such as the airport authority, would be able to exercise authority over the issue because state and local authorities are preempted by the federal government from exercising any regulatory control over aircraft emissions; 42 U.S.C. § 7573 contains a specific prohibition on states' or political subdivisions' adopting or attempting to enforce any standards respecting emissions from any aircraft. In addition, a Supreme Court case, Washington v.

[5]42 U.S.C. § 7571(c).

General Motors Corp., 406 U.S. 109 (1971), held that ". . . Congress has pre-empted the field so far as emissions from airplanes are concerned."

SOURCES OF FUNDING FOR DEVELOPMENT OF SWINNEA ROAD

The relocation and widening of Swinnea Road to the east of the Memphis airport cost approximately $5.1 million. The project was financed primarily by the city of Memphis, which contributed $4.3 million. The remaining $0.8 million was paid by the airport authority through a bond issue and revenues from passenger facility charges. The road, which was relocated because of the construction of a third runway, will provide better access to a planned aviation facility, including maintenance hangars for Federal Express.

FAA'S STATUTORY RESPONSIBILITIES FOR REVIEWING NOISE MAPS

Title I of the Aviation Safety and Noise Abatement Act (Pub. L. 96-193) outlines the requirements for the submission of noise exposure maps. The act requires that noise maps comply with Part 150 and be prepared in consultation with public agencies and planning authorities in the area surrounding an airport. However, the act does not specify an oversight role for FAA beyond verifying that the maps satisfy the criteria outlined in Part 150.

FAA maintains that its responsibility is limited to determining that airports' operational data, such as their forecasts of aircraft operations and runway use, are reasonable and that noise maps comply with the Part 150 requirements. FAA does not rerun the noise model to ensure the accuracy of the noise contours. FAA also relies on the certification by the airport operator that the statutorily required consultation has been accomplished. Furthermore, FAA asserts that its determination does not constitute approval of the applicant's data, information, or plans or a commitment to approve a noise compatibility program or to fund the implementation of that program. According to the Director of the Office of Airport Planning and Programming, FAA's position is based on a reading of the statute that makes the airport operator, and not FAA, responsible for the preparation of noise exposure maps, and the lack of a demonstrable problem with noise contours over the last 15 years of the Part 150 program.

ENCLOSURE VI

ENCLOSURE VI

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Penalty for Private Use $300

Address Correction Requested