



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

Office of Airport Planning
and Programming

800 Independence Ave., SW.
Washington, DC 20591

AUG 02 2013

Mr. Scott Tatro
Airport Environmental Manager
Los Angeles World Airports
P.O. Box 92216
Los Angeles, CA 90009-2216

Dear Mr. Tatro:

This letter is in response to your June 28 "Supplemental Analysis" in support of your application for approval of an airport noise and access restriction at Los Angeles International Airport (LAX). The Supplemental Analysis was submitted in response to the Federal Aviation Administration's (FAA) March 15 letter detailing the information and analysis needed to complete your application under 14 Code of Federal Regulations (CFR) Part 161.

The FAA has reviewed the Supplemental Analysis and has determined that there are areas that continue to be incomplete.

Please advise the FAA within 30 days of receipt of this letter whether Los Angeles World Airports (LAWA) intends to resubmit and/or further supplement the application. Failure to so notify the FAA within the allotted time will be cause for denial of the application and closure of the matter without prejudice to later application and does not constitute disapproval of the proposed restriction. 14 CFR §161.313(c).

The FAA has determined that your supplemental analysis is incomplete in the following areas.

A. Airport Noise Study Area and Noise Contours

Title 14 C.F.R. § 161.5 defines the "airport noise study area" as "[t]hat area surrounding the airport within the noise contour selected by the applicant for study [that] must include the noise contours required to be developed for noise exposure maps specified in 14 CFR Part 150."

Part 161 requires noise exposure to be calculated in terms of yearly day/night average sound levels (DNL), and 14 C.F.R. § 161.305 (e)(2)(i)(A)(ii)(A) requires maps of the airport noise study area to be overlaid with noise contours as specified in § 161.9 and § 161.11, which in turn reference Appendix A of 14 C.F.R. part 150. Appendix A requires continuous contours for DNL levels of 65, 70, and 75 dB and allows additional DNL contours to be developed and depicted.

FAA recognizes the Community Noise Exposure Level (CNEL) as an accepted methodology in lieu of DNL in California.¹

Supplemental Analysis, Section 1 Introduction and Section 2.2.1 Definition of ANSA based on area used for sleep awakenings.

In the March 15th letter, the FAA informed LAWA that Part 161 regulations allow an applicant to select a noise contour beyond the CNEL 65 dB contour as its airport noise study area and to use a supplemental metric to analyze the problem a proposed restriction is intended to address. However, the FAA reminded LAWA that DNL (i.e., CNEL in California) remains the primary metric under Part 161 regulations and that CNEL contours must encompass the applicant's selected airport noise study area which includes the sleep awakenings. The FAA allowed LAWA to truncate the CNEL contours below CNEL 65 dB in this case to only depict them to encompass the areas where sleep disturbance is predicted and to exclude large areas that do not include individuals predicted to experience sleep disturbance. LAWA's response is that Part 161 by reference to Part 150 only requires CNEL contours of 65 dB and higher, and "invites" additional contours without specifying that they be CNEL contours. LAWA has created a "Noise-Induced Awakenings Change" (NIAC) contour in lieu of CNEL contours below CNEL 65 dB.

The FAA specifically sought comments on this issue when developing the Part 161 regulations and explained its disposition of the issue when it issued the regulations. 56 Fed. Reg. 48661 (Sept.25, 1991). The FAA chose to reference 14 CFR part 150 in the Part 161 regulations because Part 150 includes the DNL metric among its requirements and would, therefore, retain the FAA's tested and proven metric. The FAA pointed out that referencing Part 150 would also assure that the flexibility inherent in noise assessment to supplement DNL with other analyses under Part 150 would also be available to Part 161 applicants. The FAA clearly rejected an option that would permit each airport operator to select the metric(s) and methodology best suited to its own local conditions in lieu of using DNL because this could lead to a confusing array of approaches with significant room for error or non-uniform treatment of airport users and airport neighbors. 56 Fed. Reg. at 48669-70. The FAA also addressed the issue of whether the DNL 65 dB contour should be prescribed as the outer limit of the airport noise study area and decided to allow applicants the flexibility inherent in Part 150 to use contours lower than DNL 65 dB. In making this determination, the FAA specifically rejected an option that would have permitted an applicant unlimited flexibility in deciding how to define the airport noise study area. 56 Fed. Reg. at 48670,

Finally, LAWA's contention that noise contours below DNL 65 dB are optional under Part 150 is a misinterpretation of what optional means in this context and how it has been applied for

¹ CNEL is an acceptable substitute for DNL in the state of California. Part 161 requirements applicable to DNL are also applicable to CNEL.

decades under Part 150. Under Part 150, an airport operator must submit noise contours of DNL 65, 70, and 75 dB and is not required to submit lower noise contours. However, airport operators have the option of going below DNL 65 dB; and if an airport operator seeks the FAA's approval of noise compatibility measures below DNL 65 dB, the operator must exercise the option of submitting contours necessary to cover the area where actions are recommended together with other appropriate local determinations and information required for noise exposure maps under Part 150.

LAWA's application remains incomplete as long as it does not expand its CNEL noise contours to cover the airport noise study area it has selected as the basis for its recommended restriction, i.e., the entire sleep awakenings area. Alternatively, LAWA could have a complete application with respect to the airport noise study area by retaining the CNEL 65 dB contour as its outer limit, but this would also limit the Part 161 airport noise study area to within the CNEL 65 dB contour and require LAWA to exclude all areas beyond this contour from its Part 161 analysis.

B. Technical Data Supporting Noise Impact Analysis

Part 161 requires noise exposure to be calculated in terms of DNL², and 14 C.F.R. § 161.305(e)(2)(i)(A)(1)(ii) requires an analysis of the estimated noise impact of aircraft operations with and without the proposed restriction.

Title 14 C.F.R. § 161.305 (e)(2)(i)(A)(ii)(C) requires the analysis of the estimated noise impact of aircraft operations with and without the proposed restriction to include technical data supporting the noise impact analysis, including the classes of aircraft, fleet mix, runway use percentage and day/night breakout of operations.

Supplemental Analysis, Section 2.3.2 CNEL and SEL values at census grid points in ANSA.

The FAA advised LAWA that it needed to provide the calculation of the probability of awakening at least once, the CNEL level, the population, outdoor SEL values, and the outdoor to indoor sound reduction assumed at each sleep awakening grid point. The electronic files LAWA provided in response did not include the CNEL value at grid points below CNEL 65 dB. CNEL values were only provided at grid points where CNEL was at or above CNEL 65 dB. CNEL data for grid points that were below CNEL 65 dB were simply indicated by "<65". It appears that LAWA's rationale for not providing CNEL data is the same as for not providing CNEL contours below CNEL 65 dB. As explained above, CNEL remains the primary noise metric under Part 161 that can be supplemented with LAWA's chosen sleep disturbance analysis. LAWA's application remains incomplete until it provides the requested calculated value of CNEL in electronic format for all grid points in its selected airport noise study area, including any points that are below CNEL 65 dB.

² DNL is an acceptable substitute for CNEL in the state of California. Part 161 requirements applicable to DNL are also applicable to CNEL.

Supplemental Analysis, Section 2.3.1 Supporting data regarding non-conforming flights.

The FAA found LAWA's initial application incomplete because it did not provide data regarding ground tracks and runway use percentage for non-conforming flights **under the proposed restriction**, as well as the assumed stage length (aircraft weight) of these flights **under the proposed restriction**. The data that LAWA provided in Section 2.3.1 of the Supplemental Analysis in Figure S-16 and Tables S-2 and S-3 are for the **status quo** scenario. The data in Figure S-16 and Tables S-2 and S-3 of the Supplemental Analysis must also be provided for the proposed restriction scenario. Section 7.1.1 of the Part 161 application states that "affected carriers are expected to comply by slightly reducing their payloads." Therefore, for the purpose of noise modeling the non-conforming flights under the status quo scenario must have been re-assigned to conforming flight tracks under the proposed restriction noise modeling scenario. To complete its application, the FAA requests that LAWA provide a figure similar to Figure S-16 depicting the new conforming flight tracks assigned to the flights that were considered non-conforming under the status quo scenario. The FAA also requests that LAWA provide tables similar to Tables S-2 and S-3 indicating the new conforming flight track name under the proposed restriction scenario for each aircraft in Table S-2 and S-3, as well as stage length, runway, and number of departures.

C. Cost-Benefit Analysis

Section 161.305(e)(2)(ii)(A)(1) requires evidence, based on a cost-benefit analysis, that 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.

Section 161.305(e)(2)(ii)(A)(1)(ii)(B) requires the consideration, as appropriate, of costs associated with altered or discontinued aircraft operations, including costs incurred due to flight crew time duty and rest requirements, the reduction in operational efficiencies and evidence to support that there will be a decrease in passenger and shipper consumer surplus due to the proposed noise restriction.

Supplemental Analysis, Section 2.4.3 Estimation of costs of runway use restriction associated with altered operations, flight crew duty time and reduction of operational efficiency.

The estimation of decrease in consumer surplus due to altered aircraft operations is incomplete. Consumer surplus is an economic measure of consumer satisfaction. It is calculated by analyzing the difference between what consumers are willing to pay for a good or service relative to its market price. A consumer surplus occurs when the consumer is willing to pay more for a given product than the current market price. Currently accepted economic methodology would provide a quantitative basis of the delay actually incurred for the number of passengers on board, the average fare, and the elasticity of demand.

In passenger transportation markets, the full price of travel includes the money price plus an increment representing the value of transportation time. Currently, pilots at LAX are allowed to perform non-conforming departures if wind conditions warrant. The LAX Part 161 application proposes to restrict these non-conforming departures. If the restriction is granted, flights will be delayed as carriers offload fuel, cargo, and/or passengers in order to achieve a safe take-off weight.

In the supplemental Part 161 application by LAWA, a complete answer needs to estimate the change in consumer surplus to not just offloaded passengers who accept compensation voluntarily, but to all passengers impacted by a flight delay. For example, the reduction on consumer surplus for passengers who are involuntarily denied boarding would be understated by applying voluntary compensation as a measure. A complete answer would measure the number of affected flights; the minutes of delay for each affected flight; missed curfews of destination airports; the number of passengers affected; and the methodology used to estimate the loss.

Finally, FAA is available to meet with LAWA representatives to answer any questions or address any concerns regarding LAWA's application and the Part 161 process.

Sincerely,



Benito De Leon
Director, Office of Airport
Planning and Programming