

Part 150: Records of Approval

The Philadelphia International Airport, Philadelphia Pennsylvania

Approved on 5/19/03

The Philadelphia International Airport, Philadelphia Pennsylvania, Noise compatibility Program (NCP) describes the current and future noncompatible land uses based upon the parameters established in Federal Aviation Regulation (FAR) part 150, *Airport Noise Compatibility Planning*.

The program recommends a total of eighteen measures to prevent the introduction of additional noncompatible land uses and to reduce existing noncompatible land uses. The recommendations include seven noise abatement measures, five land use measures, and six program management measures. The recommended program measures are summarized on Pages 4-2 through 4-32, Exhibits 4-1 through 4-5, and Tables 4-1 through 4-3 of the NCP. The measures are summarized in Table 4-1 on pages 4-2 through 4-6.

The approvals listed herein include approvals of actions that the airport recommends be taken by the Federal Aviation Administration. It should be noted that these approvals indicate only that the actions would, if implemented, be consistent with the purposes of Part 150. These approvals do not constitute decisions to implement the actions. Later decisions concerning possible implementation of these actions may be subject to applicable environmental or other procedures or requirements.

The noise compatibility program recommendations below summarize as closely as possible the airport operator's recommendations in the noise compatibility program and are cross-referenced to the program. The statements contained within the summarized noise compatibility program recommendations and before the indicated FAA approval, disapproval, or other determination do not represent the opinions or decisions of the FAA.

NOISE ABATEMENT

NA 1: Aircraft weighing 12,500 pounds or more departing Runways 9L/9R/17/35/8 fly runway heading until reaching 2,000' Above Ground Level.

Description: This measure is a part of the existing condition. On departure to the east, north, or south, aircraft weighing more than 12,500 pounds normally fly along the runway heading until reaching altitudes 2000 feet above the ground. Turns are typically initiated over the Delaware River after the aircraft has reached the procedural altitude. Under conditions of adverse weather, or for reasons of safety and/or operating efficiency, deviations from this procedure may occur. Modifications are not justified by Part 150 findings, and hence are not suggested at this time. The concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project (the Project), in general, may be considering modifications to noise abatement measures at some of the Project airports in its five-state study area. However, at this time, no specific modification to noise abatement measures are planned in the Project for PHL. (See Page 4-7 and Exhibit 4-1 as well as page E-2 and Exhibit E-1)

FAA Action: Approved as voluntary and as an existing condition. This measure results in the maintenance of a departure course from Runways 8,9R, and 9L over areas of compatible land use and maintains a predictable departure corridor from Runways 17 and 35 over areas of

scattered land use beyond the extent of the 65 DNL contour. This procedure may be subject to refinement based on findings of the FAA's New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project in the future.

NA 2: Aircraft weighing 12,500 pounds or more departing Runway 27L turn left to a 255 degree heading until reaching 3,000' Above Ground Level.

Description: This measure is a part of the existing condition. On departure to the west from Runway 27L, aircraft weighing more than 12,500 pounds turn left to a heading of 255 degrees and fly along the that heading until reaching altitudes 3000 feet above the ground. Turns from the 255 heading are typically initiated over the Delaware River after the aircraft has reached the procedural altitude. Under conditions of adverse weather, or for reasons of safety and/or operating efficiency, deviations from this procedure may occur. Modifications are not justified by Part 150 findings, and hence are not suggested at this time. The concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project (the Project), in general, may be considering modifications to noise abatement measures at some of the Project airports in its five-state study area. However, at this time, no specific modification to noise abatement measures are planned in the Project for PHL. (See page 4-8 and Exhibit 4-1 as well as page E-3 and Exhibit E-1)

FAA Action: Approved as voluntary and as an existing condition. The measure results in the maintenance of a compatible departure course from Runway 27L over the Delaware River until the aircraft has passed beyond the extent of the 65 DNL contour. This procedure may be subject to refinement based on findings of the FAA's New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project in the future.

NA 3: Aircraft weighing 12,500 pounds or more departing Runway 27R turn left to a 240 degree heading until reaching 3 DME, thence turn right to a 255 degree heading until reaching 3,000' Above Ground Level.

Description: This measure is a part of the existing condition. On departure to the west from Runway 27R, aircraft weighing more than 12,500 pounds turn to a heading of 240 degrees and fly that heading until reaching a position 3 nautical miles from the Instrument Landing System (ILS). The aircraft then turn right to a heading of 255 degrees and fly that heading until reaching altitudes 3000 feet above the ground. Turns from the 255-degree heading are typically initiated over the Delaware River after the aircraft has reached the procedural altitude. Under conditions of adverse weather, or for reasons of safety and/or operating efficiency, deviations from this procedure may occur. Modifications are not justified by Part 150 findings, and hence are not suggested at this time. The concurrent New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project (the Project), in general, may be considering modifications to noise abatement measures at some of the Project airports in its five-state study area. However, at this time, no specific modification to noise abatement measures are planned in the Project for PHL. (See page 4-9 and Exhibit 4-1 as well as page E-4 and Exhibits C-6 and E-1)

FAA Action: Approved as voluntary and as an existing condition. The measure results in the frequent use of a compatible departure course from Runway 27R over the Delaware River until the aircraft has passed beyond the extent of the 65 DNL contour. This procedure may be subject to refinement based on findings of the FAA's New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project in the future.

NA 4: Continue existing nighttime runway use program from midnight to 6:00 a.m.

Description: This measure is a part of the existing condition. When winds and operating conditions permit, the following preference is in effect: between midnight and 6:00 a.m., in east

traffic flow, takeoffs are made from Runways 9R and 9L, landings are made on Runway 9R. During west flow, takeoffs are made on Runway 27L and landings are made on Runways 27R and 27L. When the crosswind runway is used, landings are made on Runway 35 and takeoffs are made on Runway 17. This preference is not applied when winds are from the east or when one or more of the runways is closed. (See Page 4-4 and Exhibit 4-2 as well as page E-7 and exhibit E-2)

FAA ACTION: Approved as voluntary and as an existing condition. This measure would result in the maintenance of compatible departure and approach courses over the Delaware River or over areas of generally compatible land use south of the airport within the extents of the 65 DNL contour.

NA 5: Continue existing run-up procedures providing for location and orientation preferences with requirements for pre-approval and limitation to 20 minutes or less.

Description: This measure is a part of the existing condition. Engine run-ups are currently restricted to two locations on the airport – at the intersection of Taxiway K with Taxiway H (preferred location) with the aircraft facing east, and at the intersection of Taxiway P with Taxiway W, with the aircraft facing west. Engine run-ups require prior approval by Airport Operations and are limited to twenty (20) minutes duration. Between 11:00 p.m. and 6:00 a.m., run-ups are restricted unless failure to conduct the run-up will delay the departure of a scheduled flight. In addition, these run-ups are to be conducted at the preferred east location. (See page 4-13 and Exhibit 4-3 as well as page E-11 and Exhibit E-3)

FAA Action: Approved as voluntary and as an existing condition. The run-up areas provide centrally located sites that would minimize the noise impact of run-ups as much as possible without building a barrier or berm.

NA-6: Support creation of Area Navigation (RNAV) overlay procedures for selected existing and future flight procedures.

Description: The New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project is examining the possibility of creating RNAV overlays for selected instrument approach procedures in the region. RNAV procedures utilize ground based (DGPS), satellite based (GPS), and on-board (FMS/GPS) equipment to assist the pilot in navigating from point to point. These procedures normally provide for greater accuracy and tighter flight corridors than traditional flights using controller-assigned or procedural headings (vectors). Some older aircraft are not equipped with the technology to use RNAV procedures and would continue to use traditional techniques. It is the FAA's intent that the airspace environment in the region ultimately become entirely RNAV, so aircraft will continue to be modified to use the technology and new aircraft will be so equipped. This measure does not require specific implementing action by the Airport, but rather the Airport should support the development of such procedures by the FAA for the regional airspace system. (See page 4-15 and E-45)

FAA Action: No action required. The airport sponsor is supporting development of RNAV overlay procedures, which is being considered as part of the FAA's New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project.

NA 7: Encourage noise attenuating standards in airport development.

Description: As the development envisioned by the Master Plan is accomplished, the Airport should consider the benefits associated with the placement of structures relative to the surrounding land uses. Where practicable, the design of such facilities should be made to place unbroken lineal blocks between sources of ground noise and noise-sensitive uses in surrounding

neighborhoods. Such blocks may take the form of walls or barriers, of building footprints that are staggered with adjacent footprints, landscaping, roadway design, etc., all of which can be interruptions to the flow of aircraft ground noise between its source and receiver sites nearby. The development of facilities that use appropriate design standards that block the flow of ground noise may result in reductions of 8 to 10 decibels between the source and receiver depending upon design and location. (See page 4- 16 and E-53)

FAA Action: Approved for purposes of part 150. Final placement of structures is subject to Airport Layout Plan Approval and part 77 analysis. The measure is intended to reduce intrusive ground noise events from aircraft that are on the ramp, taxiing, in ground roll before or after flight, or while being run up or otherwise being serviced. Plans for airport development should be evaluated for their potential to reduce ground noise throughout the planning process to assure design standards are maintained.

LAND USE

LU 1: Develop and implement a residential sound insulation program.

Description:

- Offer sound insulation to all single-family owner occupied residential homes located within or immediately adjacent to the 65 DNL and higher levels of the 2006 Noise Compatibility Plan (NCP) noise contour. Sound insulation should be accomplished on a most impacted basis, where homes in the highest noise levels are insulated first. To accomplish this, two Options have been identified that would provide sound insulation to homes located in Tinicum Township as described below.

- **Option LU-1A** as displayed in Exhibit 4-4, defines the boundaries for the initial sound insulation program. This option would be defined by “squaring off” of neighborhood blocks that are included within, adjacent to or intersected by the 2006 NCP 65 DNL noise contour, thereby maintaining block continuity. The area identified in Lester has the railroad track as a natural boundary and includes 101 homes. The area in Essington does not have such a clear “natural” boundary; therefore 180 homes located 1) south of 3rd St., on Putcon, Erickson, Jansen, Bartram, Saude and on the east side of Carre; and 2) south of 2nd St., on La Grange Ave., would be included.

- Should additional federal funding be made available, **Option LU-1B** as displayed in Exhibit 4-4, would include an additional 164 homes and is the preferred program boundary. All homes south of the railroad tracks and east of Wannamaker Avenue would be included under this scenario. Extending the area of eligibility from the 65 DNL contour to this natural boundary would ensure continuity throughout the community.

- Avigation easements will be attached to the property deed as a requirement to participate in this program.

(See page 4-17, 18 and Exhibit 4-4 also see page F-2, 3 and Exhibit C-6 and C-7)

FAA Action: Approved. Conditions of Chapter 8 of 5100.38B Airport Improvement Handbook (or subsequent versions thereof) must be met, including those governing Noise Compatibility Projects and Interior Noise Level Reduction (NLR), section 812.b.

LU-2: Develop and implement a purchase and resale program as a supplement to the residential sound insulation program (LU-1).

Description:

- A purchase and resale program would be offered to supplement Measure LU-1, Residential Sound Insulation Program, for those eligible homes that do not qualify for the sound insulation program. For example, if a home did not meet local building codes required to qualify for sound insulation, the homeowner would have the option to sell the property to the Airport.
- Under this program the Airport would purchase an eligible home at fair market value and attempt to resell the home to a new owner. The home may be sound insulated and/or upgraded prior to resale and would have an avigation easement attached to the property deed.
- Provides an option for eligible residents who may not qualify for the sound insulation program.
- Properties would have an avigation easement attached, which would guarantee the right of flight over them.

FAA Action: Approved. Conditions of Chapter 8 of 5100.38B Airport Improvement Handbook (or subsequent versions thereof) must be met to be eligible for Federal financial assistance.

LU-3: Develop and implement a land use controls program.

Description: Encourage local municipalities, such as Tinicum Township and the City of Philadelphia, to implement various Land Use Controls, such as re-zoning, and disclosure, for areas within and adjacent to the 2006 NCP/NEM DNL 65 dB noise contour. Although it is not expected that re-zoning will be required, it was still considered for the land use mitigation program as a method to prevent future incompatibilities. This re-zoning measure will be implemented when necessary to maintain land-use compatibility in the Tinicum Township area. It is not expected that the City of Philadelphia would need to exercise the re-zoning measure. The main focus of this measure is intended to be a mandatory disclosure to buyers and developers that a property is located within a noise impact zone. The requirement for new development to consider the noise zones and to build in sound attenuating features as a means to prevent incompatibilities is another important focus. Both of these measures are discussed further under Implementation Steps, Costs and Phasing. (See page 4-21 and 22 and Appendix F)

FAA Action: Approved. Tinicum Township enacted zoning ordinance Nos. 2000-738 and 2001-747 to address this measure. The City of Philadelphia also has certain land use compatibility commitments outlined in its grant agreements with the Federal government to "...take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations...."

LU-4: Develop and implement a land use development controls program.

Description: Encourage local municipalities, such as Tinicum Township and the City of Philadelphia, to amend their building codes to require any new construction and major alteration/addition within or adjacent to the DNL 65 dB NCP noise contour to meet an interior Noise Reduction Level (NRL) standard of 45 dB.

- Prevents new incompatible development.
- Ensures that any new construction or alteration will utilize materials that will minimize noise exposure on the interior of a structure. (See page 4-23 and Appendix F)

FAA Action: Disapproved for purposes of Part 150. New construction within the DNL 65 dB noise contour is considered incompatible with normal airport operations and is inconsistent with the purposes of Part 150 to reduce or prevent incompatible land uses. The FAA recognizes that inclusion of sound attenuation in newly constructed or altered noise-sensitive structures will provide interior compatibility. This is a local land use decision. However, the FAA will not participate in remedial mitigation measures for new noise-sensitive development that occurs after October 1, 1998.

LU-5: Prepare a Study to Determine Feasibility of Implementing Noise Mitigation Measures at Historic Fort Mifflin

Description:

- Historic Fort Mifflin, a National Historic Landmark, is located within the limits of the City of Philadelphia, just East of Philadelphia International Airport. It is further located within the 70 DNL level of the 2006 Noise Compatibility Plan (NCP) noise contour, with some portions falling within the 75 DNL. According to Appendix A of FAR Part 150, (Part B Sec. A150.101, (e) (6)) the location of properties on or eligible for inclusion in the National Register of Historic Places must be identified on the Noise Exposure Maps. In addition, Sec A150.101 (c) indicates that if there are other uses with greater sensitivity to noise permitted by local government at a site, a determination of compatibility must be based on that use that is most adversely affected by noise.

- Fort Mifflin is frequently used for educational purposes; however, due to the close proximity and orientation to the runways at the Airport, educational programs are frequently interrupted by extremely low and loud aircraft operations. School groups visit the Fort year round to take part in a variety of educational programs, and from April through November the general public is welcomed to visit the Fort.

- The Fort is authorized to provide housing for a year round on-site caretaker, in order to maintain and provide security for the facility when it is closed and especially during the nighttime. Unfortunately, due to the extreme noise levels experienced at the Fort, the administration has not been able to take advantage of this option.

- The intent of this measure is to authorize and fund a detailed study to determine if potential noise mitigation measures, such as sound insulation, could be effective in reducing the interior noise levels at that location. Key to the effort will be identifying suitable and effective mitigation measures that would not alter the character of this historic resource. Areas of concentration should include those facilities at Fort Mifflin that are commonly used for educational purposes, daily business activities, and the caretaker's quarters.

- Land uses at Fort Mifflin such as a caretaker residence, business offices and public educational facilities would be considered sensitive uses. Therefore, only those specific areas of use at Fort Mifflin could be eligible for noise mitigation, and could be partially funded by the FAA.

- Effective mitigation could reduce the interior noise levels of the areas within Fort Mifflin used for caretaker housing as well as the portion of the visitor's center that is used for educational purposes and staff business offices. (See pages 2-5, 4-24 and 25)

FAA Action: Approved for study. Any recommendations to implement the results of the study would need to be included in an amendment to the Noise Compatibility Program.

PROGRAM MANAGEMENT

PM – 1: Establish a Noise Abatement Advisory Committee

Description: Using the Part 150 Study Advisory Committee as a basis of membership, request additional volunteers or appointments from local municipalities within the area affected by operations at the airport to serve on a continued Noise Abatement Advisory Committee. The purpose of this committee would be to maintain regular communication and exchange of ideas between the Airport and surrounding communities, to enhance community understanding of the constraints on airport users and operators, and to serve as a vehicle for disseminating information to the community. The committee would be advisory in nature and chaired by the Director of Aviation or his designee. The Airport Noise Office unit of the Airport's Marketing and Public Affairs department would handle administrative duties. The committee would meet quarterly, or as necessary at its convenience. The committee is intended to communicate the nature of land use compatibility to the community and to assist in describing the Airports Noise Compatibility Program. (See page 4-26 and Appendix G)

FAA Action: Approved

PM-2: Enhance the Airport's Noise Monitoring System

Description: The existing Airport Noise Monitoring System (ANMS) is aging and would benefit from an upgrade of computer hardware to increase the reliability of the system and the efficiency of the Noise Office staff. Upgrades should include increasing processor speed, increasing data storage capabilities, and enhancing noise monitoring and mapping software. Improvement of the system will better enable the Airport's Marketing and Public Affairs Noise Office staff to be responsive to community inquiries. (See page 4-27, Exhibit B-1 Appendix G, page G-4)

FAA Action: Approved. Criteria in FAA Order 5100.38B (or subsequent versions) Chapter 8 Noise Compatibility Projects, paragraph 813 Noise Monitoring Equipment/Systems, must be satisfied to be eligible for Federal financial assistance. For reasons of aviation safety, this approval does not extend to use of the monitoring equipment for enforcement purposes by in situ measurement of any present noise thresholds.

PM-3: Install additional noise monitors.

Discussion: Evaluate the locations and number of noise monitors existing at the airport to determine whether or not relocated or additional monitors would be beneficial to the airport and the community. Most likely, one additional monitor could be installed in Tinicum Township and another could be installed in the Brandywine Hundred section of Northern Wilmington, DE. Other locations will be determined as any modifications to flight locations resulting from the New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project become resolved. That project may suggest additional locations to both the east and west of the airport. Additionally, the results of the Airport's Master Planning effort may suggest the installation of monitors in other locations to better measure noise from future airport modifications that may be recommended. To accomplish this evaluation, the Airport may wish to employ outside services to assess existing locations, recommend future sites, and specify equipment and its placement. Alternately, the Airport's Marketing and Public Affairs department may assign this effort to its Noise Office staff as part of its regular duties, with support from a specialized consultant. Additional noise monitors would allow the Airport to have more and better data related to aircraft noise and flight paths that could be incorporated into planning studies. Additionally, long-term actual noise levels can then be shared with the communities that are affected by aircraft noise through the production of standard periodic reports. (See page 4-28, Exhibit B-1 and Appendix G)

FAA Action: Approved. Criteria in FAA Order 5100.38B (or subsequent versions) Chapter 8 Noise Compatibility Projects, paragraph 813 Noise Monitoring Equipment/Systems, must be

satisfied to be eligible for Federal financial assistance. For reasons of aviation safety, this approval does not extend to use of the monitoring equipment for enforcement purposes by in situ measurement of any present noise thresholds.

PM-4 Establish full time Noise Office with staff.

Description: The role of the Noise Office, which is a sub unit of the Airport's Marketing and Public Affairs department, will likely increase when the Part 150 Noise Compatibility Program is approved. The other Program Management measures, which are intended to increase the lines of communication between the airport and its surrounding communities, as well as to improve the quality and efficiency of the Noise Office, may necessitate greater staffing. To meet the demands anticipated for this office, both by the Program Management measures and in the expected increase in responsibilities associated with the residential sound insulation program (LU-1) and the purchase/resale program (LU-2), a full time commitment will be required. Staffing, which could be adjusted as conditions warrant, should include both technical and public relations expertise. Clerical assistance may be dedicated to the office or shared with other administrative functions of the Airport.

The responsibilities of the Noise Office should include management of the Airport Noise Monitoring System (ANMS), management and oversight of the residential sound insulation program, coordination of the noise complaint function and coordination of the Noise Abatement Advisory Committee. The Office should also maintain communication with Air Traffic Control to assure understanding of modifications to the airspace utilization as a result of the New York/New Jersey/Philadelphia Metropolitan Airspace Redesign Project and other such efforts that may evolve from that Project. The Office should also participate in the review of development designs to comment upon the application of noise abatement standards in plans for physical development on the Airport (NA-7). The Noise Office is intended to provide a single point of contact for community involvement with Airport staff on noise related issues and to relieve senior Airport management of daily coordination functions related to aircraft noise. (See page 4-29 and Appendix G)

FAA Action: Approved

PM-5: Establish a pilot/community awareness program

Description: A pilot and community awareness program would be designed to deliver information prepared by the Noise Office to both users and neighbors of the Airport. Communications to the community would carry messages of anticipated changes in the nature or character of noise in the environs, based on construction or other actions that may produce noticeable differences between normal and abnormal conditions. These messages could be distributed through a developing mailing list of interested neighbors, beginning with the membership of the NAAC and attendees at Public Workshops held during the Part 150 Study, through press releases, and through other means of direct communication.

Communications with controllers, pilots and air carriers would be intended to inform them of the noise-sensitivity of various areas around the airport and to request their consideration in using quiet flying techniques over those areas. Additionally, printed materials may be produced for posting or distribution in crew lounges, at fixed base operator (FBO) flight planning centers, or potentially as insertable plates for the Jeppesen charts used by all commercial pilots. The specific form of such materials would become a responsibility of the Airport Noise Office. Improved communications between the airport and the neighboring communities would reduce the unexpected nature of changes and would explain the expected length of time changes might be in effect. (See page 4-30 and Appendix G)

FAA Action: Approved in concept. FAA will approve specific language prior to publication or distribution.

PM-6: Update the Noise Exposure Maps and Noise Compatibility Program

Description: The Noise Exposure Maps (NEMs) are likely to become outdated and will need to be brought current periodically. Given the concurrent Master Plan Study, it is expected that new Noise Exposure Maps will need to be produced in two to three years, upon completion of the planning process and prior to the implementation of any newly anticipated facilities. Following the initial update, the NEMs should continue to be updated at least every three years to consider changes in traffic and traffic flows, as well as updates of the noise modeling software.

The Noise Compatibility Program should be updated as necessary to reflect larger changes in the nature of aircraft noise surrounding the Airport. Should the Master Plan make recommendations that would enlarge the area of incompatible use exposed to aircraft noise above 65 DNL, or should major changes such as runway realignments or significant modifications to ground facilities be planned, the NCP should be updated prior to the implementation of those improvements. A full update may not be required, but rather, a targeted assessment of the changes occasioned by specific development projects may suffice to bring the NCP to currency and to qualify additional areas for NCP programs, if appropriate. After five years, if such changes occur, or if the number and character of operations changes significantly, the NCP should then be updated.

Periodically evaluate the need for an NEM or NCP update. If appropriate, retain a qualified planning consultant to conduct the updates, separately or together. Complete and publish the results, modifying or expanding NCP programmatic boundaries as appropriate at the time of update.

The measure provides for continuing planning and care in assuring the greatest compatibility between the airport and its environs. (See page 4-31 and Appendix G)

FAA Action: Approved.