

Part 150: Records of Approval

Hulman Regional Airport, Terre Haute, Indiana

Approved on 8/14/98

The Part 150 Noise Compatibility Study for Hulman Regional Airport (HUF), located in Terre Haute, Indiana, describes the current and future non-compatible land uses based upon the parameters as established in FAR Part 150, Airport Noise Compatibility Planning. The Hulman Regional Airport Authority (Airport Authority) recommends thirty (30) measures in its Noise Compatibility Program (NCP) to remedy existing noise problems and prevent future non-compatible land uses. These measures are grouped into three categories: Aviation Noise Abatement Element (12 measures), Land Use Management Element (14 measures) and Program Management Element (4 measures).

This Record of Approval (ROA) summarizes each measure of the Airport Authority's recommended NCP, identified below by program element, and includes a cross reference to page numbers in the NCP where each measure can be found. Detailed discussions of these measures can be found in Chapter Three (Noise Abatement Alternatives), Chapter Four (Land Use Management Alternatives), and Chapter Five (Noise Compatibility Program) of the Part 150 Noise Compatibility Study for Hulman Regional Airport.

The descriptive statements within the Record of Approval summarize as closely as possible the Airport Authority's recommendations in the NCP. FAA's approvals listed herein indicate only that the actions would, if implemented, be consistent with the purposes of Part 150. The statements contained with the summarized recommendations, and before the indicated FAA approval, disapproval, or other determination, do not represent the opinions or decision of the FAA. Also, 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.

NOISE ABATEMENT (NA):

NA-1 Establish a nighttime (10:00 p.m. to 7:00 a.m.) noise abatement preferential runway use program for jet arrivals on Runway 31 (Alternatives B, C, and E). When wind, weather, or runway surface conditions do not allow the use of Runway 31, arrivals will be assigned to Runway 5/23.

Requires runway length of 7,200' or greater (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-2, 5-3, 5-35 and 5-39 (Table 5-D)).

The Airport Authority proposes the establishment of a nighttime noise abatement preferential runway use program for jet arrivals on Runway 31. This measure is intended to apply only to jet aircraft operating between the hours of 10:00 p.m. and 7:00 a.m., allowing slower prop aircraft to be assigned other runways if necessary to assure a safe separation from jet aircraft without sacrificing operational efficiency. Furthermore, when conditions of wind, weather, runway condition or operational necessity do not allow the use of Runway 31, arrivals will be assigned to

Runway 5/23. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft.

Shifting the majority of night arrivals will reduce the number of single events and potential awakenings in the most densely populated area of the contour. The Airport Authority will encourage the Air Traffic Control Manager to implement this procedure through a Tower Order revision.

Approved as voluntary.

NA-2 Extend Runway 13/31 to the southeast to a full operable length of 9,000 feet. Provide appropriate parallel connector taxiways and a precision approach to Runway 31. Implemented on completion of EIS on Part 150 air traffic actions and extension of Runway 13/31 to 9,000 feet (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-2, 5-4, 5-35, 5-36 (Table 5-C) and 5-37 (Table 5D)).

The extension will allow additional arrivals to Runway 31 (during IFR weather, as well as VFR weather conditions assumed under NA-1), increasing the arrival use percentage to 86%. The extension will provide the major advantage by allowing implementation of measure NA-3, which calls for a preferential use of Runway 13 for departures. Implementation of NA-3 would significantly shift the 2002 noise contour away from populated areas and over lands used for strip mining (Alternative E). Implementation of NA-3 in combination with this runway extension provides the most noise benefit for the forecast year, 1-hub operation. (Table 3-A, page 3-23).

The Airport Authority will be responsible for implementing this action, on approval of a required EIS on the noise mitigation air traffic actions and the runway extension. This measure and all other air traffic actions stemming from the extension of Runway 13/31 to 9,000 feet will need to be assessed during the preparation of an EIS by the FAA (Airports) for the construction of the runway extension.

Approved. The Alternatives analysis contained in the NCP, Chapter 3, provides support that this runway extension will allow the significant number of night cargo operations to use Runway 13, thereby shifting the noise contour over compatible strip mining areas. This measure would reduce significant noise for approximately 309 people. Individuals within the DNL 65dB noise contour would be reduced from 534 to 225. The FAA recognizes that the runway extension will have other airfield efficiency benefits, but is satisfied that NA-2 meets the requirements for approval as a noise mitigation measure under 14 CFR Part 150.

NA-3 Establish a nighttime (10:00 p.m. to 7:00 a.m.) noise abatement preferential runway use program for departures on Runway 13. When wind, weather, or runway surface conditions do not allow the use of Runway 13, departures will be assigned to Runway 5/23. Requires runway length of 9,000' or greater. Measure assumes implementation of Measure NA-2. Implemented on completion of EIS on Part 150 air traffic actions and extension of Runway 13/31 to 9,000 feet (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-2, 5-5, 5-35 and 5-37 (Table 5-D)).

The Airport Authority proposes the establishment of a nighttime (10:00 p.m. to 7:00 a.m.) noise abatement preferential runway use program for departures on Runway 13 after implementation of Measure NA-2, extension of Runway 13/31 to a full length of 9,000 feet. When wind, weather, or runway surface conditions do not allow the use of Runway 13, departures will be assigned to Runway 5/23. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft.

This measure, with the extension, will allow the implementation of southeasterly flows as preferred for all departure operations at night. This measure will result in a large proportion of departures being made to the southeast, taking advantage of the extended runway and the most compatible land uses. The area southeast of the airport has been shown to be less densely developed than the areas to the southwest and northeast. An evaluation of the program, wind, and weather conditions at Hulman indicate that this configuration may be applied nearly 86 percent of the time during nighttime (10 p.m. to 7:00 a.m.).

Approved as voluntary.

NA-4 Establish nighttime noise abatement departure turns from Runway 13. From 10:00 p.m. to 7:00 a.m., all IFR jet traffic will hold runway heading until crossing the 180 radial from the TTH VORTAC. Upon crossing the 180 radial, aircraft bound to the east and north will turn to a 090 heading, climbing through 3,600 MSL before turning to assigned vector, and aircraft bound to the west and south will turn to a 180 heading, climbing through 3,600 MSL before turning to assigned vector. This measure assumes implementation of Measure NA-2. Implemented on completion of EIS on Part 150 air traffic actions and extension of Runway 13/31 to 9,000 feet (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-2, 5-7, 5-35 and 5-37 (Table 5-D)).

The Airport Authority proposes the establishment of nighttime noise abatement departure turns from Runway 13 during the time period from 10:00 p.m. to 7:00 a.m.. This measure provides that all IFR jet traffic hold runway heading until crossing the 180 radial from the TTH VORTAC. Upon crossing the 180 radial, aircraft bound to the east and north will turn to a 90 degree heading, climbing through 3,600 MSL before turning to assigned vector, and aircraft bound to the west and south will turn to a 180 degree heading, climbing through 3,600 MSL before turning to assigned vector. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft.

Approved as voluntary.

NA-5 Establish a nighttime noise abatement departure turn from Runway 5. From 10:00 p.m. to 7:00 a.m., all IFR jet traffic will hold runway heading until at least 1,000 feet MSL or the pilot believes such a turn can be initiated safely, at which point they will turn right to a 090 heading, climbing through 3,600 feet MSL before turning to assigned vector. Secondary departure courses for divergent separation will be maintained along runway heading. Implemented on completion of EIS on Part 150 air traffic actions and extension of Runway 13/31 to 9,000 feet (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-2, 5-7, 5-35, and 5-37 (Table 5-D)).

The Airport Authority proposes the establishment of a nighttime noise abatement departure turn from Runway 5 during the time period from 10:00 p.m. to 7:00 a.m. This measure provides that all IFR jet traffic during this time period hold runway heading until at least 1,000 feet MSL or the pilot believes such a turn can be initiated safely (originally 2.5 DME from the TTH VORTAC), at which point they will turn right to a 90 degree heading, climbing through 3,600 feet MSL before turning to assigned vector. Secondary departure courses for divergent separation will be maintained along runway heading. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft.

The presence of a large area of strip mines northeast and east of the Airport provides the opportunity for a noise abatement departure turn from Runway 5. By implementing a turn from Runway 5 to a heading of 90 degrees at a point about one-half mile northeast of the Airport, all traffic departing that runway at night will be directed over the mine lands. The affect will shift noise from the Seelyville area to the mine area. As a secondary divergent course for use during

peak departure periods, and when necessary to avoid delay, the straight-out departure climb to 3,600 MSL will be retained.

Approved as voluntary. Flight Standards objected to the requirement for aircraft departing on Runway 5 to turn at 2.5 DME from the TTH VORTAC. Flight Standards believes that under certain aircraft performance conditions this procedure would be unsafe, since the aircraft may not be able to attain sufficient altitude to initiate a safe turn. Flight Standards recommended that aircraft should not be required to initiate a turn until reaching at least 1,000 feet MSL or until the crew feels such a turn can be initiated safely. It has been determined that such a modification in the measure would not change the impact of this measure. The Airport Authority and Air Traffic have agreed to this modification.

NA-6 Establish a nighttime noise abatement departure course from Runway 23. From 10:00 p.m. to 7:00 a.m., all IFR jet traffic departing to north and west from Runway 23 will hold runway heading climbing through 3,600 feet MSL. When conditions warrant, establish a secondary departure course for divergent separation by providing departure turns from Runway 23 is recommended. When divergence is necessary, those jet aircraft departing to south and east will hold runway heading until 5.5 DME from the TTH VORTAC at which point they will turn left to a 180 heading, climbing through 3,600 feet MSL before turning to assigned vector. Implemented on completion of EIS on Part 150 air traffic actions and extension of Runway 13/31 to 9,000 feet (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-3, 5-8, 5-35 and 5-37 (Table 5-D)).

The Airport Authority proposes the establishment of a nighttime noise abatement departure course from Runway 23 during the time period from 10:00 p.m. to 7:00 a.m. Under this measure, all IFR jet traffic departing to north and west from Runway 23 will hold runway heading climbing through 3,600 feet MSL. When conditions warrant a secondary departure course for divergent separation will be established by providing departure turns from Runway 23. When divergence is necessary, those jet aircraft departing to south and east will hold runway heading until 5.5 DME from the TTH VORTAC at which point they will turn left to a 180 degree heading, climbing through 3,600 feet MSL before turning to assigned vector. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft. As traffic grows, and particularly when Runway 23 is required by winds in a two-hub operation, a secondary departure course is recommended which turns east and south bound departures to a 180 degree heading, initiated at 5.5 DME from the TTH VORTAC and maintained through 3,600 MSL.

Approved as voluntary.

NA-7 Establish 24-hour noise abatement departure turns from Runway 31. All itinerant aircraft departing Runway 31 will turn to a heading of 360 as soon as practical and climb through 3,600 MSL before turning to assigned vector. Implemented on completion of re-evaluation of EA for extension of Runway 13/31 to 7,200 feet (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-3, 5-9, 5-35 and 5-37 (Table 5-D)).

The Airport Authority proposes the establishment of 24-hour noise abatement departure turns from Runway 31. All itinerant aircraft departing Runway 31 will turn to a heading of 360 degrees as soon as practical and climb through 3,600 MSL before turning to assigned vector. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft. The turn will result in a course along Hunt Road to overfly open space north of the airport. Measure NA-7 is intended to avoid flights over Wyndham Subdivision, Woodridge Area, Robinhood Subdivision, Phoenix Hills, the east side of the City, and other residential development along the corridor during 24 hours of the day.

The Airport Authority will encourage the Air Traffic Control Manager to implement this procedure through a Tower Order revision. Implementation of this measure is independent of Measures NA-2 through NA-6.

Approved as voluntary.

NA-8 Discourage the use of Runway 31 for itinerant departure operations, except when required by conditions of wind, weather, runway closure or operational necessity (Pages 3-2, 3-3, 3-7 through 3-13, 3-15 through 3-17, 3-21, 3-22, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-3, 5-9, 5-10, 5-35 and 5-37, (Table 5-D)).

The Airport Authority proposes to discourage the use of Runway 31 for itinerant departure operations, except when required by conditions of wind, weather, runway closure or operational necessity. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft.

The area to the northwest of the airport is characterized by high population densities beyond about one mile from the runway end. The use of Runway 31 by aircraft for takeoff is not desired by the Airport Authority or the citizens residing in that area. The runway is not believed to be operationally necessary for departure by more than a very small percentage of the annual operations. The preferential runway use program established under Measure NA-3 calls for most nighttime traffic to use Runways 13 and 5 for takeoffs, supplemented by takeoffs on Runway 23 when necessary. Use of Runway 31 is always considered to be the last choice for itinerant departure and used when no other runway will serve. The runway is now rarely used by itinerant takeoffs unless operationally necessary.

The Airport Authority will communicate the sensitivity to noise of the area northwest of the airport through contacts with its based operators and local pilot cadre, and continuing communication with air traffic control management. The Authority will also provide the user carriers with notices incorporated into lease agreements acknowledging the measure. The Airport Authority may choose to adopt a formal policy discouraging use of Runway 31 for takeoffs, but adoption of the full Noise Compatibility Program will have the same effect.

Approved as voluntary.

Ultimate Noise Abatement Program for a Two-Hub Environment: "The addition of a second nighttime cargo sort operation at Hulman Regional Airport would require revisions of the initial Noise Abatement Program to allow for the efficient operation of the airfield, particularly during the departure launch period, assuming that both operators would depart their aircraft during the same time window. It is assumed that a second nighttime cargo sort facility would, in accord with the Airport's Master Plan, be located south of Runway 5/23 and west of Runway 13/31. Measures NA-1, NA-2, NA-7, and NA-8 will remain unchanged from the initial program, while Measures NA-3 through NA-6 will need to be modified to reflect the operating necessities of a two-hub environment. These modifications, as well as airfield development actions in support of a second hub, will likely require a new or supplemental EIS."

FAA Action - General Discussion: *The four revised measures of the Ultimate Noise Abatement Program are described below. They have all been disapproved pending submittal of additional information. The reasons for this disapproval are the speculative nature of a second nighttime cargo hub operator and the strong possibility that such an operator's aircraft mix would not be the same as that used in this analysis. The Airport Authority may, at the time the two-hub environment is imminent, provide supporting documentation and any required updated analysis in*

support of the following recommendations intended to mitigate noise generated from a two-hub operation.

NA-9 Modify the nighttime (10:00 p.m. to 7:00 a.m.) preferential departure runway program established by Measure NA-3. Jet aircraft bound to western and southern destinations will be assigned to Runway 13 under the preferential program. Jet aircraft bound to eastern and northern destinations will be assigned to Runway 5 for departures. When wind, weather, or runway surface conditions do not allow the use of Runway 13, departures will be assigned to Runway 5/23. When conditions do not allow use of Runway 5, departures will be assigned to Runways 13 and 23, as appropriate. This measure assumes the prior implementation of Measure NA-2 (Pages 3-2, 3-3, 3-7 through 3-12, 3-14 through 3-16, 3-18 through 3-21, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-10, 5-12, 5-23, 5-35, 5-36 (Table 5-C) and 5-38 (Table 5-D)).

The Airport Authority proposes to modify the nighttime (10:00 p.m. to 7:00 a.m.) preferential departure runway program established by Measure NA-3 after Runway 13/31 is extended to 9,000 feet under Measure NA-2 and a second air cargo hub has been established at the airport. This measure provides a dual departure stream preferential runway use program for all departing aircraft during the night. Jet aircraft bound to western and southern destinations will use Runway 13 as a preferred runway. An evaluation of the program, wind, and weather conditions at Hulman indicate that this configuration may be applied 86 percent of the time during nighttime (10 p.m. to 7:00 a.m.). Similarly, jet aircraft, during the nighttime, destined to eastern and northern cities will be assigned to depart from Runway 5. The weather conditions at Hulman will permit the jet aircraft to depart from Runway 5 over 85 percent of the time during the nighttime hours. The modified use of the runways by nighttime cargo traffic in two-hub conditions is presented in **Table 5-B**. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft. Implementation will occur only on initiation of service by a second nighttime cargo hub operating from a south field location.. The Airport Authority will encourage the Air Traffic Control Manager to implement this procedure through a Tower Order.

Disapproved Pending Submittal of Additional Information Demonstrating a Commitment for Establishment of a Second Nighttime Cargo Hub.

NA-10 Modify the noise abatement turns from Runway 13. From 10:00 p.m. to 7:00 a.m.: All IFR nighttime jet traffic departing Runway 13 under the conditions of Measure NA-9 shall be directed to hold runway heading until crossing the 180 radial from the TTH VORTAC at which point aircraft bound to the south and west will turn to a 180 heading and climb through 3,600 MSL before turning to assigned vector. This measure assumes the implementation of Measures NA-2 and NA-9. When wind, weather or other conditions require that all aircraft depart Runway 13, the turn procedures set forth by Measure NA-4 shall apply (Pages 3-2, 3-3, 3-7 through 3-12, 3-14 through 3-16, 3-18 through 3-21, 3-23 (Table 3-A), 3-24 (Exhibit 3-H) 5-12, 5-13, 5-14, 5-35 and 5-37 (Table 5-D)).

The Airport Authority proposes to modify the noise abatement departure turns from Runway 13 during the time period from 10:00 p.m. to 7:00 a.m. All IFR nighttime jet traffic departing Runway 13 under the conditions of Measure NA-9 will be directed to hold runway heading until crossing the 180 radial from the TTH VORTAC at which point aircraft bound to the south and west will turn to a 180 degree heading and climb through 3,600 MSL before turning to assigned vector. This measure assumes the implementation of Measures NA-2 and NA-9. When wind, weather or other conditions require that all aircraft depart Runway 13, the turn procedures set forth by Measure NA-4 will apply. Since the measure is designed for application in conjunction with Measure NA-11, separation between departing aircraft using the preferential program set forth by Measure NA-9 is assured. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft.

Disapproved Pending Submittal of Additional Information Demonstrating a Commitment for Establishment of a Second Nighttime Cargo Hub.

NA-11 Modify the noise abatement departure turns from Runway 5. From 10:00 p.m. to 7:00 a.m.: All IFR nighttime jet departures bound to eastern destinations shall be directed to hold runway heading until 2.5 DME from the TTH VORTAC at which point they shall turn right to a 090 heading, climbing through 3,600 feet MSL before turning to assigned vector. All IFR nighttime jet aircraft bound to northern destinations will be directed to maintain runway heading until passing 3,600 MSL before turning to assigned vector. This measure assumes implementation of Measure NA-9. When wind, weather, or other conditions require that all aircraft depart Runway 5, the turn procedures set forth by Measure NA-5 shall apply (Pages 3-2, 3-3, 3-7 through 3-12, 3-14 through 3-16, 3-18 through 3-21, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), 5-12, 5-14, 5-35 and 5-38 (Table 5-D)).

The Airport Authority proposes to modify the noise abatement departure turns from Runway 5 during the time period from 10:00 p.m. to 7:00 a.m. All IFR nighttime jet departures bound to eastern destinations will be directed to hold runway heading until 2.5 DME from the TTH VORTAC at which point they will turn right to a 90 degree heading, climbing through 3,600 feet MSL before turning to assigned vector. All IFR nighttime jet aircraft bound to northern destinations will be directed to maintain runway heading until passing 3,600 MSL before turning to an assigned vector. This measure assumes implementation of Measure NA-9. When wind, weather, or other conditions require that all aircraft depart Runway 5, the turn procedures set forth by Measure NA-5 will apply under the two-hub scenario. This measure provides for the separation of departures by aircraft using Runway 5 when the two-runway preferential departure program is in effect. Aircraft bound to the east will continue to use the 90-degree heading procedure established by Measure NA-5, while aircraft bound to the north will maintain runway heading until reaching 3,600 feet MSL. This measure establishes two departure courses from Runway 5 when operations levels demand them. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft.

Disapproved Pending Submittal of Additional Information Demonstrating a Commitment for Establishment of a Second Nighttime Cargo Hub.

NA-12 Modify the noise abatement departure turns from Runway 23. From 10:00 p.m. to 7:00 a.m.: All IFR nighttime jet traffic bound to the east and south shall be directed to hold runway heading until 5.5 DME from the TTH VORTAC at which point they shall turn left to a 180 heading, climbing through 3,600 feet MSL before turning to assigned vector. All IFR nighttime jet traffic bound to the west and north shall maintain runway heading until climbing through 3,600 feet MSL before turning to assigned vector. This measure assumes two-hubs are in place. When wind, weather, or other conditions require that all aircraft depart Runway 23, the turn procedures set forth by Measure NA-6 shall apply (Pages 3-2, 3-3, 3-7 through 3-12, 3-14 through 3-16, 3-18 through 3-21, 3-23 (Table 3-A), 3-24 (Exhibit 3-H), (5-12, 5-14, 5-15, 5-35 and 5-38 (Table 5-D))).

The Airport Authority proposes to modify the noise abatement departure turns from Runway 23 during the time period from 10:00 p.m. to 7:00 a.m. All IFR nighttime jet traffic bound to the east and south would be directed to hold runway heading until 5.5 DME from the TTH VORTAC at which point they will turn left to a 180 heading, climbing through 3,600 feet MSL before turning to assigned vector. All IFR nighttime jet traffic bound to the west and north will maintain runway heading until climbing through 3,600 feet MSL before turning to an assigned vector. This measure assumes two-hubs are in place. When wind, weather, or other conditions require that all aircraft depart Runway 23, the turn procedures set forth by Measure NA-6 will apply. This means that when Runway 23 must be used at night during late night departure operations of two cargo hubs (assuming Measure NA-9 is prevented by weather or wind conditions), turns are to be

recommended for separation of traffic. Jets bound to the north and west will continue to use the runway heading course set forth by Measure NA-6. Jets bound to the east and south will turn left at 5.5 DME from the TTH VORTAC to a 180-degree heading and climb through 3,600 feet MSL before turning on course. The measure is voluntary and is not intended to abrogate the responsibility of the pilot-in-command for the safe operation of his/her aircraft. The flight courses described in this measure will split departure operations between the subdivisions along the extended centerline (Willa Villa, Southwood, Allendale, Woodgate), and under the turn (Idle Creek, Lexington Farms).

Disapproved Pending Submittal of Additional Information Demonstrating a Commitment for Establishment of a Second Nighttime Cargo Hub.

LAND USE (LU):

Noise Exposure for the 5-year timeframe, with noise abatement measures in place:

(a) *When the recommended Ultimate Noise Abatement Program measures are implemented, they would result in the noise pattern as presented in **Exhibit 5-B**. This is the same set of contours as was presented in Chapter Three for the Alternative D scenario. Compared with 2002 baseline conditions, the population impacted by noise above 65 DNL is reduced from 1,332 to 630 (see **Table 3-A** on Page 3-23). However, FAA has disapproved the measures associated with the two-hub operation. The reasons for this disapproval are the speculative nature of a second nighttime cargo hub operator and the strong possibility that such an operator's aircraft mix would not be the same as that used in this analysis. The Airport Authority may, at the time the two-hub environment is imminent, provide supporting documentation and any required updated analysis in support of the following recommendations intended to mitigate noise generated from a two-hub operation.*

(b) *The following FAA determinations on the land use recommendations are based on the official 5-year NEM -- identified as Exhibit B, page 5 of the NCP. This 5-year NEM assumes a 2002 one-hub operation, evaluated as Alternative E in the NCP. Implementation of noise abatement measures for the 5-year one-hub operation indicate a reduction in population -- from 534 to 225 -- within the DNL 65dB noise contour.*

LU-1 Request Vigo County to re-zone for compatible commercial or industrial use property acquired for noise mitigation southwest of Airport along Anton Frontage Road (west of S.R. 46 north and south of I-70 and property located north and west of the Airport). (Pages 4-4, 4-8 (Table 4-B), 4-10, 4-11, 4-25 (Table 4-F), 5-15 through 5-17, 5-19, 5-35 and 5-39 (Table 5-D)).

The Airport Authority plans to encourage Vigo County to re-zone property acquired for noise mitigation southwest of the airport along Anton Frontage Road for compatible commercial for industrial use. Much of this property is west of S.R. 46, north and south of I-70, while the rest is located north and west of the airport. Exhibit 5-C shows areas within the official 5-year 2002 65DNL contour proposed for commercial or industrial zoning. These areas are potentially well suited to commercial, and possibly, certain industrial uses based on their proximity to major roadways and access to the Airport. The Airport Authority will retain noise and aviation easements to the property. It will also retain a restrictive land use easement that specifically prohibits development of the land for any residential development in areas subject to low and loud aircraft overflights.

Approved.

LU-2 Encourage Vigo County and Terre Haute to establish Noise Overlay Zone (NOZ) boundaries based on combination of the existing noise contour and the future 2002 One-Hub (Alternative E) abated conditions noise contours. (Pages 4-5, 4-8 (Table 4-B), 4-11 through 4-14, 4-25 (Table 4-F), 5-15, 5-7, 5-20, 5-21, 5-35 and 5-39 (Table 5-D)).

The Airport Authority plans to encourage Vigo County to continue to enforce the stipulations covered by the current NOZ regarding development within the 65 DNL noise contours of existing and future one-hub contours, as shown in **Exhibit 5-D**. This would limit the number of noise-sensitive facilities that could be built within this potentially annoying noise impact area. These zoning provisions would apply only to new development. The establishment of the noise overlay zone is based on the land use compatibility guidelines found in **Table 2-G**. In addition to land use standards, the noise overlay zone also requires in the N-1 (65-70 DNL) a minimum lot size of five acres for any new residences. This would limit the number of homes that could be built in these noise-impacted areas. If the County desires, adopting a standard agricultural or rural residential zoning district and zoning areas within the noise contours accordingly could achieve this minimum lot size requirement.

The noise overlay zone requires soundproofing design standards to be used for each of the N-1 (65-70 DNL), N-2 (70-75 DNL) and N-3 (75+ DNL) zones. All residential uses located in the N-1 zone should be soundproofed to achieve a 25-dB reduction from outdoor noise levels (NLR). Residential uses permitted to be located in the N-2 zone include transient lodgings, hotels, and motels, but not individual or multi-family units. The former are required to be soundproofed to achieve a 30 dB NLR. All soundproofed residential units must be provided with heating, cooling, and ventilation systems capable of permitting closed windows and doors year round. Vigo County currently adheres to the Uniform Building Codes and it is anticipated that these would be further used to guide the design of soundproofing construction standards. An aviation easement for noise should be provided to the Airport Authority. Residential development is not permitted in the N-3 zone.

It is recommended that the noise overlay zoning district boundaries be based on a composite set of noise contours developed by overlaying the existing noise contour with the future 2002 one-hub abated conditions (Alternative E) Noise Compatibility Program noise contours, as shown in **Exhibit 5-D**. Once the future one-hub conditions are in place, areas included in the existing noise contour, but not included in the future one-hub conditions would be released for development. These areas will be located primarily southwest of the airport.

The Airport Authority should encourage Vigo County to adopt and enforce the NOZ boundaries and requirements.

Approved. However, it is noted that the existing and proposed Noise Overlay Zoning Districts do permit new noise sensitive development under certain circumstances. The FAA discourages new noise sensitive development within the DNL 65dB noise contour, even with soundproofing and aviation easements. It is further noted that, under FAA's final policy on Part 150 Approval of Noise Mitigation Measures: Effect on the Use of Federal Grants for Noise Mitigation Projects, any noncompatible development that potentially may occur on or after October 1, 1998, will not be eligible for AIP funding for noise mitigation under the Part 150 program.

LU-3 Encourage Vigo County to continue to require the recording of plat notes for subdivisions which identify areas of high aircraft noise levels (Pages 4-5, 4-8 (Table 4-B), 4-13, 4-14, 4-25 (Table 4-F), 5-15, 5-21, 5-35 and 5-39 (Table 5-D)).

The Airport Authority proposes to encourage Vigo County to continue requiring the identification of high noise areas on plat notes for subdivisions within the NOZ boundary. Vigo County has subdivision control authority in the study area. The subdivision regulations now require that a notice of potentially high noise levels be recorded with the secondary plat of subdivisions within the noise overlay zones. It should be clear that this requirement applies within the 65 DNL contour (as noted by LU-2).

Several subdivisions are currently being constructed to the southwest and south of the Airport which were platted prior to the adoption of the noise overlay zone; however, development of these subdivisions still must adhere to the stipulations found in the Subdivision Control Ordinance for the Vigo County Area. Undeveloped areas to the south and southwest are becoming more ripe for subdivision development and therefore, requiring the notation of areas of high aircraft noise on the secondary plat could make potential home buyers aware of the types of aircraft activity in the surrounding area.

Approved.

LU-4 Continue to implement an informal fair disclosure program. (Pages 4-5, 4-8 (Table 4-B), 4-14, 4-15, 4-25 (Table 4-F), 5-15, 5-21, 5-22, 5-35 and 5-39 (Table 5-D)).

The Airport Authority plans to continue to make efforts to inform the public and local government officials about the airport and the need for land use compatibility in the area. At a minimum, information is distributed to public libraries and municipal and county offices. Other steps that could be taken are the preparation of brochures, the posting of signs along roads adjacent to airport property, and speaking engagements at schools, service groups, and other public meetings. In addition, Indiana Code 24-4.6-2-5(4) stipulates a disclosure by the owner that an airport is located within a geographical distance from the property, as determined by the Indiana Real Estate Commission, is to be recorded on a seller's residential real estate sales disclosure form.

Approved.

LU-5 Encourage Vigo County, City of Terre Haute, and the Area Planning Commission to adopt the 1997 Part 150 Noise Compatibility Program Study as a comprehensive element (Pages 4-6, 4-8 (Table 4-B), 4-9, 4-25 (Table 4-F), 5-15, 5-22, 5-23, 5-35 and 5-39 (Table 5-D)).

The Airport Authority proposes to encourage the Area Planning Commission, Vigo County, and Terre Haute to adopt the 1997 Part 150 Noise Compatibility Program Study, or relevant parts of it, as part of their comprehensive plans or as an official planning guideline after approval by the Airport Authority Board. To date, the Noise Compatibility Program and NOZ requirements have only been adopted by Vigo County.

Approved.

LU-6 Encourage the City of Terre Haute and Vigo County to establish formal discretionary project review guidelines requiring the consideration of the 1997 Part 150 Noise Compatibility Program in the review of development proposals (Pages 4-6, 4-8 (Table 4-B), 4-16, 4-17, 4-25 (Table 4-F), 5-16, 5-22,, 5-35 and 5-39 (Table 5-D)).

The Airport Authority proposes to encourage Terre Haute and Vigo County to adopt formal project review guidelines, listed below, for use within areas subject to noise above 65 DNL. The adoption of project review criteria as part of local land use plan, requiring the consideration of airport noise

and land use compatibility, would help ensure that this important concern is not neglected during future land use deliberations.

- A. Determine the sensitivity of the subject land use to aircraft noise exposure levels. The land use compatibility standards presented in **Table 2-G** can be used for this purpose.
- B. Locate noise-sensitive public facilities outside the 65 DNL contour, if possible. Otherwise, encourage building construction to attenuate interior noise levels to 45 DNL for development in the vicinity of the airport.
- C. Discourage the approval of re-zonings, exceptions, variances, and conditional uses, which introduce noise-sensitive development into areas impacted by noise exceeding the 65 DNL of the Noise Overlay Zone.

Approved. This is within the authority of the local land use planning jurisdictions.

LU-7 Encourage the Area Planning Commission, City of Terre Haute, and Vigo County to adopt capital improvements programming policies discouraging extension of water and sewer services for single and multi-family residential uses into noise-impacted areas (Pages 4-6, 4-8 (Table 4-B), 4-17, 4-18, 4-25 (Table 4-F), 5-16, 5-23, 5-24 , 5-35 and 5-39 (Table 5-D)).

The Airport Authority proposes to encourage the Area Planning Commission, Vigo County, and Terre Haute to adopt capital improvements programming policies after approval of the Noise Compatibility Program by the Airport Authority Board. These policies would discourage extension of water and sewer services for single and multi-family residential uses into noise-impacted areas. These could be adopted as part of a comprehensive plan, part of a capital improvements program, or as a freestanding document.

Approved. This is within the authority of the local land use planning jurisdictions.

LU-8 Guarantee the purchase of 17 residences located within and adjacent to the 75 DNL noise contour for existing (1997) NEM conditions (Pages 4-6, 4-8 (Table 4-B), 4-18 through 4-20, 4-25 (Table 4-F), 5-16, 5-24, 5-25 (Exhibit 5-E), 5-35, 5-36 (Table 5-C) and 5-39 (Table 5-D)).

The Airport Authority proposes to guarantee the purchase of 17 residences located within and adjacent to the 75 DNL noise contour for existing conditions. The existing noise exposure pattern includes a total of 18 residences within and immediately adjacent to the 75 DNL contour. Of these, 13 homes were identified by the 1989 Local NCP for acquisition by the Airport; 12 of those 13 have been purchased for noise mitigation purposes. One home remains to be acquired. Four additional residences fall within the 75 DNL noise contour of the existing conditions, leaving five units yet to be acquired within the existing 75 DNL noise contour. These homes will be eligible for voluntary acquisition by the Airport Authority when it has the funds needed. Reimbursement will be sought on those homes that have been previously acquired for noise mitigation under the 1989 Local Noise Compatibility Program (locally adopted but not submitted for approval by the FAA). The above homes were or are impacted by severe noise levels and should be or have been removed. These residences are identified on **Exhibit 5-E**.

Approved.

LU-9 Guarantee the purchase of 18 residences identified in the 1989 Local Part 150 Noise Compatibility Program for acquisition, located outside the existing 75 DNL noise contour but within the existing 65 DNL noise contour that are exposed to noise of low overflights and/or on-airport ground operations (Pages 4-6, 4-8 (Table 4-B), 4-18 through 4-20, 4-25 (Table 4-F), 5-16, 5-24 , 5-25 (Exhibit 5-E), 5-26, 5-35, 5-36 (Table 5-C) and 5-39 (Table 5-D)).

The Airport Authority proposes to guarantee the purchase of 18 residences in the 1989 Local Part 150 Noise Compatibility Program. Four homes originally recommended for acquisition by the 1989 Local Noise Compatibility Program adopted by the Airport Authority (but not submitted for approval by the FAA) fall within the existing 70-75 DNL, while 14 fall within the 65-70 DNL. These homes are located directly north of the airport along SR 42 and directly west of the airport along Hunt Road. Therefore, these 18 homes are recommended for acquisition based on their proximity to low altitude overflights on approach or takeoff, runway sideline noise and proximity to ground (ramp or runway) operations. These homes are exposed to high single event noise levels that create significant disturbances to lifestyles during the day and nighttime hours. These residences are indicated on **Exhibit 5-E**.

Under federal priority funding standards, the 4 homes (or three areas) designated as 9B on **Exhibit 5-E** would likely be acquired first under this measure based on their location in the 70-75 DNL noise contour. However, the remaining 14 homes (in 4 areas) identified as 9C on **Exhibit 5-E** could be potentially purchased at the same time, but under new federal funding priorities may be delayed until later in the program. This measure provides for the continuation of the 1989 Local Noise Compatibility Program acquisition measure adopted by the Airport Authority.

Approved.

LU-10 Guarantee the purchase of 24 residences located within the year 2002, one-hub, 75 DNL noise contour of the recommended Noise Abatement Plan which have not been acquired under Measures LU-8 and LU-9 (Pages 4-6, 4-8 (Table 4-B), 4-10, 4-11, 4-25 (Table 4-F), 5-16, 5-25 (Exhibit 5-E), 5-26, 5-35 and 5-36 (Table 5-C) and 5-39 (Table 5-D)).

The Airport Authority proposes the extension of Runway 13/31 to a length adequate for that runway to be used by a large number of takeoff operations during the night hours. The preferred use of Runway 13 for takeoffs by large aircraft will result in the relocation of a large part of the noise exposure pattern to the southeast of the Airport. Therefore, this measure is recommended to provide for the guaranteed purchase of those residences which are expected to lie within the 75 DNL contour subsequent to the extension of Runway 13/31 to 9,000 feet in length and the implementation of the preferential runway use program of measure NA-3. The initial area of acquisition southeast of the Airport is limited to the noise contours associated with a one-hub operations level. The area of residences recommended for acquisition within this measure is along the extended centerline of Runway 13 departures. The above homes were or are impacted by severe noise levels and should be or have been removed. These residences are identified on **Exhibit 5-E**.

Residences within the area southwest and northeast of the Airport within the projected 75 DNL noise contour for the one-hub future scenario should be eligible for guaranteed purchase under recommended Measure LU-9. Consequently, the additions to the guaranteed purchase program for the one-hub future scenario, with the preferential departure use of Runway 13 in place, will be limited to areas along the extended centerline of the runway and northwest of the Chinook Mine, Southwest Field. This area includes 18 homes, which will not be eligible for acquisition under Measures LU-8 and LU-9. Six homes, three each at the two ends of Runway 13/31, were identified in the 1989 local acquisition plan for noise abatement, but fall outside the 65 DNL noise contour of the existing conditions. Therefore, they cannot, under new funding priorities, be acquired as expeditiously as homes under LU-8 and LU-9. Therefore, although these six homes have already been acquired, their location results in their inclusion with and prioritization with the new homes in Measure LU-10.

Approved.

LU-11 Guarantee the purchase of 7 residences located within the year 2002, two-hub, 75 DNL noise contour of the recommended Noise Abatement Plan which have not been acquired under Measures LU-8, LU-9 or LU-10 (Pages 4-6, 4-8 (Table 4-B), 4-18 through 4-20, 4-25 (Table 4-F), 5-16, 5-25 (Exhibit 5-E), 5-27, 5-28, 5-35, 5-36 (Table 5-C) and 5-39 (Table 5-D)).

The Airport Authority proposes to guarantee the purchase of 7 residences located within the year 2002 75 DNL noise contour of the recommended Noise Abatement plan for the two hub condition which have not been acquired under Measures LU-8, LU-9 or LU-10. The recommended Noise Abatement Plan for the two-hub scenario will result in the enlargement of the 75 DNL contour to the southwest and northeast from the one-hub plan. To the southwest, the area of the 75 DNL contour for two hub operation will fall within the 75 DNL contour of the existing condition. Homes within the contour for the abated two-hub condition southwest of the Airport will have been acquired under Measure LU-8 (or LU-9). To the southeast and northwest of the Airport the area within the 75 DNL contour approximates the same location as the 75 DNL for the one-hub future scenario. Homes in that area will be acquired under Measure LU-10 (or LU-9). The above homes were or are impacted by severe noise levels and should be or have been removed. These residences are identified on **Exhibit 5-E**.

Those homes identified for guaranteed purchase in this measure will fall within the expanded 75 DNL contour to the northeast and southeast of the Airport. In that area, 7 additional homes will be included within the guaranteed purchase program boundaries, which have not been mitigated under LU-10 or other measures. These residences will be added to the program only after a firm commitment is made for the development of a second night cargo hub at Terre Haute.

Disapproved Pending the Submittal of Additional Information Demonstrating a Firm Commitment to Establish a Second Nighttime Cargo Hub.

LU-12 Provide for purchase assurance and sound insulation of 60 homes located within the 65-75 DNL contour range of the 2002, one-hub, Noise Abatement Plan condition, which have not otherwise been mitigated through one of the guaranteed purchase programs. Homes built after 1997 would not be eligible (Pages 4-8 (Table 4-B), 4-20 through 4-23, 4-25 (Table 4-F), 5-16, 5-25 (Exhibit 5-E), 5-28, 5-29, 5-30 (Exhibit 5-F), 5-35, 5-36 (Table 5-C) and 5-39 (Table 5-D)).

It is recommended that the Airport Authority establish a program of mitigation involving the installation of residential sound insulation in exchange for an avigation and noise easement over the property; at the airport's option, the Airport may also assure the sale of the property at a fair market value by being the purchaser of last resort. The program should be limited to those now-existing properties within the 65 DNL of the one-hub Noise Abatement Plan contours, as shown in **Exhibit 5-F**, which are not mitigated by acquisition under Measures LU-8 through LU-11 or do not already have easements or covenants with the airport. Homes built after 1997 would not be eligible for purchase assurance or sound insulation.

The sound insulation and purchase assurance program is intended to serve as a transition between a program of outright acquisition and demolition, as provided for under LU-8 through LU-11, and a program of no action. The program is strictly voluntary in nature. It is intended to avoid the unnecessary demolition of worthwhile structures, avoid the impacts of an acquisition program on adjacent residences, and minimize the number of properties to be acquired directly.

Before the sound insulation program is offered on a regular basis, a pilot program should be initiated using one to four homes. This action would enable interested contractors to become

familiar with the nature of sound insulation while also permitting the Airport Authority to refine administrative and inspection procedures. Most importantly, it would give the public an opportunity to see and hear the effects of the soundproofing program. Residences purchased under LU-9 which do not fall within the 75 DNL contours of either the one- or two-hub Noise Abatement Plan conditions would serve as good candidates for insulation because they would be under Airport ownership, yet available for the public to enter during the late night cargo flight periods.

Approved.

LU-13 Purchase noise and aviation easements on 151 homes within the 65 DNL noise contours of the 2002, two-hub, Noise Abatement Plan noise exposure pattern which have not been mitigated by other measures. Homes built after 1997 would not be eligible (Pages 4-7, 4-8 (Table 4-B), 4-22, 4-23, 4-25 (Table 4-F), 5-16, 5-25 (Exhibit 5-E), 5-31, 5-32, 5-35, 5-36 (Table 5-C) and 5-39 (Table 5-D)).

The Airport Authority, upon receiving a firm commitment for a second air cargo hub, proposes to acquire noise and aviation easements on the 151 residences within the 65 DNL contour of the two-hub Noise Abatement Plan, as shown on **Exhibit 5-E**, which have not been mitigated by LU-8 through LU-12. Noise and aviation easements will provide the Airport with protection from litigation for noise-related actions in that area expected to be impacted by significant noise levels under the most impactful projected future condition. However, homes built after 1997 would not be eligible for noise and aviation easements. After a firm commitment of a second hub is received, it may be appropriate to revisit this measure vis-a-vis measure LU-12. This re-evaluation may take place during an update the NCP conducted under measure PM-3 or as mitigation of the EIS for a second cargo hub.

Disapproved Pending the Submittal of Additional Information Demonstrating a Firm Commitment to Establish a Second Nighttime Cargo Hub.

LU-14 Provide for the sound insulation of the church which is located southeast of the airport in the 65-75 DNL noise contour range of the 2002, one-hub, Noise Abatement Plan condition. However, if the church structure is incapable of being sound insulated for less than 25% of the original construction costs, the airport will seek to acquire an aviation easement (Pages 4-8 (Table 4-B), 4-20 through 4-22, 4-25 (Table 4-F), 5,16, 5-32, 5-35, 5-36 (Table 5-C) and 5-39 (Table 5-D)).

The Airport Authority proposes to sound insulate a church structure which is located southeast of the airport along the south side of Margaret Drive and west of Tabortown Road. The church structure is located in the 65-75 DNL contour range of the one-hub Noise Abatement Plan condition. The church is a one-story, 20,000 square feet metal building. The church facility is primarily used for Sunday church services and is not used as a secondary use as a school facility.

Approved.

PROGRAM MANAGEMENT (PM):

*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 at Hulman Regional Airport. The Airport Authority and its staff are responsible for implementing all of these measures. They are discussed below and summarized in **Table 5-D on Page 5-38.***

PM-1 Maintain a noise complaint response system (Pages 5-1, 5-33, 5-35, and 5-38 (Table 5-D)).

The Airport Authority proposes to continue its noise complaint response system. This involves keeping records of complaints and periodically analyzing them. (A noise complaint form was provided in the proposed 1989 Noise Compatibility Program document for the use of the Airport staff.) It is important to record the complaints, make an initial response, take follow-up actions or investigate if necessary, and take remedial action if appropriate. To cover the period of time when airport staff is not available, the installation of a telephone recording device to record noise complaints may be considered. This involves administrative costs for the Airport Authority. These costs could be covered through the airport operating budget. This is an on-going activity, which should be continued indefinitely.

Approved.

PM-2 Review the implementation of the Noise Compatibility Program (Pages 5-1, 5-33, 5-35, and 5-38 (Table 5-D)).

The Airport Authority proposes to continually review the progress of various agencies and organizations in implementing the 1997 Part 150 Noise Compatibility Program. Preparation of periodic reports for the Airport Authority Board is recommended. Specifically, the airport management should maintain communications with the local governments and local planning officials to follow their progress in implementing the Program. Special evaluations may occasionally be necessary to monitor specified conditions of change.

Approved.

PM-3 Update the Noise Exposure Maps and Noise Compatibility Program (Pages 5-1, 5-33, 5-35, and 5-38 (Table 5-D)).

The Airport Authority proposes that the Noise Compatibility Program should be reviewed and revisions and refinements considered 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 eight years. An update may be needed sooner, however, if major changes occur and later if conditions at the airport and in the surrounding area remain stable.

The 2002 official Noise Exposure Map is based upon a one-hub scenario, but the Noise Compatibility Program has incorporated both one-hub and two-hub scenarios. The official 5-year NEM should be updated to reflect the inclusion of a second hub when a commitment for that hub has been received. The update of the future NEM may be accomplished expeditiously since contingent NCP plans will be in place. It is expected that an NCP update will be needed about every five to eight years.

Approved.

PM-4 Designate maintenance run up locations (Pages 5-1, 5-34, 5-35, and 5-38 (Table 5-D)).

The Airport Authority previously designated locations for engine run-ups at Taxiway A4 at the south end of Runway 18/36 and the southeast end of Runway 13/31. Upon completion of the extension of Runway 13/31 to 9,000 feet, the Airport Authority proposes to modify the airport rules and regulations to designate the southeast end of Runway 13/31 for run-ups. This involves administrative costs for the Airport Authority. These costs could be covered through the airport operating budget.

The use of the interim run-up location at the south end of Runway 18/36 will continue until completion of the extension of Runway 13/31 to 9,000 feet.

Approved