

**BURBANK-GLENDALE-PASADENA AIRPORT
PART 161 STUDY**

**PREFERRED, LESS-RESTRICTIVE AND NON-
RESTRICTIVE ALTERNATIVES RECOMMENDED
FOR DETAILED EVALUATION DURING PHASE 2**

FINAL REPORT

Prepared for the Burbank-Glendale-Pasadena Airport Authority

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June 2002

INTRODUCTION

Part 161 of the Federal Aviation Regulations (FAR) requires a detailed evaluation of any proposed action that would restrict the access to an airport by aircraft certificated as meeting the noise level requirements of Stage 2 or Stage 3 of FAR Part 36. As part of this evaluation, the regulation requires that non-restrictive alternatives to the proposed restrictive action also be evaluated. The Federal Aviation Administration (FAA) has further decided that less-restrictive actions should also be assessed.

This document provides the foundation necessary to meet the FAA's requirements for Part 161 Studies by defining the proposed restrictive action under study. It identifies two potential less-restrictive options to the proposed action, and identifies one non-restrictive measure that may achieve the same reduction of noise impacts as is potentially achieved by the proposed action.

This document provides the following information:

- A background section which describes the basis for selection of the proposed 10 p.m. to 7 a.m. curfew as the preferred action under study in this Part 161 analysis.
- A further description of the purpose of this document sets forth the detailed specific requirements for evaluation under Part 161.
- A summary of the alternatives recommended for evaluation during the Part 161 study, including the proposed action, two less-restrictive alternatives to it, and one non-restrictive alternative having the potential to reduce noise impacts to levels comparable to the preferred restriction.

BACKGROUND

For several years, the City of Burbank and the residents of neighborhoods surrounding Burbank-Glendale-Pasadena Airport (Burbank Airport, BUR) have proposed various measures intended to reduce the noise levels from aircraft. Public comments at "Listening Sessions" held in August 2000 and "Forecast Briefings" held in May 2001, as well as hundreds of comments received from interested citizens have expressed a desire to impose a curfew on nighttime operations and some form of cap on the growth of future operations and/or enplanements at the Airport. These and other measures were also part of a public referendum, the Measure A initiative, approved by a substantial majority of the voters of Burbank in October 2001.

An evaluation by Landrum & Brown of the noise complaint records maintained by the Airport indicated that an extensive number of complaints concerned nighttime operations. These were found to be broadly dispersed throughout the area, but concentrated largely under the departure path from Runway 15 to the south and southwest of the airport, commonly as far as five miles from the Airport, in many cases far beyond the area eligible for acoustic treatment. Based on a comparison of the number of noise complaints received between July 1999 and June 2000, as well as the number of operations recorded by the Airport's TAMIS activity monitoring system during that same time period, nighttime activity generates complaints more than three times as frequently as daytime

operations and more than 20 times as frequently as evening operations. According to the records, one complaint will be generated for every 156 daytime operations and for every 1,044 evening operations, but nighttime activity will generate a complaint for every 52 operations.

Based upon this information, the Airport Authority determined that its highest priority objective should be the adoption of a nighttime curfew that addresses both current conditions and current concerns. Broader measures directed to the future of operations at the Airport, such as caps on operations or enplanements, are also worthy of analysis, but require additional refinement in terms of both goals and methodologies and should be addressed separately.

Consequently, the Burbank-Glendale-Pasadena Airport Authority adopted a goal to “*eliminate or significantly reduce nighttime flight noise at Burbank Airport now and in the future*” on July 15, 2000. In pursuit of that goal, the Authority has undertaken a study, under the provisions of Federal Aviation Regulation (FAR) Part 161, of the costs and benefits of imposing a restrictive measure, in the form of a nighttime curfew, that address the goal. Restrictions on future growth will be considered in separate Part 161 evaluations.

PURPOSE OF THIS DOCUMENT

FAR Part 161 was promulgated in September 1991 by the Federal Aviation Administration (FAA) in response to the Aviation Noise and Capacity Act (ANCA) passed by Congress in 1990. One of the purposes of ANCA was to make the imposition of local restrictions on aviation activity more consistent, structured, and rigorous, in exchange for the phasing out of all large Stage 2 aircraft in the national fleet by the end of 1999. The Regulation sets forth criteria for the evaluation of proposed measures and alternatives to them, including benefit-cost analyses and six statutory tests that must be met to achieve favorable consideration by the FAA for approval.

Section 161.305 of Part 161 requires the evaluation of alternatives to any restrictive action proposed for implementation. Not only must the proposed action (preferred alternative) be assessed, but voluntary restrictive agreements, less restrictive imposed actions and non-restrictive actions that accomplish comparable reductions of noise impacts must also be evaluated.

This document sets forth the Landrum & Brown Team’s recommended measure that best meets the Airport Authority’s goal (the preferred alternative), as well as a series of less restrictive alternatives that meet a portion of the Authority’s established goal and non-restrictive alternatives that may contribute to noise impact reduction at night. These measures will be evaluated in detail during Phase 2 of the Part 161 study, but are qualitatively addressed in later portions of this memorandum. Each of the suggested restrictive measures presented for study in Phase 2 of the study would also be addressed for its potential implementation as a voluntary agreement with full compliance by all users of the Airport.

REQUIRED PART 161 EVALUATION CRITERIA

Section 161.11 indicates that the same criteria set forth for the definition of noncompatibility and compatibility used by the Part 150 Airport Noise Compatibility Planning process are to be used in the determination of costs and benefits for Part 161 planning. The FAA has interpreted this to mean that all impact evaluations are restricted to the area included within the 65 Day-Night Sound Level (DNL) contour, as defined by the most current version of the Integrated Noise Model. The Community Noise Equivalent Level (CNEL) metric is used in California as a substitute for the DNL metric to represent the total noise energy level to which a location is exposed during each second of an average day of operation. Penalties of approximately 5 decibels for all evening activity (7 p.m. – 9:59 p.m.) and of 10 decibels for nighttime (10 p.m. – 6:59 a.m.) operations are applied before the CNEL average is computed. Consequently, every nighttime operation is modeled as the equivalent of ten equal operations during the daytime hours.

Section 161.305 requires that a Part 161 Study provide evidence that the proposed measure meets the following conditions:

Condition 1: The restriction is reasonable, nonarbitrary, and non-discriminatory.

Condition 2: The restriction does not create an undue burden on interstate or foreign commerce.

Condition 3: The proposed restriction maintains safe and efficient use of the navigable airspace.

Condition 4: The proposed restriction does not conflict with any existing Federal statute or regulation.

Condition 5: The applicant has provided adequate opportunity for public comment on the proposed restriction.

Condition 6: The proposed restriction does not create an undue burden on the national aviation system.

ALTERNATIVES PROPOSED FOR DETAILED EVALUATION

There are two levels of restriction alluded to by the project goal. The first, “to **eliminate** ... nighttime flight noise at Burbank Airport now and in the future”, may be addressed through only one means – the imposition of a full operational curfew between 10 p.m. and 7 a.m. Consequently, this measure constitutes the preferred alternative for study and is the only means by which the goal may be met. The lower level of restriction addresses a partial meeting of the goal “to ... **significantly reduce** nighttime flight noise at Burbank Airport now and in the future”. It is this second half of the adopted goal that suggests the evaluation of a series of less-restrictive alternatives that are designed to reduce or eliminate portions of the nighttime aircraft noise at the airport. In addition to the restrictive measures, a series of non-restrictive measures (i.e., those measures that do not prevent use of the airport) are identified to assure the comprehensive assessment of techniques for noise abatement that is required by Part 161.

PREFERRED ALTERNATIVE – RA-1

At the time the board adopted the project goal in July 2000, a curfew measure was presented for review. That measure, delineated below, constitutes the preferred alternative for evaluation during the Part 161 study. Its implementation would be subject to approval by the FAA under the provisions of FAR Part 161.

Full Nighttime Curfew – 10:00 p.m. to 7:00 a.m.

Specific Wording: *The Burbank-Glendale-Pasadena Airport Authority will enact a curfew on all flight operations by aircraft at BUR between the hours of 10 p.m. and 7 a.m. (local time). The curfew will take effect sixty days following approval.*

Exceptions: *The following aircraft shall be permitted to land at and takeoff from the Burbank-Glendale-Pasadena Airport between the hours of 10:00 p.m. and 7:00 a.m.:*

- 1. Law enforcement and fire fighting aircraft, disaster relief, military aircraft, aircraft owned or operated by the armed forces of the United States, and aircraft operated in support of military operations.*
- 2. Medical flight aircraft with documentation engaged in active emergency operations for the transportation of patients or human organs.*
- 3. Aircraft operating with declared in-flight emergencies for which Burbank Airport is selected as the appropriate landing facility.*
- 4. Aircraft delayed in landing and/or takeoff by weather, mechanical, or air traffic control; provided however, that this exception shall not authorize any landing or takeoff between the hours of 11:00 p.m. and 7:00 a.m.*

Upon the request of the Airport Authority, the aircraft operator or pilot in command shall document or demonstrate the precise emergency or delay causing conditions resulting in a landing and/or takeoff between the hours of 10:00 p.m. and 7:00 a.m.

Enforcement: *Violators will be penalized by a series of fines and/or sanctions, based on a consecutive 12-month period:*

1st Violation - \$3,000 Fine

2nd Violation - \$5,000 Fine

3rd Violation - \$7,500 Fine

4th Violation - \$10,000 Fine and action to ban access or terminate lease

The Airport Authority increased the fines for violation of the current noise rules to \$3,000 for the first offense effective March 1, 2001. Consequently, it is recommended

that the curfew measure carry commensurate penalties of \$3,000, \$5,000, \$7,500 and \$10,000 for the first through fourth offense during a twelve-month period. As with all noise rule fines, these charges may be increased in the future as appropriate.

Based on the draft forecasts of operations presented to the Airport Authority in October 2001, the number of aircraft affected by the preferred alternative was estimated for each forecast year and principal user and aircraft type group. The projected numbers of operations provided in the following and subsequent tables will be further refined during sensitivity analyses to be conducted during Phase 2 of the Part 161 Study. The information presented in **Table 1** indicates the anticipated number of nightly operations that would be eliminated by the preferred action alternative, based on the baseline forecasts.

It is likely that some, but not all, of these operations would be transferred to the daytime or evening hours. The specific response of each impacted user, as well as the resultant benefit and cost of the alternative is a principal topic of study in Phase 2 of the Part 161 study. Were all nighttime operations eliminated, the effective result in 2015 would approximate a reduction of approximately 35 percent in the area within the CNEL contour of 65 dBA¹, based on the draft forecasts of operations.

Table 1
Average Nightly Operations Forecast to be
Eliminated by the Preferred Alternative

Full 10-7 Curfew Preferred Alternative	2003		2008		2015	
	Takeoffs	Landings	Takeoffs	Landings	Takeoffs	Landings
Aircraft User Group						
Air Carrier Jets	2.3	3.0	3.2	4.2	6.1	5.7
Large Cargo Jets	0.0	0.6	0.0	0.6	0.0	0.7
Small Cargo Jets	1.6	1.6	1.6	1.6	0.0	0.0
Cargo Props	13.6	10.2	13.6	11.8	14.9	11.2
Stage 2 GA Jets	0.2	0.4	0.1	0.3	0.1	0.2
Stage 3 GA Jets	1.4	1.8	2.1	2.7	3.1	4.1
GA Props and R/C	1.5	2.0	1.4	1.8	1.2	1.5
Total Operations	20.6	19.6	22.0	23.0	25.4	23.4

Source: Landrum & Brown evaluation of "Draft Forecast of Aviation Activity Without Proposed Operating Restrictions", 3/2002

OTHER RESTRICTIVE ALTERNATIVES

Part 161 requires an assessment of measures that may achieve a comparable level of noise reduction as the preferred alternative, yet impose less restriction on the ability of operators to use the airport. Several restrictive measures were identified by the recently completed Part 150 Study for the airport, but were disapproved by the FAA subject to

¹ As computed by the FAA's Area Equivalent Method Model, Version 6.0b.

additional study under the Part 161 process². Others were rejected outright by the Part 150 process because they were considered too difficult to implement even under a Part 161 study.

Two measures included in the Airport's adopted Part 150 Noise Compatibility Program that were disapproved by the FAA, pending additional information and compliance with Part 161 were:

- Phase-out operations by all Stage 2 jets.
- Establish a mandatory curfew on departures by all Stage 2 aircraft between 10:00 p.m. and 7:00 a.m., departures by all aircraft over 75,000 pounds between 10:30 p.m. and 6:30 a.m., and arrivals by all aircraft over 75,000 pounds between 11:00 p.m. and 6:00 a.m.

The first of these measures does not address the established goal of this study and is accordingly not recommended for further study in this Part 161 evaluation. It may be addressed in an additional Part 161 study at a future time. The second measure addresses the project goal, in part, and elements of it are included in two recommended "less-restrictive" alternatives presented in a subsequent section of this document. However, a recent unpublished court decision concerning San Jose International Airport's restriction of operating hours raised serious questions as to the legality of restrictions based entirely on aircraft weight. The court concluded that the measure would unjustly discriminate against very quiet aircraft that exceed the weight limitation set by the airport. In fact, loud airplanes that weigh less than the weight limit would be able to operate, while quiet aircraft would be prohibited. Furthermore, the FAA has gradually changed its philosophy over the last decade to look unfavorably on measures that are based on the weight of the aircraft rather than its noise level. For these reasons, a purely weight-based measure is not deemed appropriate for further evaluation.

The Part 150 Study rejected several additional restrictive measures during its evaluation of alternatives prior to the completion of the Noise Compatibility Program. These were:

- Nighttime prohibition on takeoffs producing noise of 87.3 dBA or louder
A nighttime prohibition of takeoffs producing noise of 87.3 dBA or more was not considered effective for noise abatement by the Part 150 study, and was rejected because it would be subject to compliance with Part 161. This measure is representative of "noise level limitations", one of the proposed "less-restrictive" alternatives recommended for detailed evaluation in this Part 161 study as Alternative LRA-3, as discussed below.
- Cap on scheduled operations at 1998 or 2003 forecast levels
A cap on scheduled operations at 1998 or 2003 forecast levels was rejected by the Part 150 study as being ineffective in reducing impacts and also as requiring a Part 161 study for implementation. This Part 161 study is directed at the elimination or

² Disapproval for Part 150 purposes, pending further information indicates that a full Part 161 analysis must be conducted to determine the economic, legal and environmental effects associated with implementation of a specific measure that restricts the use of an airport by Stage 2 or Stage 3 aircraft. This Part 161 study is intended to provide the additional information required prior to approval.

reduction of nighttime noise at Burbank Airport. A cap on operations may be evaluated under a separate Part 161 study.

- Variants on full curfew based on time and aircraft operation type/weight

Variants on a full curfew, based on aircraft operation type and/or weight are addressed in the “Less Restrictive Alternatives” portion of this document. Variations of a full curfew based on time sensitivity will be addressed in Phase 2 of the Part 161 study as part of a sensitivity analyses.

Less Restrictive Alternatives

In compliance with FAA guidance to provide a full evaluation of the alternative measures available, and in keeping with the Airport Authority’s adopted goal to address nighttime flight noise, two restrictive measures have been identified that are less comprehensive than the preferred alternative. These are measures that meet the second portion of the goal that calls for “or significant reduction” of nighttime flight noise at the airport. Each restricts access to the airport by a portion of the operating fleet during the established nighttime hours.

- **Curfew on Departures – LRA-1**

Aircraft takeoffs are more frequently the cause of noise complaints than are landings. An evaluation of the distribution of the noise complaints about Burbank operations received during the past few years indicates a strong concentration of complaints under the departure paths from Runway 15 to the south and southwest, and many fewer complaints under the approach path to Runway 8 from the west. Furthermore, departures have traditionally produced noise measurements several decibels greater than arrivals. This factor is reflected in the modeling of aircraft noise where nearly all jet aircraft produce a noise footprint that indicates a significantly larger dispersion of takeoff noise across the ground than approach noise. Consequently, the imposition of a curfew only on departure activity may provide significant noise benefits at a substantially lower cost than the full nighttime curfew on all operations. Therefore, in keeping with the requirement to evaluate those measures that may accomplish comparable noise reduction as the preferred measure, yet affect fewer operations, the following measure is proposed for evaluation.

Implement a curfew at Burbank Airport between the hours of 10 p.m. and 7 a.m. on all departure operations, excepting that activity for which exceptions are provided under the preferred alternative.

By evaluating this measure as an across-the-board ban on nighttime departures by all aircraft types and not just by turbojets, there should be no issues of discrimination against specific types of aircraft or users.

If the measure were implemented, the number of baseline forecast operations that would be affected would be approximately halved from a full curfew. Large all-cargo jet operators would not be impacted at all by the measure, but all other operator groups

would be affected. **Table 2** indicates the anticipated effect of the imposition of a ban on departures at night.

Table 2
Average Nightly Operations Forecast to be
Eliminated by a Departure Curfew Alternative

Full 10-7 Curfew on Takeoffs Alternative	2003		2008		2015	
	Takeoffs	Landings	Takeoffs	Landings	Takeoffs	Landings
Air Carrier Jets	2.3	0.0	3.2	0.0	6.1	0.0
Large Cargo Jets	0.0	0.0	0.0	0.0	0.0	0.0
Small Cargo Jets	1.6	0.0	1.6	0.0	0.0	0.0
Cargo Props	13.6	0.0	13.6	0.0	14.9	0.0
Stage 2 GA Jets	0.2	0.0	0.1	0.0	0.1	0.0
Stage 3 GA Jets	1.4	0.0	2.1	0.0	3.1	0.0
GA Props and R/C	1.5	0.0	1.4	0.0	1.2	0.0
Total Operations	20.6	0.0	22.0	0.0	25.4	0.0

Source: Landrum & Brown evaluation of "Draft Forecast of Aviation Activity Without Proposed Operating Restrictions", 3/2001

The table assumes the continued operation of all operators at the airport and the reassignment or discontinuance of night departures to another facility. This assumption is unlikely, particularly for Ameriflight, which would be able to land, but not takeoff during the firm's critical nighttime activity period. The full effect of the measure on such nighttime operators, to be forecast during Phase 2, and may include the relocation of the operator from the Airport. If all nighttime takeoffs were eliminated with no change to other operations, the effective result would approximate a reduction of approximately 25 percent in the area within the 65 CNEL contour.

- **Curfew on Aircraft Exceeding an Aggregate Certificated Noise Level of Ten Decibels Less than the EPNdB Levels Set Forth by Part 36 for Stage 3 Aircraft Weighing 75,000 Pounds or Less – LRA-2**

The second less-restrictive measure recommended for evaluation during Phase 2 of the Part 161 Study would establish an aircraft "*noise level limit*" for nighttime operations. The Airport Authority has historically addressed nighttime noise problems Burbank Airport by limiting the amount of noise an aircraft can produce at measured locations. Rule 9 of the Airport's Noise Abatement Rules calls for penalties on aircraft that exceed a maximum sideline measured noise level. The limits were based on meeting the noise levels necessary to comply with FAR Part 36, Stage 3. Estimated sideline noise levels (the basic criteria upon which Burbank Airport's Noise Abatement Rule 9 is based) are no longer published by the FAA. However, every aircraft type and operating weight that is certified for operation has recorded certificated (as opposed to estimated) sideline, takeoff and approach noise levels. Consequently, if adopted, this measure would require a revision of Rule 9 to update it to be current with federal guidance materials.

In response to continuing complaints about the noise levels produced by aircraft at world airports, as well as to the airlines' largely unanticipated response to the required phase out of FAR Part 36 Stage 2 aircraft through hushkitting of engines to meet Stage 3 levels, new aircraft noise reduction initiatives are being taken by the European Union and the International Civil Aviation Organization (ICAO). Over the last two years, tentative agreement has been reached among ICAO member nations for the definition of a new class of aircraft, to be known as Chapter 4 (or "Stage 4") equipment. To comply with the Chapter 4 standards, new aircraft certified after 2006 would be required to have an aggregate maximum noise level ten (10) decibels less than is currently required for Stage 3 compliance. Many Stage 3 aircraft already meet these new noise levels. The FAA has been a participant in the negotiations that resulted in the selection of the ten decibel reduction as the Stage 4 standard, but the standard has not been adopted as a legal standard by the United States Congress. Because this "ten decibel" reduction has been accepted internationally and because the FAA has been a party to the selection of the "ten decibel" drop from Part 36 certificated noise levels, that reduction is recommended as a standard for definition of the second "less restrictive alternative" for evaluation during Phase 2 of this Part 161 study.

The maximum allowable noise levels for an aircraft weighing 75,000 pounds or less to be certified as compliant with Part 36, Stage 3 are 89 EPNdB on takeoff, 94 EPNdB at sideline and 98 EPNdB on approach. The arithmetic total of these levels is 281 EPNdB, which is determined consistently with the methodology expected for future regulatory application.

Consequently, an aircraft weighing 75,000 pounds or less would be required to have an aggregate noise level (the addition of certificated takeoff, sideline and approach noise levels) that is less than 271 decibels to meet proposed "Stage 4" noise levels. This would require an average reduction of slightly more than 3 dB at each of the three measurement points, or approximately a halving of the noise energy. The noise reduction at specific points will vary substantially among aircraft types. For those aircraft that weigh more than 75,000 pounds, the allowable noise level would increase in accordance with established Part 36 formulae based on aircraft weight. To date, no ICAO member nations have established rules to require that aircraft fleets meet these noise standards. However, such rules may be established in future years. Therefore, in recognition of the FAA's guidance to base suggested restrictions on specific noise levels, and in keeping with the goal of this project to "or significantly reduce" nighttime flight noise at Burbank Airport, the following measure is recommended for evaluation as a less-restrictive alternative during Phase 2 of the Part 161 study:

Implement a curfew at Burbank Airport between the hours of 10 p.m. and 7 a.m. on all flight operations by aircraft that have certificated Part 36 aggregate noise levels in excess of 271 EPNdB, based on FAA Advisory Circular 36-1G (and updates thereto), excepting that activity for which exceptions are provided under the preferred alternative.

In contrast to the proposed "Stage 4" standards for all aircraft, recommended Measure LRA-2 proposes a noise level limit for all aircraft that would be based upon the "Stage 4" levels proposed to be established for the certification to aircraft weighing 75,000 pounds or less. These "Stage 4" standards are lower than those standards proposed for larger

aircraft. If the measure were implemented, only the lightest versions of Stage 3 B-737s and B-757s could meet the limit. No MD-80s, A319s, A-320s, or retrofit air carrier aircraft could meet the limit without modification. Among general aviation aircraft, all Stage 2 business jets and the Stage 3 Beechjet would be restricted at night, unless modified. These would constitute the loudest flights currently present at the airport at night. **Table 4** indicates the potential effect of the imposition of a ban on such aircraft during the hours between 10 p.m. and 7 a.m.

Table 4

**Average Nightly Operations Forecast to be Eliminated
by a Curfew on Aircraft Exceeding ICAO Chapter 4 (Part 36, Stage 4) Noise Levels**

"ICAO Chapter 4/75K" Alternative Aircraft User Group	2003		2008		2015	
	Takeoffs	Landings	Takeoffs	Landings	Takeoffs	Landings
Air Carrier Jets	2.3	3.0	3.2	4.2	6.1	5.7
Large Cargo Jets	0.0	0.6	0.0	0.6	0.0	0.7
Small Cargo Jets	0.0	0.0	0.0	0.0	0.0	0.0
Cargo Props	0.0	0.0	0.0	0.0	0.0	0.0
Stage 2 GA Jets	0.2	0.4	0.1	0.3	0.1	0.2
Stage 3 GA Jets	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
GA Props and R/C	0.0	0.0	0.0	0.0	0.0	0.0
Total Operations	< 2.5	< 4.1	< 3.4	< 5.2	< 6.3	< 6.7

Source: Landrum & Brown evaluation of "Draft Forecast of Aviation Activity Without Proposed Operating Restrictions", Oct. 2001

This alternative does not have the impact that would be achieved by alternatives that restrict all operations, but it would remove the loudest aircraft from the nighttime operating fleet. If all nighttime operations by aircraft that exceed the "Chapter 4" noise levels for the 75,000 pound aircraft were eliminated, the effective result would be a reduction of approximately 21 in the area within the 65 CNEL contour.

Should the cost-benefit assessments (to be conducted during Phase 2 of the Part 161 study) prove this less restrictive alternative to be unacceptable, it is recommended that its component parts be evaluated separately. This would result in study the following two less-restrictive sub-alternatives:

- Curfew on aircraft exceeding the aggregate Part 36 certificated Stage 3 noise level for aircraft weighing 75,000 pounds or less (281 decibels of Effective Perceived Noise [EPNdB]), or,
- Curfew on those aircraft exceeding an aggregate certificated noise level of ten (10) less than the EPNdB levels set forth by Part 36 for Stage 3 aircraft of comparable weight.

Regardless of the modification adopted, revision Rule 9 of the Airport Noise Abatement Rules will be required to update it to utilize currently published noise level information.

- **Time Sensitivity Approach to Restrictive Alternatives**

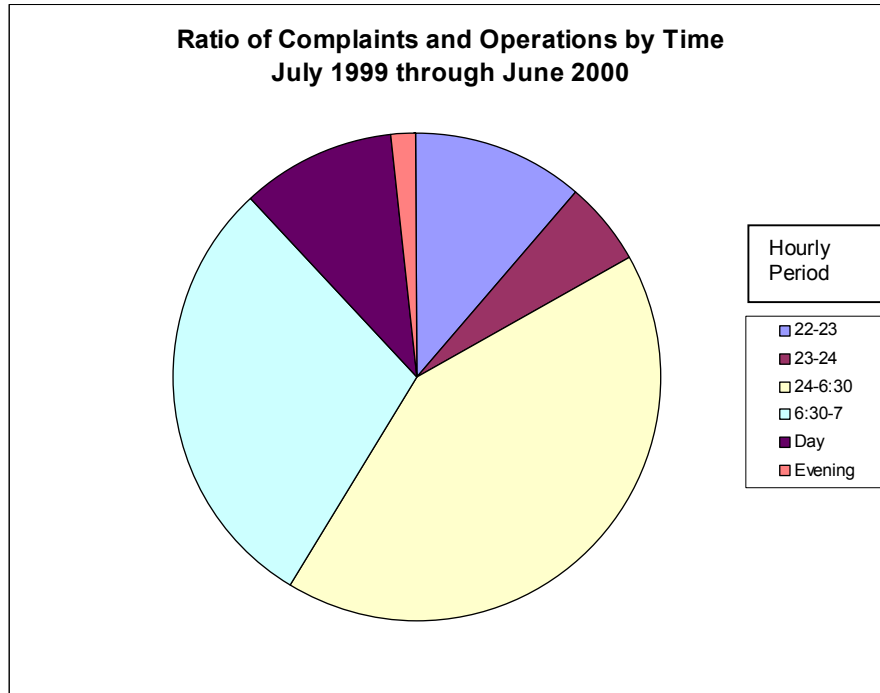
It is recommended that during the preparation of the analyses of benefit and cost, to be conducted during Phase 2 of the Part 161 Study, the sensitivity of the preferred and less-restrictive alternatives to adjustments of the curfew period be evaluated. The preferred and less-restrictive alternatives described above are recommended for evaluation during the full 10 p.m. to 7 a.m. period subject to the extra 10-decibel weight in computing CNEL levels and identified by traditional rules at the airport.

An evaluation of the time variation in noise complaints for the period between July 1999 and June 2000 indicated that there is a significant difference in the number of complaints received per operation for different periods of the night. Prior to midnight, the number of complaints per flight is much less than between midnight and 7 a.m. Four alternative time periods were evaluated to determine the period when a curfew would be most responsive to the complaints received. As is indicated on the following graph (**Figure 1**), the ratio of complaints to operations is essentially equal during the daytime and the first hour of the night (10 p.m. to 11 p.m.)

Between 11 p.m. and midnight, the ratio of complaints to operations is about half that of the first hour of night. Notably, the period between midnight and 6:30 a.m. has about four times as many complaints per operation as the daytime period, and the period between 6:30 a.m. and 7 a.m. has about three times as many complaints per operation as the daytime hours. This information indicates that a curfew applied during the period between midnight and 7 a.m. may address the greatest concern expressed through noise complaints in the community.

The evaluations conducted during Phase 2 will include discussions with users as to their anticipated reaction to the proposed restrictive measures and will attempt to ascertain the sensitivity of these reactions to the hours of the curfew. The Phase 2 analysis will also examine whether having a mandatory curfew from midnight to 7 a.m. would affect compliance with the voluntary curfew and might lead to an increase in operations between 10 p.m. and midnight.

Figure 1



Complaint Ratios		The Complaint Ratio indicates the relationship between the number of complaints that occur during each period of the 24-hour day and the number of operations that occur during the same period. It indicates the number of complaints per 100 operations. The ratio provides a measure of the demand for a curfew, as reflected by the temporal distribution of complaints recorded against operations.
Hours	Number	
22-23	0.697	
23-24	0.356	
24-6:30	2.567	
6:30-7	1.825	
Day	0.643	
Evening	0.096	

NON-RESTRICTIVE ALTERNATIVES

Part 161 requires that all feasible approaches to reducing noise impacts be investigated and documented as part of the application for the FAA's approval of an airport access restriction. To meet this requirement, the alternatives investigated during the Part 150 planning process as they might be applied to the nighttime hours were revisited in the following section. Additionally, non-restrictive measures that may have been rejected as having too great an impact on operations or capacity for acceptance during the Part 150 analysis were also identified for inclusion in this Part 161 study.

Adopted Noise Control Measures

The baseline conditions of the Part 161 analysis incorporate approved departure turn measures of the 1999 Part 150 Noise Compatibility Program (NCP), as well as those measures that have been in place for noise abatement at the Airport prior to approval of the Part 150 NCP measures. The approved NCP included measures separated into four elements – noise abatement, noise mitigation, land use planning and program management. The Part 150 NCP noise program measures are listed in **Appendix A**.

Rejected/Discarded Part 150 Operational Alternatives

During the Part 150 planning process, two non-restrictive operational measures were evaluated and rejected from incorporation into the final plan. These are:

- Runway 26 and 33 nighttime preferential departure use
- Runway 26 and 33 nighttime preferential departure use with noise abatement turns

A third, the implementation of a voluntary nighttime preferential runway use for takeoffs from Runway 26 was adopted into the Part 150 Noise Compatibility Program.

While each of these three actions results in an improvement of total impacts over Part 150 baseline conditions, the combined use of both Runway 26 and 33 for departures at night was rejected as being less effective than the nighttime preference of Runway 26 alone and as exposing new populations to noise above 65 CNEL.³ The Part 150 Study evaluated the use of both runways for preferential runway use at night under the rules of a Voluntary Runway Use Program under FAA Order 8400.9. This means that the pilot remains in command of his/her runway selection and may opt for use of another runway (such as Runway 15).

Further evaluation of the actions necessary to implement the adopted preferential runway use program for departures from Runway 26 at night discloses certain problems not addressed by the Part 150 program. First, it does not appear that the extension of Taxiway D to the east end of Runway 8-26, necessary prior to the implementation of the

³ One of the critical criteria for evaluation of the effectiveness of a noise abatement measure for Part 150 purposes is that it not expose new populations to increases of noise above 65 CNEL. This criteria is not a requirement of the FAA under Part 161 evaluations, where the critical criteria is whether the measure will allow continued operation of the airport in lieu of the proposed restriction and still achieve the same noise impact reduction as the preferred measure.

program, will occur in the foreseeable future, owing to the necessity to replace Parking Lot A, now existing in the area of the proposed taxiway.

Additionally, all three of the preferential runway use measures addressed by the Part 150 program would reroute nighttime operations from areas south of the airport to areas west or north of the airport, likely resulting in a reduction in the total number of persons exposed to noise above 65 CNEL. While beneficial for noise abatement, the action is also in contradiction of the intent of Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations" (February 11, 1994). The areas to the north and the west of the airport are poorer and house greater numbers of ethnic minority and economically disadvantaged populations than the area to the south of the airport. The Executive Order prohibits federal actions that would unjustly redistribute a disproportionate share of environmental impacts onto such disadvantaged areas. It is unlikely that such actions could stand against a test of such measures if challenged in court.

Non-Restrictive Measure Recommended for Study

One measure has been identified that may potentially achieve the reduction of noise impacts comparable to the reductions achievable through the imposition of the preferred alternative or the less-restrictive alternatives, but through non-restrictive means.

- **NRA-1:** Accelerate acoustical treatment of all residences within the Part 161 baseline 2003 CNEL 65 contour to be completed by the end of 2005

Sound insulation is very effective in attenuating outdoor noise levels, although it is only effective if windows and doors are closed. Because the Airport Authority's acoustical treatment program includes the installation of air conditioning, it is practical for people to keep their windows closed and also remain comfortable when they want quiet in their homes. Local residents have often expressed the view that they do not like the idea of sacrificing the fresh air they can enjoy with open windows in their temperate climate in order to have peace and quiet. On the other hand, when viewed as a way of keeping out nighttime noise intrusion when they are trying to sleep, it is reasonable to think that many people would consider this option very valuable. From this standpoint, acoustical treatment can be viewed as an alternative that may promote the partial fulfillment of the Airport Authority's stated goal: "to ... **or significantly reduce** nighttime flight noise".

A disadvantage of acoustical treatment, when weighed against a curfew as a way of reducing nighttime noise is that it is only effective in the homes that are treated. A curfew, or other airport operational restriction, would reduce noise with or without closed doors and windows, not only inside the CNEL 65 contour, but outside the designated impact area as well. It would also be necessary to complete the acoustical treatment of the residences within the Part 161 baseline CNEL 65 contour area for 2003 in approximately the same timeframe as the imposition of the curfew for it to be an effective alternative to that curfew.

The Airport Authority has undertaken a program of acoustic treatment within an area defined by a combination of the 65 CNEL contours of the approved 1989 and 2000 Part 150 Studies. This area is larger than the area currently exposed to 65 CNEL according to

the latest Quarterly Noise Report to the State of California. It is also larger than the area projected to fall within the baseline 65 CNEL contour for the year 2003 for the Part 161 Study. According to current records, by October 2001, a total of 259 residences had been acoustically treated, and an additional 206 units are in the process of being treated. Although the impact area is shrinking, the Airport Authority remains committed to the completion of the acoustical treatment of an estimated total of 5,244 dwellings within the established program boundaries by 2015.

Under the FAA's current interpretation of the area impacted by significant noise, those homes that are outside the identified 2003 Part 161 CNEL 65 baseline contour would receive no benefit for Part 161 purposes, if treated. Approximately 650 untreated residences remain within the projected 2003 CNEL 65 contour. Under an accelerated program, these residences would be completed by 2005, at a potentially increased program cost (in terms of net present value) because expenses will occur in earlier years. Judicious prioritization of the areas to be acoustically treated may eliminate any potential cost increases to the program. It is important to note that the acoustical treatment of residences within the 65 CNEL contour is intended to make these structures compatible with airport noise.

The analysis of an accelerated acoustical treatment program will include two comparisons: the difference in benefits and costs between the unchanged treatment program and an accelerated program for those structures within the Part 161 baseline 2003 CNEL 65 contour, and between this accelerated program and the restrictive alternatives. The comparison between the accelerated treatment program and the restrictive alternatives will address the fact that the benefits of sound insulation are limited to interiors, while the benefits of restrictive alternatives also reduce exterior noise impacts.

SUMMARY

It is recommended that the evaluation of alternatives under Phase 2 of the Part 161 Study include the preferred curfew to eliminate all flight operations during the nighttime hours, as well as two less-restrictive alternatives based on type of aircraft operation, aircraft weight, and certificated noise levels. Additionally, non-restrictive measures to address operational opportunities (preferential runway use and accelerated sound insulation mitigation) are recommended for further evaluation and comparison with the costs and benefits of imposing the preferred alternative. The specific measures recommended for inclusion in Phase 2 are:

RA-1: Full Curfew -- Enact a curfew on all aircraft flight operations at Burbank Airport between the hours of 10 p.m. and 7 a.m., excepting medical emergency flights, police, fire, military and disaster relief flights, and flights delayed beyond the control of the operator. (The preferred alternative)

LRA-1: Departure Curfew -- Enact a curfew on all aircraft departure operations at Burbank Airport between the hours of 10 p.m. and 7 a.m., excepting medical emergency flights, police, fire, military and disaster relief flights, and flights delayed beyond the control of the operator.

LRA-2: Curfew on Aircraft With Certificated Aggregate Noise Levels Greater than 271 EPNdB -- Enact a curfew on all operations at Burbank Airport by aircraft certificated as having aggregate noise levels (the sum of approach, takeoff, and sideline measured levels) in excess of 271 EPNdB between the hours of 10 p.m. and 7 a.m., excepting medical and other emergency flights, police, fire, military and disaster relief flights, and flights delayed beyond the control of the operator.

It is anticipated that the benefit-costs assessments, to be conducted during Phase 2 of the Part 161 study, may suggest variations of time sensitivity or application to result in a more supportable finding for a restrictive alternative. These evaluations will be subject first to the results of the evaluations of the measure as stated, and then if appropriate, a decision will be made to further evaluate the sensitivity of that measure to adjustments.

Table 7 compares the number of operations and potential surface area effects of the various restrictive alternatives.

Table 7
Comparison of the Estimated Effects of Restrictive Alternatives
During the Year 2015, Based on Draft Operational Forecasts

Aircraft User Group	RA-1		LRA-1		LRA-2	
	T/O	LDG	T/O	LDG	T/O	LDG
Air Carrier Jets	6.1	5.7	6.1	0.0	6.1	5.7
Large Cargo Jets	0.0	0.7	0.0	0.0	0.0	0.7
Small Cargo Jets	0.0	0.0	0.0	0.0	0.0	0.0
Cargo Props	14.9	11.2	14.9	0.0	0.0	0.0
Stage 2 GA Jets	0.1	0.2	0.1	0.0	0.1	0.2
Stage 3 GA Jets	3.1	4.1	3.1	0.0	< 0.1	< 0.1
GA Props and R/C	1.2	1.5	1.2	0.0	0.0	0.0
Total Operations	25.4	23.5	25.4	0.0	< 6.3	< 6.7
Approximate Area of Reduction from Base	35%		25%		21%	

Source: Landrum & Brown evaluation of "Draft Forecast of Aviation Activity Without Proposed Operating Restrictions", Oct. 2001

The non-restrictive alternative recommended for further evaluation is:

NRA-1: Accelerated Acoustical Treatment-- Accelerate acoustical treatment of approximately 650 residences remaining to be treated within the 65 CNEL of the Part 161 baseline 2003 noise contours by the end of 2005.

Appendix A
Part 150 Noise Compatibility Program Measures
Burbank-Glendale-Pasadena Airport

Part 150 Noise Compatibility Program Measures

The following measures were included in the Airport's 1999 Part 150 Noise Compatibility Program update, adopted by the Airport Authority in 2000, and approved by the Federal Aviation Administration in its Record of Approval, dated November 27, 2000.

Noise Mitigation Element

1. Continue requiring all transport category and turbojet aircraft to comply with Federal aircraft noise regulations. – APPROVED
2. Continue requiring compliance with the Airport's Engine Test Run-Up Policy. -- APPROVED
3. Continue promoting use of AC 91-53A Noise Abatement Departure Procedures by air carrier jets. – APPROVED AS VOLUNTARY ONLY
4. Continue promoting use of NBAA noise abatement procedures, or equivalent manufacturer procedures, by general aviation jet aircraft. -- APPROVED AS VOLUNTARY ONLY
5. Continue working with the FAA Airport Traffic Control Tower to maintain the typical traffic pattern altitude of 1,800 feet MSL. - APPROVED AS VOLUNTARY ONLY
6. Continue the placement of new buildings on the airport north of Runway 8-26 to shield nearby neighborhood from noise on runway. -- APPROVED
7. Designate Runway 26 as nighttime preferential departure runway. -- APPROVED AS VOLUNTARY ONLY
8. Establish noise abatement departure turn for jet takeoffs on Runway 26. – NO ACTION TAKEN, pending review for airspace acceptability
9. Build extension of Taxiway D to promote nighttime general aviation departures on Runway 26. – APPROVED
10. Build engine maintenance run-up enclosure. – APPROVED
11. Phase-out operations by all Stage 2 jets. – DISAPPROVED, pending submission of additional information and compliance with Part 161
12. Establish a mandatory curfew on departures by all Stage 2 aircraft between 10:00 p.m. and 7:00 a.m., departures by all aircraft over 75,000 pounds between 10:30 p.m. and 6:30 a.m., and arrivals by all aircraft over 75,000 pounds between 11:00 p.m. and 6:00 a.m. – DISAPPROVED, pending submission of additional information and compliance with Part 161

Noise Mitigation Element

1. Continue existing acoustical treatment program for single-family homes. – APPROVED
2. Expand residential acoustical treatment program to include homes within 65 CNEL contour based on 2003 NEM. – APPROVED
3. Establish acoustical treatment program for schools and preschools not previously treated within the 65 CNEL contour based on 2003 NEM. – APPROVED
4. Offer purchase assurance as an option for homeowners in the acoustical treatment eligibility area. – APPROVED IN PART, excepting purchase and resale for noncompatible uses

Land Use Planning Element

1. Use Baseline 2010 noise contours as basis for noise compatibility planning (Burbank and Los Angeles). – APPROVED
2. Establish noise compatibility guidelines for the review of development projects within the 65 CNEL contour (Burbank, Los Angeles). – APPROVED
3. Amend Sun Valley-La Tuna Canyon Community Plan to establish infill development standards for noise compatibility (Los Angeles). -- APPROVED
4. Amend North Hollywood-Valley Village Community Plan to establish land use policies promoting airport noise compatibility (Los Angeles). -- APPROVED
5. Establish airport noise overlay zoning to implement infill development policies of local General Plans (Burbank, Los Angeles). -- APPROVED
6. Amend building codes to establish sound insulation construction standards to implement requirements of State law and infill development policies (Burbank, Los Angeles). -- APPROVED

Program Management Elements

1. Continue noise abatement information program. -- APPROVED
2. Monitor implementation of updated Noise Compatibility Program. -- APPROVED
3. Update Noise Exposure Maps and Noise Compatibility Program. -- APPROVED
4. Expand noise monitoring system. – APPROVED, excepting use of monitoring equipment for enforcement of noise level standards

5. Enhance Airport Authority's geographic information system. --
APPROVED

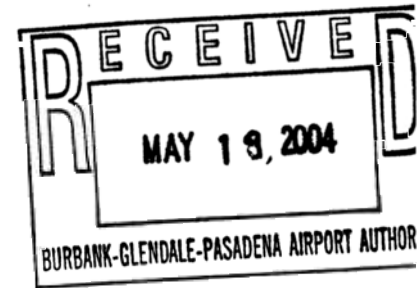
6. Maintain log of nighttime runway use and operations by aircraft type. --
APPROVED



U.S. Department
of Transportation
**Federal Aviation
Administration**

Mr. Max A. Wolfe
Chief Operating Officer
Landrum & Brown
11279 Cornell Park Drive
Cincinnati, OH 45242

MAY 19 2004



Dear Mr. Wolfe: *Max*

This is in response to your October 7, 2003, request to me for Federal Aviation Administration (FAA) guidance. You asked us to review the October 7 draft analysis entitled "Evaluation of a Curfew at Burbank-Glendale-Pasadena Airport" ("Draft Evaluation"). You asked for guidance on two issues; one regarding whether the rationale would affect possible FAA approval of the proposal, and the second regarding possible conflicts with our policy.

I apologize for the length of time it has taken to provide you a response. The Part 161 Review Team, consisting of several offices within the FAA, has taken a hard look at the documentation you submitted, along with past information your firm has provided related to this proposal. Any changes to your analysis, and more complete Part 161 documentation, could affect our comments.

The Draft states that the Burbank-Glendale-Pasadena Airport Authority (Airport Authority) is proposing a "full curfew on night operations" at the (recently renamed) Bob Hope Airport (BUR). Of the restrictions your firm has informally discussed with us in past meetings, this is the Airport Authority's preferred restriction alternative.

Based on our review of the limited information presented on a "full curfew" restriction on all aircraft types, this proposal would not be consistent with the statutory requirements that a restriction be reasonable, nonarbitrary, and nondiscriminatory. Also, it appears to us that the benefit/cost analysis would not support the proposed restriction.

We have identified certain issues that raise specific concerns. The nighttime noise of large commercial aircraft at Bob Hope Airport has, to a great extent, been controlled by an existing voluntary air carrier curfew. Your Draft Evaluation points out that the voluntary curfew has a compliance rate of approximately 97%. This voluntary curfew reduces the magnitude of the nighttime noise problem and commensurately raises the

bar in terms of evidence that will be required to justify the need for, and benefits, of a mandatory curfew.

Smaller, quieter aircraft also operate at the airport during curfew hours. Restriction of these aircraft may not contribute measurably to reducing either the noise contour or sleep awakenings. If the evidence does not warrant their restriction at night, a full curfew would be unjustly discriminatory. The FAA would expect to see more analysis of these aircraft types to show the proposed restriction would not unjustly discriminate against them.

We thought it would be helpful to identify the particular statutory conditions, as defined in greater detail in Part 161, that cause issues to be raised with regard to the full curfew proposal and rationale. We have concerns about the proposal satisfying four of the six statutory conditions.

The first statutory condition requires that a restriction be reasonable, nonarbitrary, and nondiscriminatory (49 U.S.C. § 47524 (c)(2)(A), 14 C.F.R. §161.305(e)(2)(i)). Essential information needed to demonstrate this condition includes, but is not limited to, evidence that other available remedies are infeasible or would be less cost-effective, including descriptions of other restrictive and non-restrictive alternatives that have been considered and rejected, descriptions of measures proposed under Part 150 that were not implemented and reasons for rejecting or not implementing other measures.

The second statutory condition relates to the burden on commerce and, as implemented in Part 161, requires as "essential information" a benefit/cost analysis. The analysis must show the estimated potential benefits of the restriction have a reasonable chance to exceed the estimated potential cost of the adverse effects on interstate and foreign commerce (49 U.S.C. § 47524 (c)(2)(B), 14 C.F.R. §161.305(e)(2)(ii)).

The fourth statutory condition requires that the restriction not conflict with any existing Federal law or regulation, including Federal grant agreements (49 U.S.C. § 47524 (c)(2)(D), 14 C.F.R. §161.305(e)(2)(iv)).

The sixth statutory condition requires that the proposed restriction not create an unreasonable burden on the national aviation system based on evidence, including an analysis demonstrating that nonaircraft alternative measures to achieve the same goals as the proposed restriction are inappropriate (49 U.S.C. § 47524(c) (2)(F), 14 C.F.R. § 161.305(e)(2)(vi)).

Together, these criteria require a proposal for a restriction on airport use to be justified by a demonstrated noise problem and the existence of noncompatible land uses. The proposed restriction must be effective in addressing the identified problem and be supported by evidence that other available remedies are infeasible or would be less cost-effective. It must not be unjustly discriminatory against any class of aviation user. It must reflect a balanced approach under which the potential

benefits reasonably exceed the potential burden on commerce and that fairly considers both local and Federal interests. Some of the statutory criteria place airport use restrictions in the context of measures of last resort, rather than first response, for mitigating aircraft noise. The statute reflects the national interest in maintaining the efficiency and capacity of the national air transportation system and ensuring that Federally-funded airports maintain reasonable public access.

Further detailed discussion of the FAA's review is included in the enclosure. The conclusions in this letter of course refer only to the proposed full curfew. We understand that a substantial number of residences are located within the CNEL 65 dB contour at Bob Hope. We also understand that the Airport Authority will continue to be interested in seeking ways to mitigate the actual impacts of aircraft noise on the community including, as you discussed with us previously, other types of restrictions. The FAA made a commitment at the start of the Part 161 study process to be available to work informally with you and local representatives. We would like to continue to work with you as we have in the past to identify potential viable means for noise mitigation.

We trust these comments will serve as a guide as you consider other options. Please feel free to contact me at any time to arrange future meetings.

Sincerely,



Victoria L. Catlett
Community and Environmental
Needs Division, APP-600
Office of Airport Planning and
Programming

Enclosure

cc: Richard Simon

Enclosure – Discussion of FAA Concerns
October 2003 BUR Draft Evaluation

Incomplete Information:

As indicated in the incoming letter and section 1 of the Draft Evaluation, “[m]any elements of the forthcoming [14 C.F.R. Part 161] application are not included in this documentation, including the six tests required for approval, a benefit/cost analysis of the other viable alternatives, documentation of public involvement and stakeholder consultation, and the environmental analysis.” As a result, the FAA’s guidance is preliminary and partial. Any changes to your analysis, as well as more complete Part 161 documentation, could affect our comments.

Statutory Conditions:

The FAA regulations implementing the Airport Noise and Capacity Act, 14 C.F.R. Part 161, allow airport owners to select a preferred restriction alternative. If each of the statutory conditions for approval is met, then the FAA may approve the restriction as proposed by the airport. If the restriction does not fully satisfy these conditions for approval, the airport owner may request that the FAA approve part of the restriction, or an alternative restriction, that would meet these six statutory conditions for approval. (See §§ 161.305 and 161.311.) In sum, the Airport Authority could propose and the FAA could approve a full nighttime curfew *only if* the Airport Authority is able to provide “substantial evidence” that the curfew restriction meets *each* of the six statutory conditions (49 U.S.C. § 47524(c)(2), 14 C.F.R. §161.305(e)(2)). For restrictions on Stage 3 aircraft, these conditions effectively incorporate the Airport Authority’s obligations under Airport Improvement Program grant assurances, 49 U.S.C. § 47107(a), and the FAA will review the proposed restriction for both ANCA and grant compliance as part of the same review. The FAA’s comments regarding the statutory conditions of concern are contained in the body of the letter to which this enclosure is attached.

Rationale Provided in the Draft Evaluation:

Your stated Part 161 study goal in section 5.2 of the Draft Evaluation is “to eliminate or significantly reduce nighttime flight noise at Burbank Airport, now and in the future.” The Draft Evaluation’s rationale for a full curfew appears to be based upon three issues: California State law requirements, nighttime noise, and residential property values.

Section 5.1 of the Draft Evaluation refers to the State of California’s requirement that airport proprietors with a defined “noise problem (incompatible land uses within the 65 CNEL contour)” develop noise programs to “reduce and ultimately eliminate” the noise problem. You state that proprietors of airports with noise problems are permitted to operate the airport only if they obtain a State variance. You also state that the Airport Authority is operating under a variance issued on September 25, 2002, effective for

FROM

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three years. The information you presented to show that a nighttime restriction would be consistent with state requirements includes:

- a. Projections of baseline noise contour increases to the west and south over time as the number of operations increases. Section 6.3, page 11.
- b. Notable decrease of the noise contours (that is, smaller than for the baseline case in each study year) with a nighttime curfew. Section 6.3, page 11.
- c. Decline in the number of homes within the 65 CNEL contour (that is, decreasing from 1,262 to 502 in 2015) with a curfew. Section 6.3, page 13.
- d. Deferred requirements for acoustical treatment of noise-sensitive land uses around the airport. Section 7.2.3, page 20.

The rationale related to the problem of nighttime flight noise at Bob Hope Airport is based on the following:

- a. Decline in potential awakenings, decrease in sleep disturbance, and improvement of quality of sleep. Sections 7, 7.1, 7.2, and 7.5, pages 13, 14 and 27.
- b. Decline in noise disturbance for people spending time in enjoying out-of-doors during the early night, late evening, and early morning hours. Sections 7.1 and 7.5, pages 14 and 27.
- c. Feedback from the citizenry. (The Draft Evaluation notes citizens "expressing a desire to impose a curfew on all nighttime operations." It notes "intense public concern about the noise from operations at BUR." And it states that "nighttime activity generates complaints more than three times as frequently as daytime operations and more than 20 times as frequently as evening operations.") Section 5.1, pages 4-5.

There is an obvious connection between the CNEL contours and nighttime noise. Changing the nighttime noise environment would also be a way to change the CNEL contour, because the CNEL metric heavily weights nighttime noise.

Rationale related to diminution in residential property values in high-noise areas is contained in Section 7.2.2., page 16, "Property Value Recovery".

Cost-Benefit and Supplemental Analyses:

The Airport Authority has selected the 65 CNEL contour, consistent with California law, to define its noise impacted area. The study then inappropriately uses supplemental metrics to change the noise study area for analysis purposes beyond the

boundaries of the 65 CNEL. There is not enough scientific study to relate awakenings to impacts on a single event basis and to define a noise-impacted area on this basis. There is also an inadequate basis for using complaint data to define a noise-impacted area. The noise study area should remain constant and consistent for purposes of contour changes, calculations of noncompatible land uses and impacted people, and any supplemental analyses. With respect to awakenings, the Federal Interagency Committee on Aviation Noise (FICAN) 1997 sleep disturbance relationship only predicts the maximum percent of the exposed population expected to be behaviorally awakened. The Draft Evaluation uses this percentage to calculate total number of awakenings by assuming a simple direct relationship between number of events and number of awakenings. Estimates of sleep awakenings are probably not strictly additive since two or more such events in close proximity are unlikely to equal two awakenings. The FICAN report does not address this issue, and the research in this area is limited. Rather than trying to place a value on each awakening, it may be more useful to estimate the number of residents adversely affected by nighttime noise and develop a cost by affected resident.

We have several more detailed comments on the calculations of benefits and costs. We understand it is your preference to discuss these details in a meeting.



U.S. Department
of Transportation
**Federal Aviation
Administration**

Associate Administrator
for Airports

800 Independence Ave., SW.
Washington, DC 20591

JUN 12 2008

Part 161 Comment Docket
Burbank-Glendale-Pasadena Airport Authority
Bob Hope Airport (BUR)
2627 Hollywood Way
Burbank, CA 91505

The Federal Aviation Administration (FAA) has reviewed the draft benefit cost analysis the Burbank Glendale Pasadena Airport Authority (BGPAA) made available for public comment.

We thank the BGPAA for providing an extension of time for all commenting parties to review the extensive documentation prepared in support of the proposed full curfew and alternative restrictions. Under 14 Code of Federal Regulations (C.F.R.) Part 161, section 161.307, we are requesting a full set of docket comments once the docket has closed.

The Part 161 process includes consultation with many parties, including the FAA. We want to clarify that these comments are *not* the FAA's final decision under 14 C.F.R. Part 161, section 161.311. The FAA's participation during the Part 161 notice and comment period is to provide guidance to airport sponsors so they are not proposing a noise or access restriction that could violate Federal law. Because this is a Stage 3 restriction proposal, we also are providing our comments on whether the draft benefit cost analysis supports the six statutory conditions for approval.

When Congress passed the Airport Noise and Capacity Act of 1990 (ANCA), Congress found that aviation noise management is crucial to the continued increase in airport capacity. Further, Congress indicated ANCA was intended to address uncoordinated and inconsistent restrictions on aviation which could impede the national air transportation system. ANCA sets a very high bar. A curfew at an airport, when there are other mitigation options available, is the type of access restriction Congress intended ANCA to address.

Based on our review of the proposed restrictions and the Benefit Cost Analysis (BCA), the BGPAA has followed 14 C.F.R. sections 161.301 and 161.303. However, the proposal as structured does not meet the six statutory conditions for approval, set forth in section 161.305, based on everything we have reviewed and considered to date. This is explained in detail in our enclosed comments.

In light of the FAA's assessment at this stage, an environmental assessment should be prepared if BGPAA decides to continue through the Part 161 process prescribed for a proposed mandatory restriction on Stage 3 aircraft. The proposed restriction would generate noise and air quality impacts at other nearby airports, and is likely to be controversial on environmental grounds. Some of the airports to which the operations are proposed to shift already operate under a static noise variance, and the

vicinity already is in nonattainment for certain air quality standards. Because of these potential impacts, we believe an environmental assessment should be prepared to address the requirements of the National Environmental Policy Act.

We recognize the BGPAA has been working actively to improve the noise environment at BUR for many years. We have had many opportunities over the years to discuss mitigation strategies with you. We have funded and approved noise compatibility planning studies, and provided grants totaling \$75.5 million for sound attenuation. We remain committed to working with BGPAA to address these important local environmental issues. In reviewing the documentation thus far, we were pleased to see the draft benefit cost analysis demonstrates BGPAA can fully achieve compatibility around the airport without a restriction, through completion of its long-standing sound attenuation program, and possible new Area Navigation (RNAV) procedures.

We would be more than happy to meet with BGPAA representatives to discuss accelerating BUR's sound attenuation program and examining the feasibility of an RNAV for noise abatement.

Sincerely,



D. Kirk Shaffer
Associate Administrator
for Airports, ARP-1

Enclosure

COMMENTS OF THE FEDERAL AVIATION ADMINISTRATION
ON THE PROPOSED CURFEW AT BOB HOPE AIRPORT, BURBANK, CA

The proposed curfew does not meet several of the six statutory conditions for approval at 161.305.

Condition 1 – The restriction is reasonable, nonarbitrary, and nondiscriminatory.

- **Insufficient evidence of projected noise problem or reasonableness of a noise restriction**

Burbank essentially makes the argument that it has established a goal to eliminate nighttime aircraft noise, that projected aviation growth will cause more commercial aircraft operators to ignore the airport's existing voluntary nighttime curfew and increase nighttime noise, and that restricting aircraft operators to day and evening service only at BUR and diverting nighttime flights to other airports is cost-beneficial compared to sound insulating homes around BUR. The FAA does not find this argument to provide reasonable justification for a local noise restriction.

BUR plays an important role in the system of commercial service airports in southern California. BUR manages its impact on community noise with a combination of measures, including a sound insulation program and a voluntary nighttime curfew on commercial airlines which is honored with few exceptions. BUR has not made a convincing argument of unacceptable growth of a nighttime noise problem that cannot and should not be cost-effectively managed with a continuation of existing measures. BUR's assumption that aviation growth will cause sizeable increases in aircraft noise during nighttime hours due to more air carriers' scheduling arrivals and departures within that time frame is not supported by information within the Part 161 study, which notes that all new flights to date, with one exception, have been scheduled to conform to the existing voluntary curfew since it is a well established practice at the airport for airlines to try to do so.

Alternatively, if one accepts BUR's forecasts of increased nighttime demand that increasingly undermines the current voluntary curfew, then BUR's analysis of ramifications on neighboring southern California airports and the national system is insufficient and underestimated. BUR would close its own nighttime airport capacity and export its projected nighttime activity and noise to other airports. The adverse effects of this strategy would continue to worsen in each successive year beyond BUR's outlook to 2015, since they are linked with aviation growth.

BUR, without sufficient rationale, has arbitrarily established a goal to eliminate nighttime aircraft noise. Such a goal could be adopted at any time by any commercial service airport in the national airport system. It is self-fulfilling; that is, when the problem is pre-defined as the need to eliminate nighttime noise, the solution will be pre-determined to be an airport restriction. BUR's proposal is the type of restriction on the national air transportation system that Congress intended to remedy with the noise and access restriction requirements in the Airport Noise and Capacity Act of 1990.

COMMENTS OF THE FEDERAL AVIATION ADMINISTRATION
ON THE PROPOSED CURFEW AT BOB HOPE AIRPORT, BURBANK, CA

- **There is inadequate consideration given to non-restrictive alternatives**

The BGPAA's pre-defined goal to eliminate all nighttime noise assures that inadequate consideration and weight are given to significantly reducing nighttime noise by a non-restrictive means, e.g., continuation of the sound insulation program. If immediate noise reduction is the BGPAA's justification for the curfew, any measure short of that becomes de facto ineffective. The BCA downplays the effectiveness of the acoustic program, yet discusses the costs associated with continuing the acoustic plan through 2015.

Since 1985, the number of noise impacted dwellings in the CNEL 65 dB noise contour at BUR has been reduced from a high of 4,700 to 440. The BGPAA states that forecast increases in operations could raise the number to 1,260 by 2015 (from Chapter 5, or 2,069, as stated in Chapter 4); hence the justification to immediately and completely restrict nighttime operations. However, the BGPAA states in Chapter 4 the sound attenuation program could treat 259 dwellings per year. This would more than compensate for a 117 dwellings-per-year rate of increase in noise impacted homes (Chapter 5) because of forecast growth in operations by 2015. Regardless of which figures are used, continuation of the sound attenuation program would eliminate incompatible dwellings by 2015.

The study does not explain why the variance for BUR requires a progress report on the Part 161 study. The study implies California law mandates that the Airport Authority undertake this Part 161 Study. However, it is our understanding that other types of mitigation may be used at BUR to meet the state's variance criteria. Since sound attenuated houses are compatible, this would be one "acceptable degree" of mitigation under California law.

Noise improvements using enhanced operational measures are not considered. According to the noise dispersion graphics, there is a narrow corridor of dispersion along the ILS Runway 8 final approach course and conversely, a wider swath of dispersion south of Runway 15. Runway 15 is the primary jet departure Runway. Jets depart Runway 15 on a conventional departure procedure, which accounts for the wide noise dispersion. If an RNAV Standard Instrument Departure (SID) could be implemented for Runway 15 departures, the result would yield a very narrow corridor of sound dispersion, resulting in a narrower noise footprint. This would reduce the noise impact and affect the BCA for the full curfew (and alternatives) proposal.

Chapter 5 states taxiway improvements would provide some noise relief, although the expected noise relief is not discussed, including whether it would affect the BCA.

- **The restrictions appear to be unjustly discriminatory**

Because some aircraft are significantly quieter than others, nighttime operation is not sufficient justification to ban all operations. There are concerns of unjust discrimination with respect to banning operators that produce minimal nighttime noise. The FAA has

COMMENTS OF THE FEDERAL AVIATION ADMINISTRATION
ON THE PROPOSED CURFEW AT BOB HOPE AIRPORT, BURBANK, CA

already provided this guidance, in our 2004 letter to BGPAA (included as Appendix H of the draft BCA).

In FAA's 2004 comments, we advised evidence was required of the quieter aircrafts' contribution to the noise problem BGPAA was trying to eliminate. Based on the information provided in the BCA, restricting the quietest aircraft is not justified.

Additional FAA comments with respect to unjust discrimination under grant agreement conditions are provided later under Condition 4.

Condition 3 – The proposed restriction maintains safe and efficient use of the navigable airspace

• **Impacts on the Air Traffic System**

Again, assuming the BUR analysis is on target with respect to increasing nighttime activity (10 pm to 7 am) that would need to divert to other airports, potential cumulative impacts on the local and national system have not been sufficiently addressed. Cumulative impacts would be further exacerbated if other local airports impose restrictions, as some are proposing to do.

Implementation of the BUR proposal would have additional impacts not mentioned in the Part 161 study. Southern California airspace is highly congested and complex. The terrain constraints limit the number of arrival and departure routes that can be utilized by multiple high volume airports. Additionally, many of the airports in Southern California already have restrictions in place which create additional congestion, particularly in the morning beginning at 7:00 am.

As an example, John Wayne/Orange County Airport (SNA) has approximately 15 or more air carrier jets scheduled for 7:00 am departure. Under ideal conditions, SNA can depart an air carrier jet about every minute and a half. Therefore, the last aircraft slated for a 7:00 am departure becomes airborne at or after 7:28 am. If weather becomes a factor, the actual departure exercise may be extended an additional 15 – 20 minutes.

Because the SNA curfew compacts departures into the 7:00 am time slot, parking at air carrier gates is a problem in the morning. At the start of each morning, all of SNA's gates are occupied and full, while another 15 jets are already staged on the airport awaiting openings at the filled gates. When an air carrier taxis out for departure, one of the 15 staged jets will fill the empty gate. Given the projected aviation growth in Southern California, a similarly congested scenario would likely be in BUR's future as a result of a curfew.

Ontario International Airport (ONT) would face the same situation if relocated BUR aircraft were pushed into the 7:00 am departure time slots. ONT already has numerous air carrier, props and turboprops vying for 7:00 am departures.

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ONT has a noise abatement policy which includes contra-flow from 10:00 pm to 7:00 am. In contra-flow, ONT arrivals land on Runway 26, while departures takeoff from Runway 8. Since the arrivals are placed head-on to departures, the airport's throughput is drastically reduced to ensure proper separation between arrivals and departures. Putting more BUR traffic into this mix, or adding any BUR aircraft to the ONT 7:00 am departure push, would further exacerbate throughput and will likely cause delays.

When other operators/air carriers have to divert flights to other local/regional airports, they also add to the departure rush because they need to restage the diverted aircraft back to the original destination airport.

If the air carrier's response to a BUR curfew is to depart during the densely populated 7:00 am departure queue, it increases the demand on the airspace at this busy time. The southern California airports roll their 7:00 am departures to several exit fix VOR, such as:

- o Gorman (GMN) for destinations like Seattle (SEA), San Francisco (SFO), and Honolulu (HNL).
- o Palmdale (PMD) for destinations like Las Vegas (LAS), Salt Lake City (SLC), and Chicago O'Hare (ORD)
- o Thermal (TRM) for destinations like Phoenix (PHX), Denver (DEN), Dallas (DFW), and Atlanta (ATL)

In general, BUR tends to lead the exodus for GMN & PMD as they are the northernmost airport. BUR departures are quickly followed by Los Angeles International Airport (LAX) and Santa Monica (SMO) departures; then Long Beach (LGB), SNA and ONT departures, and eventually San Diego Lindberg (SAN) departures. As the various departures climb out of Southern California TRACON (SCT) airspace, they enter Los Angeles Air Route Traffic Control Center (ZLA) airspace.

If more aircraft are crammed into the 7:00 am timeframe, it has significant impact for ZLA, particularly the sectors that work GMN, PMD, and TRM departure flows. ZLA would have to impose further Miles-in-Trail (MIT) restrictions and speed restrictions to properly sequence the stream of departures over the exit fixes. Such actions would directly cause flights at other southern California airports to be delayed as they await release into the active stream of departures. This would prolong the entire exodus process putting more resource intensive demands on FAA facilities. In order to staff sectors for longer periods of higher level activity and increased coordination, more equipment and personnel would become necessary. This situation can only deteriorate if other nearby airports were also to impose more restrictions.

Chapter 10 discusses impacts on Very Light Jets (VLJ's). With the limited visibility that the San Fernando Valley experiences, it may not be an accurate assumption that VLJ's are going to operate into Whiteman Airport. Whiteman does not have an ILS.

COMMENTS OF THE FEDERAL AVIATION ADMINISTRATION
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Condition 4 - The proposed restriction does not conflict with any existing Federal statute or regulation

FAA has a responsibility to represent the Federal interest in maintaining the efficiency and capacity of the national air transportation system. In particular, FAA ensures that Federally-funded airports maintain reasonable public access in compliance with 49 U.S.C. § 47107 (a) (1): "the airport will be available for public use on reasonable conditions and without unjust discrimination."

The proposed BUR curfew does not reflect a balanced approach that fairly considers both the local interest in noise mitigation and the Federal interest in maintaining access to this Federally-funded airport¹. It is unreasonable to impose a total ban on all aircraft operations for 9 hours each night or alternative severe mandatory restrictions without first pursuing available non-restrictive measures such as continuing your successful voluntary curfew and the sound insulation program. These two programs address the nighttime noise problem and can achieve compliance with California's noise variance law.

Moreover, the proposed curfew may be unjustly discriminatory by restricting access of aircraft whose noise signatures do not appreciably affect the 65dB CNEL contour. The curfew could represent a violation of Grant Assurance 22, Economic Nondiscrimination, codified at 49 U.S.C. § 47107 (a). Grant Assurance 22 states in part that the airport sponsor "will make the airport available as an airport for public use on reasonable terms without unjust discrimination to all types, kinds and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport." In this case, BUR already has an effective voluntary curfew and sound insulation program to mitigate the impacts of nighttime aircraft noise. BUR chooses instead to abandon these non-restrictive measures and proposes an access restriction that would likely unjustly discriminate against those aircraft types whose noise signatures have minimal impact on nighttime noise.

The BCA states that Orange County, Long Beach and San Diego airports have restrictions that "were not judged to be unjust or discriminatory." However, Congress specified restrictions pre-dating ANCA were not subject to ANCA, and those restrictions met this legal requirement. As a result, the BCA language is misleading because it implies FAA opined regarding unjust discrimination at these other airports. In fact, in letters we have written in response to airport sponsor queries, we indicated the FAA specifically did *not* review the restriction or an amendment *for issues not related to ANCA* (whether it is unjustly discriminatory, for example²). Airports with restrictions

¹ FAA interprets 49 U.S.C. § 47107 (a) (1) as requiring an airport's proposed access restriction for noise purposes to: (1) be justified by a demonstrated noncompatible land use problem; (2) be effective in addressing the identified problem; and (3) reflect a balanced approach to addressing the identified problem that fairly considers both the local and Federal interests.

² A sampling of letters from the FAA's website: In a 1994 letter to SNA, the FAA reviewed only the proposed amendment, not any pre-existing restriction. In a 2001 letter to SAN, the FAA specified the opinion in its letter was limited to the applicability of ANCA to a proposed amendment and did not address pre-existing restrictions in effect at the airport. In a 1992 letter to TVL, the FAA stated restrictions in a proposed settlement agreement were not subject to ANCA and that the FAA was not rendering an opinion
June 12, 2008

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prior to ANCA still must comply with other applicable law, including Federal grant assurances.

It is incorrect to state that since some unchallenged pre-existing restrictions "have been allowed to stand, there is no reason to believe the proposed curfew violates any grant assurances or other provisions of Federal law". Thus, the study cannot conclude, as it does, that the restrictions have all been adjudged by a court to be compliant with Federal law.

Condition 6 - The proposed restriction would create an undue burden on the national aviation system

Restrictions must reflect a balanced approach under which the potential benefits reasonably exceed the potential burden on commerce and that fairly consider both local and Federal interests. The statute reflects the national interest in maintaining the efficiency and capacity of the national air transportation system and ensuring that federally funded airports maintain reasonable public access.

- **If the demand for increased nighttime activity increases as BUR forecasts it will, potential impacts to other airports in the region are inadequately acknowledged or analyzed**

The study indicates that shifts in operations to other airports will have a negligible effect on noise and would be too small to be noticeable (Executive Summary page 15).

However, there were no noise analyses done (for example an Area Equivalent Method (AEM) analysis) to substantiate this claim. According to the study, nighttime operations at Van Nuys and Ontario could increase by approximately 15%, which could potentially be significant. Potential noise impacts to other airport communities should be considered when preparing the environmental assessment for the proposed restriction (161.305) as required by the National Environmental Policy Act (NEPA).

Since other airports in the vicinity have nighttime operations and are undertaking Part 161 studies as well, the potential domino effect on airports in California that are currently operating under a variance would need to be evaluated with more than a superficial treatment. A study should show how shifting traffic to these airports would affect their status under California variance law. Shifting of the traffic would affect LAX, ONT, LGB and VNY; that is, 44% of the airports operating under a variance. The ten airports operating under a variance are:

- John Wayne Airport-Orange County
- Long Beach-Daugherty Field-Airport
- Los Angeles International Airport
- Metropolitan Oakland International Airport

on the NEPA, grant compliance, safety, or economic regulation. In a 2000 letter to VNY, the FAA indicated that its restriction proposed before ANCA would be grandfathered, but the FAA had concerns that it would not meet Federal grant requirements.

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- Norman Y. Mineta-San Jose International Airport
- Ontario International Airport
- San Diego International Airport
- San Francisco International Airport
- Van Nuys Airport

Potential restrictions being studied at VNY include: 1) Incentives/Disincentives in Rental Rates based on noise; 2) Incentives/Disincentives in Landing Fees based on noise; 3) Quiet Jet Departure would be mandatory rather than voluntary with an escalating series of fines; 4) Establish maximum daytime noise limits; 5) establish limit on Stage 3 jets based at VNY; 6) Expansion of curfew to include all non-emergency jets and non-emergency helicopters; 7) Cap or phase-out of helicopters; 8) Phase out of Stage 2 aircraft; 9) Extend curfew to 9:00 am on weekends and holidays. The restriction proposals can be found at <http://www.vnypart161.com/ProjectBackground.cfm>

Additionally, the following information should be examined to determine how the analysis of the BUR proposal may be affected by restrictions and other limitations at airports expected to receive BUR flights.

Santa Monica Airport (SMO) is trying to restrict access by Category C and D jet aircraft operations. SMO's current restrictions and Municipal Code can be found at:
http://www.smgov.net/airport/n_municipal_c.aspx

Los Angeles International Airport (LAX) has a number of informal noise abatement procedures, including Over the Ocean Operations between midnight and 6:30 AM. (All arrivals land from the west, and all departures take off to the west, opposite direction flow.)

Ontario International Airport has several informal noise abatement procedures, including Contra-flow (opposite direction operations; arrivals from the east, and departures to the east) between 10 PM and 7 AM.

John Wayne/Orange County Airport has restrictions on noise, operating hours, and number of operations, details can be found at:
<http://www.ocair.com/aboutJWA/accessandnoise.htm>

Long Beach Airport also has extensive restrictions, see details at:
<http://www.ci.long-beach.ca.us/civica/filebank/blobdload.asp?BlobID=13100>

Camarillo Airport noise abatement procedures:
http://portal.countyofventura.org/portal/page?_pageid=827,1101761&_dad=portal&_schema=PORTAL

The BCA does not describe consultation conducted with airports to which the operations are presumed to be shifted.

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Additional Comments on the Content of the BCA:

• **There is Insufficient Information to Adequately Evaluate the Noise Analysis**

The study must describe with greater clarity how the passenger night operations (10 pm to 7 am) were developed for the noise analysis in Appendix B. The assumption in Technical Report 1 conflicts with actual information reported in Appendix BB of Technical Report 1 as follows: Page 66 of Technical Report 1 states that "carriers are likely to gradually add departures between 6:00 am and 7:00 am and arrivals between 10:00 pm and midnight to respond to demand from business travelers." This is contrary to Appendix BB page BB-3, which states "With one exception, all new flights were scheduled to conform to the existing voluntary curfew (from 10:00 pm to 7:00 am) since it is a well established practice at the Airport for airlines to try to do so." The forecast airline flight schedules in Appendix BB do not include any new departures scheduled between 6:00 am and 7:00 am or any new arrivals between 10:00 pm and midnight, yet nighttime departures and arrivals in the curfew hours increase in 2008 and 2015 in the noise analysis.

Page 66 of Technical Report 1 goes on to state that "it is expected that carriers will increase the number of arrivals scheduled between 9:00 pm and 10:00 pm. Many of these flights will be delayed from time to time by bad weather or traffic-related delays." It is unclear whether or not the current and projected nighttime passenger flights in the noise analysis are due to delayed arrivals of flights scheduled between 9:30 and 10:00 pm or early departures of flights scheduled at 7:00 am. There are no explicit assumptions made as to the percentage of flights that are expected to be delayed into the curfew hours or how the nighttime operation inputs were derived for the noise analysis.

The INM fleet (including substitutions) used to represent the Burbank fleet mix was not provided and could not be reviewed. Also, the terrain input, stage length analysis, and flight track analysis are all referenced to a "Phase 2 of the Part 161 Study". The Phase 2 study was not provided; therefore, the INM inputs for terrain, stage length, and flight tracks could not be reviewed.

There are also some inconsistencies between the forecast and the noise analysis inputs. The operations by user class in Tables B-3 to B-11 do not appear to be consistent with the forecasts in Chapter 1, Table 1-1 and the Technical Report Table 12. Also, the forecast operations in Table 29 of the Technical Report are not consistent with the operations in Appendix B Table B-2.

• **Noise-Induced Awakenings**

FAA notes that research of noise-induced awakenings has produced several different relationships between the percent of people awakened and indoor sound exposure level. However, there is currently no standard established for the estimation of the number of nighttime awakenings occurring from aircraft operations. There is considerable disagreement in the scientific community as to the appropriate method for calculating awakenings, as well as whether number of awakenings is an appropriate measure. In

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addition, the impacts of aircraft noise-induced awakenings on health or productivity are not known.

The use of supplemental metrics, in addition to DNL or CNEL, is allowed under Part 161. However, given the current state of scientific understanding of noise-induced awakenings, the FAA cannot validate the method used to calculate the number of nighttime awakenings from aircraft operations at Burbank and will review the results with caution. This analysis provides some comparative data with respect to the alternatives under review, but is not sufficiently reliable as an impact indicator to guide determinations relevant to Part 161 conditions for approval.

- **Methodology Used to Establish the Proposed Noise-Based Curfew is Flawed**

Technical differences in the certification processes for jet-powered, transport-category airplanes versus propeller-driven small airplanes and commuter-category airplanes make it difficult to establish for all types of airplanes a single noise threshold that is based solely on certificated noise levels, as proposed by BGPAA.

FAA publishes and maintains in Advisory Circular (AC) 36-3H estimated airplane noise levels in consistent units (A-weighted sound level in decibels, dB(A)) for jet-powered and transport-category airplanes, as well as for propeller-driven small airplanes and commuter-category airplanes. AC36-3H lists estimated takeoff and approach dB(A) noise levels of aircraft in descending order.

FAA recommends the use of takeoff and approach dB(A) noise limits if airports seek to establish a noise-based curfew, rather than the BGPAA's currently proposed 253EPNdB cumulative limit.

- **Air Quality Impacts Were Not Considered**

The BCA does not address the increased emissions/air quality impacts of the proposal for operators that are assumed to move operations to other airports. BUR, VNY, and ONT airports are in one of the worse non-attainment areas for air quality. Increased fuel burn and air quality impacts associated with changes in air traffic patterns, delays, or holding aircraft to a hard curfew also should be addressed.

Page 4-17 estimates roundtrip driving time from downtown to Ontario to be one hour. During peak driving periods it takes over an hour one way. This also contributes to the region's air quality impacts, and underestimates costs to displaced passengers.

Potential air quality impacts also should be considered when preparing the required environmental assessment for the proposed restriction (161.305).

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• **Some Costs are Outdated or were Ignored**

In a June 9, 2006 press release, the Airport Authority indicates that "Total tax valuation at the Airport is \$979.9 million, consisting of \$881.9 million in unsecured and possessory interest values of aircraft based at the airport and \$98 million in secured property valuation."

Housing cost estimates do not account for changes in market conditions from the estimate dates of January 2006 to January 2007. It would be expected that price decline would be less than 10% since January 2007, but significant.

Increasingly, fuel costs are of paramount importance to aircraft operators. The fuel costs used in the BCA do not reflect either recent substantial increases or recent cost projections (\$150 to \$200 per barrel) for the next 1 to 2 years. These potential costs do not appear to be factored into the BCA. In addition, the Internal Revenue Service standard mileage rate has increased to .505 which would increase vehicle cost estimates.

Impacts to customers by delaying the start or finishing of their work (i.e., movie related industries) were not considered. The "Just In Time" (JIT) service would be impacted by a full curfew. We understand the studios and various movie-related industries could be the largest customers of the JIT related service in and around the Burbank area.

Other comments

Use of revenue collected by any fines imposed as part of a nighttime restriction must be consistent with Federal grant agreements. They may not be used off the airport for non-aviation purposes. Does BGPAA have plans for revenue collected?

In chapter 4, the BCA states "In August 2007, the Airport Authority's consultant produced a preliminary draft benefit-cost analysis that was reviewed by the Airport Authority and discussed with the FAA." This gives the impression that the FAA reviewed BUR's BCA. The FAA had a very brief meeting with a representative from BUR but did not discuss anything in detail at an August 2007 meeting, nor did we have access to the preliminary draft BCA.

The reference to Vision 100 section 189 is no longer applicable and should be removed.

Block rounding shown on Figure 4-1 is more extensive than normally accepted for funding eligibility.

Your statement at the top of page 4 of 24 is unclear: "...no air carrier jet would comply."

Sound attenuation makes a structure compatible with the airport. Please confirm the benefit of reducing the 24-hour CNEL is to un-attenuated dwellings (Based on the information on 5-1, there has been a reduction of incompatible dwellings from 4,700 to 440 in CNEL 65 as of 2005; and in 2015 there would be a reduction from 1,260 un-

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attenuated to 300 un-attenuated dwellings). Otherwise, there could be a double counting of benefits to dwelling units as a result of the proposed restriction(s). The reduction in the number of dwellings indicates much of the noise problem has been mitigated. The study should clarify how many have been sound attenuated.

Please confirm Table B-13 information that 12.9 % of the departures in 2005 were Light Corporate Jets. These aircraft were using Runway 8 even with the 12,500 pound restriction. BUR Tower review of this information indicates that 12.9% of light corporate jets departing Runway 8 in 2005 is high. We believe the numbers would be in the 1-2% range.

Technical Report I, states at pages 51-52, Other Aircraft Operators: "Up until a few years ago, the helicopter operations were significantly greater because the Airport was being used as a practice field by a Van Nuys-based helicopter training school." There is no starting timeframe provided.

The report also states, without providing a timeframe, "However, some years ago, enforcement of Airport rules and regulations were strengthened, and this reduced the use of the Airport as a practice field." This should also explain which noise rules are being discussed and whether ANCA applied to the strengthening of the rules.



**Federal Aviation
Administration**

Associate Administrator for Airports
800 Independence Avenue, SW
Washington, DC 20591
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To: Part 161 Comment Docket

Company: Burbank-Glendale-Pasadena Airport Authority

Phone:

Fax: 9-1-818-848-1173

From: Federal Aviation Administration

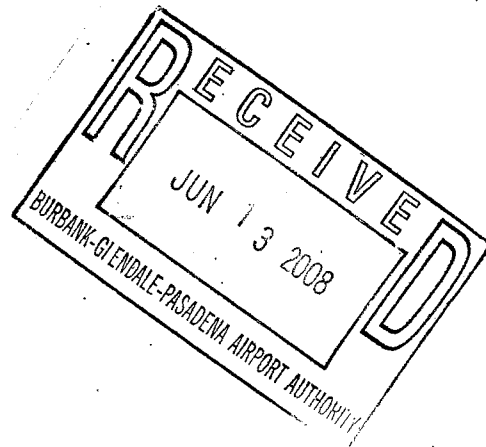
Title: Office of the Associate Administrator for Airports

Date: June 13, 2008

Pages: 14 (13 pages attached)
w/cover:

Facsimile

This Facsimile Cover Transmits Comments of the Federal Aviation Administration to the Part 161 Docket for Proposed Restrictions at Bob Hope Airport (BUR), California.





U.S. Department
of Transportation
Federal Aviation
Administration

Office of the Associate Administrator
for Airports

800 Independence Ave., SW.
Washington, DC 20591

DEC 11 2008

Ms. Gina Marie Lindsey
Executive Director, Los Angeles World Airports
Los Angeles International Airport
1 World Way
Los Angeles, CA 90045

Dear Gina Marie:

When I spoke with you last Tuesday, I shared the Federal Aviation Administration's concerns about a proposed restriction at Van Nuys Airport (VNY). The FAA has conducted a preliminary review of the city of Los Angeles' September 2008 Environmental Impact Report (EIR) "Van Nuys Airport Noisier Aircraft Phaseout." The EIR states the city of Los Angeles will impose a decrease, in four phases, of the maximum takeoff noise levels at VNY. This restriction would take effect January 1, 2009.

This raises issues about the city's compliance with its obligations under both the Airport Noise and Capacity Act of 1990 (ANCA) and statutory grant assurances. Our last written communication with the city (letter of April 17, 2000 from Woodie Woodward to Breton K. Lobner) provided the standard for ANCA grandfathering provisions:

"As we have previously notified airport proprietors, a proposal would have to be essentially the same as originally proposed or less restrictive than originally proposed to retain its grandfather status under ANCA. If the city elects to reconsider the proposed 1990 "phase-out" rule along these lines, then the FAA would review such a proposal together with the city's reasons that would support a finding that the proposal qualifies for grandfathering and is indeed essentially unchanged or less restrictive."

The city's originally proposed phase-out rule included a phase out of aircraft exceeding certain takeoff noises levels. The city proposed to carry out the rule in four phases over seven years. At the end of the period, aircraft with certified takeoff noise levels of 77 A-weighted decibels or higher would be restricted from operating at VNY. In our communications with city representatives over the years, we have clearly explained how ANCA applies at VNY. VNY restrictions proposed before enactment of ANCA but not in effect may be applied only to Stage 2 aircraft.

Consistent with 49 U.S.C. 47526, the FAA needs information to support the city's position that the phase out you propose to implement in January 2009 is grandfathered under ANCA. While the EIR's description of the phase-out rule appears to support the city's assumption that a phase out could be grandfathered, under ANCA, it may only be applied to Stage 2

aircraft. Appendix A of the EIR indicates the phase out would be implemented in full, regardless of whether components are grandfathered. Before the city can implement the restriction with respect to Stage 3 aircraft, it must meet 14 Code of Federal Regulations Part 161 requirements.

Our past communications with city officials also have clearly addressed its Federal grant obligations. Besides ANCA, airport noise and access restrictions must meet standards under pre-existing Federal law, including Federal grant and any surplus property obligations. Besides other assurances, a restriction must be fair and reasonable, may not be unjustly discriminatory, and may not impose an undue burden on interstate or foreign commerce.

The city should examine these obligations as part of its local process to consider adoption of the phase-out rule. We need information to support a positive finding under the grant assurance provisions. If the city is found to be in noncompliance under Part 161 subpart F or under other obligations, it may affect the eligibility of the city to continue to receive Federal grants and passenger facility charges at all airports owned by the city.

We recommend the city take no action to enact the "Van Nuys Airport Noisier Aircraft Phaseout" until we can get together to resolve these concerns. We are prepared to meet with you face-to-face or by telephone to discuss how LAWA and the city can remain in compliance with ANCA and other Federal law.

Let us know who on your staff to contact so we can work through these issues. If you would prefer, you can have your representative contact Ralph Thompson, Assistant Manager, Planning and Environmental Division, or Vicki Catlett of his staff to set up a meeting or telephone conference. Their telephone number is (202) 267-3263.

I look forward to working with you to resolve these issues.

Sincerely,



Catherine M. Lang
Deputy Associate Administrator
for Airports

Appendix I

SUMMARY OF INTERVIEWS WITH AIRCRAFT OPERATORS
AT BOB HOPE AIRPORT REGARDING POTENTIAL IMPACT OF CURFEW
ON BUR OPERATIONS

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Appendix I

SUMMARY OF INTERVIEWS WITH AIRCRAFT OPERATORS AT BOB HOPE AIRPORT REGARDING POTENTIAL IMPACT OF CURFEW ON BUR OPERATIONS

I-1 GENERAL AVIATION AND AIR TAXI OPERATORS

Interviews were conducted by Bill de Decker of Conklin & de Decker Aviation Information, from July 11 through August 4, 2006. All but two interviews were conducted in person. Max Wolfe or Mark Johnson of Jacobs Consultancy accompanied de Decker at seven interviews.

Companies and personnel interviewed included:

- Ameriflight -- Gary Richards, President
- AOPA (Aircraft Owners and Pilots Association) – Dave Salzman, BUR Liaison
- AvJet – Mark Lefevre, President; Rich Hildebrand, VP and General Manager; Kevin Sullivan, Customer Service Manager; Ken Seals, Director of Operations
- Chartwell Partners – Tom Indseth, Director of Maintenance; Scott Peterson, Director of Aviation
- Disney-Earthstar – Eddie Lovelock, Chief Pilot
- Dreamworks – Scott Harrison, Pilot
- Helinet – Dan Dudeck, General Manager
- J.G. Boswell – Alan Stearns, Aviation Manager
- Mercury Air Center – Steve Schell, General Manager
- Million Air – Ron Reynolds, Director of Operations
- NetJets – Jim Christiansen, Senior Vice President
- Occidental Petroleum – Rob McNamara, Aviation Manager
- TWC Aviation – Bob Oliver, General Manager
- Time Warner (GTC Transportation) – Bob Barnes, Aviation Manager

Because most of the interviewees requested confidentiality, their responses are summarized below without attribution to their companies.

Operator A

Ability to operate at night for long distance travel is essential. Curfew would cause them to look seriously at moving to alternate airports. VNY and LAX are the most likely candidates. Staying at BUR and repositioning aircraft when needed is a possibility, though it would be very costly, possibly requiring additional pilots.

Operator B

Operate only infrequently at night. With a full curfew they would remain at BUR. When nighttime travel is needed, they might reposition departures to McClellan-Palomar. Nighttime arrivals may use LAX or VNY, repositioning to BUR in the morning.

Operator C

While they do not operate frequently at night, the ability to operate at night is essential to their operation. Thus, they would seriously consider relocating to an alternate airport if a curfew is adopted at BUR. They did not suggest candidate airports.

Operator D

Relatively few nighttime operations, but they are essential to their clientele. Full curfew would have severe effects. They would need to move all or part of their operation to another airport where they could operate around the clock or with significantly less nighttime restrictions. VNY would be the preferred alternative, but they would be able to move only part of their operation there (because of space limitations). Camarillo would be a good alternative if that airport would put in the ILS that is being planned.

Operator E

Must operate frequently at night. Currently are forced to reposition to LAX to use nighttime customs service. With a full curfew, they would likely keep their aircraft at BUR but reposition to VNY or LAX when necessary. Future growth would occur at VNY.

Operator F

Curfew would have a major impact on their business since they provide regular service to transient aircraft at night. They expect that VNY would gain the business driven away from BUR.

Operator G

Very little nighttime activity. Would remain based at BUR, repositioning to LAX if needed to work around the curfew.

Operator H

The curfew would not have a severe effect on them, partly because they also have an operation at VNY, and they would remain at BUR.

Operator I

They do not operate frequently at night, but on occasion nighttime flight is essential. Thus, they would seriously consider moving to an alternate airport. Possible candidates include VNY, Camarillo (if an ILS was installed), or Bakersfield (a less likely possibility).

Operator J

Curfew would have a major impact on their business, forcing them to reduce nighttime staff. Could cause them to shut down or substantially downsize their operation at BUR.

Operator K

Full curfew would cause transients to use other airports in the LA area, all of which have drawbacks for users destined for BUR: LAX – good facilities but high fees; VNY – close to BUR but congested; LGB – far from San Fernando Valley; SMO – good location but severe restrictions.

Operator L

Although this operator is not based at BUR, they have used BUR in the past for training activity. They also use BUR to drop off and pick up passengers. The curfew alternatives would have no effect on their operations because their charter business is active only during daylight hours.

Ameriflight

They provide a nighttime courier service to the banking industry which is a critical part of their business. This service uses medium turboprop aircraft (such as the Beech 99 and Metroliner). If either a full curfew or departure curfew is adopted at BUR, they would have to move this operation to Ontario, where they have a large base of operations. (The noise-based curfew would not affect Ameriflight.)

AOPA

Operators of light aircraft at BUR would be unlikely to be seriously affected by curfew. Most of those aircraft are for private use and most of those operators do not fly at night. Furthermore, few light single engine aircraft remain at BUR. Their numbers have been declining steadily over the year. Most of these operators are moving to Whiteman.

I-2 AIR CARRIERS

Interviews were conducted by Mike Tubridy of Jacobs Consultancy in July, September, and October of 2006. Jonathan Pagan of Jacobs Consultancy conducted one interview in September 2006. Off the record interviews with officials at FedEx

and UPS were conducted by Ken Bukauskas of Jacobs Consultancy in December 2007 and January 2008.

The following companies and personnel were interviewed:

- Alaska Airlines and Horizon Airlines – Celley Brown, BUR Station Manager and Peggy Willingham, Director of Safety and Environmental Affairs
- American Airlines – Carl Periello, BUR Station Manager
- JetBlue – Robert Waldron, BUR Station Manager
- Skywest Airlines – Casey Madsen, Joint BUR/LGB Station Manager
- Southwest Airlines – Mike Rucker
- United Airlines – Pamela Jones, BUR Station Manager
- UPS – Bruce Okano, West LA District
- US Airways – John MacDonald, BUR Station Manager

Alaska Airlines and Horizon Airlines

They would not explain how the airlines would most likely respond to a mandatory curfew at BUR.

American Airlines

American has an arrival from DFW scheduled for 9:59 p.m. With any kind of delay, it would be pushed into the curfew hours. If they are forced to divert, they would use LAX.

JetBlue

JetBlue has a 9:50 p.m. arrival from JFK that could be affected by a curfew. The possibility of that flight being delayed into the curfew hours is fairly high, especially during the winter when bad weather could affect JFK. If they had to divert late arrivals, they would use ONT. Implementation of a curfew could affect their future growth. (They are looking at a potential Washington, DC service.)

Skywest Airlines (Delta Express)

Skywest's Delta Connection flight # 3953 has a published arrival time of 9:49 p.m. It is delayed past 10:00 p.m. approximately 5 times a month. Delta will not reschedule the flight to arrive at BUR earlier because too many connections in Salt Lake City would be missed, causing the airline to forego approximately \$1 million in revenue per month, making the flight economically unviable. The airline would probably continue the flight with implementation of a mandatory curfew, cancelling it when it would be delayed into curfew hours. They said that 90% of the time they would

cancel a flight rather than incur the cost and disruption associated with diverting a late flight to another LA area airport.

Southwest Airlines

Southwest has several evening arrivals that could be affected by a curfew if they were delayed. They will not consider regularly diverting to another area airport. Their preference is to cancel the flight. If this became more than a rare occurrence, they would have to adjust flights throughout their network to work with the curfew.

United Airlines

United has one morning departure scheduled for 6:50 a.m. If it were forced to reschedule to 7:00 a.m., the airline would probably cancel the flight, as it would miss vital connections at the San Francisco hub.

United also has two evening arrivals that could be affected by a curfew, one from Denver and the other from San Francisco. They did not indicate how they would respond if those flights were delayed into the curfew hours. They did note that the costs associated with diverting the aircraft to another airport would be very great.

UPS

UPS did not indicate how they would respond to a curfew at BUR. (They have four arrivals a week before 7:00 a.m. All departures are later in the day during non-curfew hours.)

US Airways

They have a 6:45 a.m. departure to PHX that continues to Puerto Vallarta in the winter. That flight must depart BUR no later than 7:05 a.m. or risk missing connections. They have a scheduled arrival at 9:15 p.m., which should not be affected by the curfew. On nights when that flight is delayed into the curfew hours, they would either cancel it or possibly divert it to John Wayne-Orange County Airport.

Airport Users Interviewed During Part 161 Planning Process
Bob Hope Airport FAR Part 161 Study

Company	Interviewee	Title	Date of Interview
Alaska and Horizon Airlines	Celly Brown	Station Manager	9/28/2006
	Peggy Willingham	Director, Safety and Env't'l Affairs	
American Airlines	Carl Perriello	Station Manager	7/14/2006
Ameriflight	Gary Richards	President	7/12/2006
AOPA	Dave Salzman	BUR Liaison	7/13/2006
AvJet	Mark Lefevre	President	7/11/2006
	Rich Hildebrand	VP and General Manager	7/13/2006
	Kevin Sullivan	Customer Service Manager	
	Ken Seals	Director of Operations	
Chartwell Partners	Tom Indseth	Director of Maintenance	7/6/2006
	Scott Peterson	Director of Aviation	
Disney/Earthstar	Eddie Lovelock	Chief Pilot	7/14/2006
Dreamworks	Scott Harrison	Pilot	7/14/2006
FedEx	anonymous	Regional or Headquarters office	Jan. 2008
Helinet	Dan Dudeck	General Manager	7/14/2006
J.G. Boswell	Alan Stearns	Aviation Manager	7/12/2006
JetBlue	Robert Waldron	General Manager	7/14/2006
Mercury Air Center	Steve Schell	General Manager	7/11/2006
Million Air	Ron Reynolds	Director of Operations	7/12/2006
NetJets	Jim Christiansen	Sr. Vice President	8/4/2006
Occidental Petroleum	Rob McNamara	Aviation Manager	7/11/2006
Skywest Airlines	Casey Madsen	BUR/LGB Station Manager	9/27/2006
Southwest Airlines	Mick Rucker		10/4/2006
TWC Aviation	Bob Oliver	General Manager	7/13/2006
Time Warner (GTC Transportation)	Bob Barnes	Aviation Manager	7/11/2006
United Airlines	Pamela Jones	Station Manager	9/28/2006
UPS	Bruce Okano	Air Operations Manager, West LA District	7/14/2006
UPS	anonymous	Regional or Headquarters office	Dec. 2007
US Airways	John McDonald	Station Manager	7/14/2006
n.a. -- not available			