
LINCOLN AIRPORT



F.A.R. Part 150 Noise Compatibility Study

Executive Summary

ABOUT THE AIRPORT

The Lincoln Airport is located in the northwest corner of Lincoln, Nebraska, approximately five miles from the central business district. To the south, the airport is bordered by Interstate 80. Northeast portions of the airport are bordered by a golf course and commercial uses while northern portions of the airport are bounded by U.S. Route 34 and agricultural uses. West of the airport is a mixture of residential and industrial uses.

Operation of the airport is overseen by the Lincoln Airport Authority which was created on February 16, 1959 under the authority of Article 5 of Chapter 3 of the Revised Statutes of Nebraska. Five residents of the city were appointed to the Authority by the Mayor and confirmed by the City Council on that date. Although, the Authority board members were originally appointed, today they are elected by the citizens of Lincoln. Day-to-day operation of the airport is charged to an Executive Airport Director who is hired by the board.



WHAT IS A NOISE COMPATIBILITY PROGRAM?

A Noise Compatibility Program is intended to promote aircraft noise control and land use compatibility. Three things make such a study unique: (1) it is the only comprehensive approach to preventing and reducing airport and community land use conflicts; (2) eligible items in the approved program may be funded from a special

account in the Federal Airport Improvement Program; (3) it is the only kind of airport study funded by the Federal Aviation Administration (FAA) primarily for the benefit of airport neighbors.

The principal objectives of any Noise Compatibility Program are to:

- Identify the current and projected aircraft noise levels and their impact on the airport environs.
- Propose ways to reduce the impact of aircraft noise through changes in aircraft operations or airport facilities.
- In undeveloped areas where aircraft noise is projected to remain, encourage future land uses which are compatible with the noise, such as agriculture, commercial or industrial.
- In existing residential areas which are expected to remain impacted by noise, determine ways of reducing the adverse impacts of noise.
- Establish procedures for implementing, reviewing, and updating the program.

PROGRAM PREPARATION

The Noise Compatibility Program for the Lincoln Airport was developed through a consultative process which included considerable technical analysis. The Airport Authority hired the airport consulting firm of Coffman Associates to provide technical expertise for the study.

A Planning Advisory Committee was established at the onset of the Part 150 Study to act as an informal advisory group to review and comment on the consultant's findings and recommendations. That committee included representatives of the FAA, local government, airport users, and local citizen's groups.

Local residents were invited to several public information workshops and a public hearing during the preparation of the study. The Airport Authority formally accepted the Noise Compatibility Program on September 25, 2003 and authorized its submittal to the FAA for review and approval.

THE NOISE COMPATIBILITY PROGRAM

The Noise Compatibility Program for the Lincoln Airport includes three plan program elements: (1) a noise abatement element involving aircraft operating procedures; (2) a land use management element involving proposed changes to various local regulatory tools; and (3) a program management element to administer, monitor, and update the program.

NOISE ABATEMENT ELEMENT

Many noise abatement alternatives were evaluated in the study including changes in flight tracks, runway use, and aircraft operating procedures. These were evaluated for their effect on airspace, safety, cost, and potential for noise reduction. The final plan includes five noise abatement measures.

1. Continuation of the Airports existing engine maintenance run-up noise abatement procedures. The airports current run-up policy, enacted in March 2002, requires that aircraft maintenance activity which occurs between the hours of 7:00 p.m. to 7:00 a.m. occur on the run-up pad located on Taxiway E between Runway 18-36 and the west apron. Engine run-ups

conducted from 7:00 a.m. to 7:00 p.m. are allowed on the G.A. apron on the east side of the airport. (See exhibit below.)

Should engine run-up activity become an issue in the future, consideration could be given to moving all run-ups to the west side run-up pad. Until that time, it would be beneficial if maintenance operators would continue to keep detailed logs recording pertinent details of run-up activity. This will help in investigating complaints regarding engine maintenance run-ups and analyzing the success of the current run-up policy. Additional measures that could be undertaken to reinforce the existing run-up policies include pavement marking and signage which would communicate appropriate aircraft run-up locations to aircraft maintenance personnel.

2. Continuation of existing military aircraft training procedures and publication of these procedures within the Department of Defense's flight information publication AP/1, Area Planning - North and South America, as well as the IFR Supplement. Informal aircraft training procedures have been established for local military aircraft as well as aircraft from Offutt Air Force Base (AFB). It is recommended that these procedures be continued.

RUN-UP LOCATIONS



Additionally, the military utilizes the AP/1 and the IFR Supplement for publishing approach and departure procedures at various airports across the United States. It would be beneficial if those procedures utilized by Offutt AFB and Nebraska Air National Guard pilots were published in these publications. This would allow transient military pilots to minimize the impact of their training on surrounding neighborhoods.

- 3. Encourage the use of Advisory Circular 91-53A, Noise Abatement Departure Procedures for Large Jets.** The Airport Authority should encourage large jet (greater than 75,000 pounds) operators to use the procedures outlined within Advisory Circular (AC) 91-53A. This AC provides for two standard thrust cut-back procedures. One focuses on noise abatement near the airport (the close-in procedure), while the other abates noise further away from the airport (the distant procedure). The intent of the AC is to provide guidelines for aircraft operators to establish safe and effective procedures that are used at all airports across the country.
- 4. Encourage use of NBAA Noise Abatement Procedures.** The Airport Authority should encourage business jet operators to use the National Business Aviation Association (NBAA) Approach and Landing Procedure and Standard Noise Abatement Departure Procedures, or equivalent quiet-flying procedures developed by aircraft manufacturers. The NBAA standard departure procedure involves the management of thrust, flap settings, speed, and climb rate to reduce noise quickly after takeoff.

The NBAA has also published noise abatement approach procedures for jet aircraft. These include using minimum approach flap settings, maintaining minimum speed, and minimizing the use of reverse thrust after landing, consistent with safety.

- 5. Encourage use of AOPA Noise Awareness Steps by light single and twin-engine aircraft.** The Aircraft Owners and Pilots Association (AOPA) encourages quiet and neighborly flying by distributing generalized noise abatement procedures for use by propeller aircraft. These “Noise Awareness Steps” have recommendations on how to fly the aircraft, as well as where to fly. Most of the steps provide guidance on pilot technique when maneuvering near noise-sensitive areas. The steps also encourage cooperation with the airport staff on noise abatement issues.

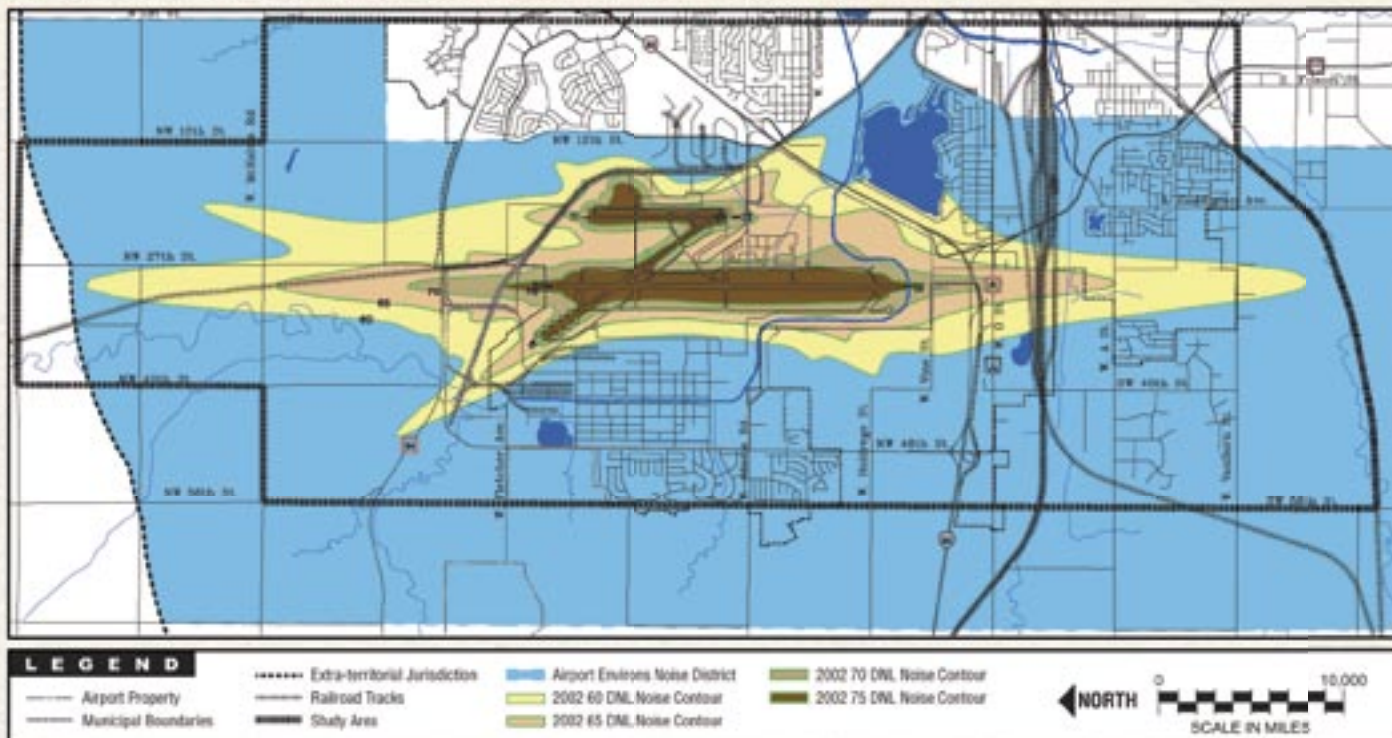
LAND USE MANAGEMENT ELEMENT

The land use management element encourages compatible development in noise affected areas of Lincoln and Lancaster County. The following land use measures are recommended in the Noise Compatibility Program.

- 1. Change the boundaries of the Airport Environs Noise District to encompass developing areas which receive military training overflight activity.** Consideration should be given to expanding the existing boundaries of the Airport Environs Noise District to the west to capture the areas impacted by touch-and-go activity west of the airport.



Recommended Revised Airport Environs Noise District Boundaries



2. Update the City/County Comprehensive Plan to reflect the Airport Environs Noise District boundary. Within the City of Lincoln and Lancaster County's comprehensive plan, reference is made to the city's Airport Environs Noise District and Airport Zoning Regulations. Consideration should be given to incorporating an exhibit depicting the boundaries of the various districts into the plan. Many individuals utilize comprehensive or general plans when considering the purchase of property. Incorporating an exhibit depicting the areas impacted by airport operations into the Comprehensive Plan would allow for further fair disclosure of the impact of the airport on its environs.

3. Update the City/County Comprehensive Plan to reflect the 2002 noise contours prepared as part of this F.A.R. Part 150 Study. Within the City of Lincoln and Lancaster County's comprehensive plan, consideration should be given to incorporating an exhibit depicting the boundaries of the noise contours prepared as part of this F.A.R. Part 150 Study. The 2002 60, 65, 70, and 75 DNL noise contours would be appropriate for adoption as they represent the largest noise exposure contours.

4. Modify the existing Airport Environs Noise District ordinance to reflect the 2002 noise contours and incorporate the 60 DNL noise contour into the regulations. Based on the military training activity which occurs at the airport, as well as the size and shape of the new noise contours for the airport, consideration should be given to modifying the regulations contained within the Airport Environs Noise District. These changes primarily relate to the district boundary and the uses allowed within the various noise contours. The boundaries are depicted on the exhibit above.

The 65 DNL noise contour prepared as part of the 1980 Airport Noise Control and Land Use Compatibility study (ANCLUC), is very similar in shape to the 2002 60 DNL noise contour (the most recently updated contours). During the preparation of



2002 Noise Exposure Contour with Land Use



2007 Noise Exposure Contour with Land Use



the ANCLUC, the 60 DNL noise contour was recommended to be incorporated into the land use regulations for the City and County. However, due to the large size of the 60 DNL noise contour at the time and the amount of land contained within the contour, it was determined that land use regulation within the 60 DNL noise contour was not feasible. Changes in the fleet mix utilizing the airport and a decrease in the noise levels produced by the airport, however, make it reasonable to now regulate land uses within the 60 DNL noise contour.

Due to the similarity in shape of the previously prepared 65 DNL noise contour and the 2002 60 DNL noise contour, it is recommended that the 60 DNL noise contour be incorporated into the Airport Environs Noise District. This change to the regulations would have a minimal effect on land uses as the area is currently regulated by the land use regulations. The recommended change to the regulations would ensure that noise-sensitive dwellings are sound-insulated to minimize the impact of aircraft operations on residents. Residential development could be allowed to

occur within the 60 DNL noise contour; however, a requirement for the incorporation of sound attenuation standards into the design and construction could be incorporated.

It is also recommended that the land uses allowed within the 2002 65 DNL noise contour be modified to not allow the development of noise-sensitive development within this contour. The FAA strongly discourages the construction of noise-sensitive developments within the 65 DNL noise contour. The construction of residences, schools, churches, and libraries should not be allowed within the 65 DNL noise contour.

The current requirements of development within the 70 and 75 DNL noise contours should remain as currently stated within the Airport Environs Noise District.

- 5. Incorporate into the Airport Environs Noise District ordinance airport land use compatibility guidelines for review of development projects within the noise district.** This policy is proposed to apply throughout the Airport Environs Noise District. The adoption of special project review criteria, specifically addressing airport land use compatibility needs, would provide guidance to land use decision-makers as they review project proposals.
- 6. Maintain compatibly-zoned areas within the 2002 60 DNL noise contour when possible.** The majority of the area contained within the 2002 60 DNL noise contour is currently zoned for compatible land uses. When possible, the areas that are zoned for compatible use should be maintained.

PROGRAM MANAGEMENT ELEMENT

The success of the Noise Compatibility Program requires a continuing effort to monitor compliance and identify new or unanticipated problems and changing conditions. Four program management measures are recommended.



- 1. Establish a Geographic Information System (GIS) for receiving, analyzing, and responding to noise complaints; publishing the prepared noise contours; and community outreach.** The airport currently has a system of recording and responding to noise complaints, as well as pro-active community outreach efforts. In addition to recording and filing complaints, it is important for airport management to respond to complaints, even if it is not possible to take remedial action. As part of this effort, it is recommended that the Airport Authority update the current noise complaint monitoring system. The Airport Authority should develop a computerized GIS system to map the noise complaints to better identify geographic patterns and trends that emerge which may deserve special attention.
- 2. Prepare military and civilian pilot guides to make transient pilots aware of the noise abatement procedures which have been established for military training activities.** Pilot guides describing civilian and military airport noise abatement information should be prepared for wide distribution to pilots using Lincoln Airport. The guide should include an aerial photo showing the airport and the surrounding area, pointing out noise-sensitive land uses, and preferred noise abatement procedures. It could also include other information about the airport that pilots would find useful. The guide should be suitable for insertion into a Jeppesen manual so that pilots will be able to conveniently use it.

3. Review Noise Compatibility Program implementation. Airport management must monitor compliance with the Noise Abatement Element. This will involve checking periodically with airport users and the local FAA Air Traffic Control Tower Manager regarding compliance with the informal military and civilian procedures. Additionally, the run-up policy and noise complaint information should be reviewed periodically to evaluate the success of the program. It may be necessary from time to time to arrange for noise monitoring, noise modeling, or flight track analysis to study issues that may arise in the future.

4. Update Noise Exposure Maps and Noise Compatibility Program. Airport management should review the Noise Compatibility Program (NCP) and consider revisions and refinements as necessary. A complete plan update will be needed periodically to respond to changing conditions in the local area and in the aviation industry. This can be anticipated every five to ten years. An update may be needed sooner, however, if major changes occur. An update may not be needed until later if

conditions at the airport and in the surrounding area remain stable or do not change as anticipated in the Plan. The 2002 and 2007 noise contours are depicted on the previous page.

A CONTINUING COMMITMENT

The Lincoln Airport Authority is committed to promoting the airport as a vital link to the nation's air transportation system for the benefit of the local economy and local citizens. At the same time, noise compatibility remains a high priority and the Airport Authority will continue reviewing the Noise Compatibility Program to ensure it is fully implemented and to look for ways to improve it.

The Airport Authority welcomes local interest in the airport and in our noise compatibility efforts. Let us know how we are doing. Airport management is available to meet with local service organizations and citizens to discuss your concerns and interests. If you have any questions about the airport, call (402) 458-2400 during normal business hours.

FOR MORE INFORMATION, PLEASE CONTACT:

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was conducted by:*

